OXFORD, WORCESTER, AND WOLVERHAMPTON RAILWAY.

Railway Department, Board of Trade,
SIR, *Whitehall, Oct. 16, 1858.*

In compliance with the instructions contained in your letter of the 25th ultimo, I have the honour to report, for the information of the Lords of the Committee of Privy Council for Trade, the result of my inquiry into the circumstances which attended the accident that occurred on the 23d August, between the Round Oak and Brettel Lane stations of the Oxford, Worcester, and Wolverhampton Railway.

These two stations are situated, respectively at 2¾, and 4 miles to the south of Dudley, and at 25, and 23¾ miles to the north of Worcester. The line runs between them, for a mile and a quarter, over a series of curves on which the view is much obstructed, and on a gradient of 1 in 75·18 falling towards the south.

On the day in question, an excursion train returning from Worcester to Wolverhampton reached Round Oak at 10 minutes past 8. It was composed of two engines and tenders, 28 carriages, and 2 break-vans, one of these latter having been placed immediately behind the engine, and the other at the rear of the train. Shortly after it arrived at this station, the couplings gave way near the middle of the train, and 17 carriages containing about 450 passengers, with a van behind them, began to run back down the incline towards Brettel Lane.

A second train, also full of excursionists, was following the first one, with an interval of 11 or 12 minutes between them; and the loose carriages ran back upon the second train with great violence. The engine in front of the second train, which lost its funnel and its buffers, was so little injured in other respects as to be able afterwards to proceed on its journey ; but the three last vehicles of the first train were broken all to pieces; and the most dreadful consequences resulted to the passengers, 14 of them having lost their lives, fifty others having been more or less severely injured, and upwards of 170 persons, altogether, having applied for compensation, on account of injury to their persons or their clothes. I append a list of the names of those who were killed and of those who were most severely injured.

Such are the bare facts of what may be considered as decidedly the worst railway accident that has ever occurred in this country, and I shall now proceed to state in detail the different circumstances connected with it.

Notices were issued, under date the 12th August, of an excursion train to be run at very low fares on the 23d of that month, from Wolverhampton, and numerous intermediate stations, to Worcester and back. I enclose a copy of one of these notices, by which it will be seen that the train in question was intended for the use of teachers and children of the various schools on the route only, and that no other classes of persons were to be allowed to avail themselves of it; though I may add that this intention was not carried into effect, and that the following numbers of adults and children respectively, appear, by a return with which I have been furnished by the company, to have been actually booked to travel by it between the several stations enumerated and Worcester:—

	Adults.	Children.
Wolverhampton	35	37
Priestfield	12	—
Bilston	110	110
Daisey Bank	25	95
Princes End	266	60
Tipton	2	15
Dudley	89	79
Netherton	9	7
Round Oak	9	43
Brettel Lane	10	24
Stourbridge	30	6
Kidderminster	144	250
Hartlebury	3	13
	767	739

Adults	767
Children	739
Total	1,506

This train left Wolverhampton at 9·21 in the morning, with 1 engine and tender, 24 carriages, and 2 vans. It travelled in due course as far as Brettel Lane; but as it was starting from that station on its way towards Worcester, with 2 engines and tenders, 32 carriages, and 2 vans, the central couplings and side chains of a carriage, ten or twelve from the last van, gave way. The same thing occurred again, two or three carriages further from the last van, as the train was starting from Hagley with five additional carriages attached to it; and after reaching Droitwich the guard discovered that a third screw coupling had been fractured, at four or five carriages from the hind van, though the side chains had in this last case remained perfect, and had prevented an actual separation from taking place.

These fractures were repaired on the journey, according to the means at the disposal of the guard. At Brettel Lane he connected the draw-bars of the carriages by means of four stout links, such as are used for *goods* couplings; at Hagley he employed a second screw coupling, which he found between the two

carriages which had become disconnected; and at Droitwich he re-united the central attachment by means of two links on the one side, and a hook and a link on the other. The train then proceeded to Worcester without further accident, and reached that place at 12·32.

I enclose herewith, a section of the line between Wolverhampton and Worcester, by which it will be observed that the gradients on the whole fall, considerably from the former to the latter station; that, more particularly, the train was starting down falling gradients of 1 in 660 and 1 in 121 respectively, when the couplings gave way at Brettel Lane and Hagley; and that, with the exception of three short portions of rising gradients, of which 1 in 264 is the steepest, the line falls all the way from Hagley to Droitwich. Considering the nature of these gradients, and having regard to the fact that the fractures of the couplings on the journey towards Worcester all occurred, not in the front of the train where the strain upon the couplings in consequence of any tractive power exerted by the engine would naturally be most severe, but in the last half of the train, it would appear, unless these couplings were in a very defective condition, as if the break of the hind van had been employed in a most injudicious manner.

The broken parts of the couplings that were fractured on the journey towards Worcester were not retained for examination, so that, with the exception of one half link, I have not had an opportunity of seeing them, and I am therefore unable to form an opinion as to their quality; but they appear to have been the ordinary couplings supplied by the carriage builders with the carriages. To judge by those which I have observed upon other carriages of the company, there could be no likelihood of such results, in the ordinary course of events, on falling gradients, although, as I shall presently have occasion to show, there is reason for believing a great number of these couplings to contain certain defects.

A good deal of suspicion, therefore, to say the least of it, must fall upon the hind guard, Frederick Cook, as to the mode in which the break of the last van was employed on the journey towards Worcester; and this suspicion is by no means lessened by the circumstance that he permitted half-a-dozen, passengers to ride with him in his van, and that he employed one of their number, according to his own admission, to take the break off in two cases. There is evidence, also, of his having been smoking and drinking with the passengers in his van, which leads to the belief that his conduct must have been altogether highly irregular.

In descending the incline from Round Oak to Stourbridge, there were four persons acting as breaksmen in different parts of the train; Mr. Harris, an assistant in the office of the secretary and superintendent of the line, who was travelling in charge of the train between Dudley and Worcester; the *bank foreman*, who superintends the working of the bank engines from siding to siding, and who happened to be going to Stourbridge; and the two guards in the front and hind vans; but on the greater portion of the line the train was worked by the two guards, Mr. Harris having ridden in a second-class break carriage between Dudley and Stourbridge and between Hagley and Kidderminster only, and having performed the rest of his journey, partly on the second engine, partly on the footstep of the last van, and partly, between Droitwich and Worcester, *in* the last van.

Mr. Harris, himself, was only aware of two of the fractures which occurred, and he simply reported to the secretary and superintendent on his arrival at Worcester that there had been *a* fracture of the couplings; but the inspector of rolling stock who examined the train there, found that there were, as has been already stated, two broken screw couplings and four broken side chains, as well as that a third screw coupling had given way, of which the side chains remained complete. He states that two of the screw couplings gave way in the middle of the "D" link, as it is technically termed, or that link which is passed over the hook of the draw-bar; that in the third, the "D" link had disappeared altogether; and that, as far as he can recollect, the links of all four of the side chains had been broken. He caused all the side chains to be repaired, but he left the central attachments as he found them, both on account of the difficulty of getting at them in the siding and of pulling, out the draw-bars in order to repair the screw couplings which were attached to them, and also because he considered that the goods coupling links which, had been employed were stronger in effect than the screw couplings themselves, and that in the way in which they were fastened the train might travel safely back to Wolverhampton.

The excursionists remained at Worcester between 12·32 and 6·30, and were then sent back in two trains on their return journey, by direction of the secretary and superintendent, in consequence of the heavy gradients which they would have to encounter, which would have been too much for two engines with upwards of 40 vehicles.

The first train, consisting of 28 carriages and vans, proceeded, at 6·30, with 1 engine and tender to Stourbridge, and having been supplied at that place with a second engine and tender, it reached, Round Oak at 8·10. The second train, composed of 14 carriages; and 2 vans, and drawn by 1 engine and tender, reached Brettel Lane at 8·11, and started from thence for Round Oak, at 8·14, 11 minutes, according, to the journals of the guards, and 12 minutes, according to the record book at the Brettel Lane station, behind the first train.

The night was rather dark, the smoke was blowing here and there across the line, from the manufacturies

which are, so numerous in, that part of the country, and the rails were slightly slippery.

After the first train had been brought to a stand at Round Oak, and before any attempt was made to start it again, a foreman platelayer who was standing on the up-platform, heard a "snap." He looked round, and found that a portion of the train was falling back down the incline towards, Brettel Lane. He went to the engines at the head of the train, and informed the drivers of what had occurred, and after getting a light at the station he followed the loose carriages down the hill, but without being able to overtake them.

The booking clerk at Round Oak observed, as soon as he had collected the tickets (all of which he took from one individual, who had taken tickets for his party), that a part of the train had broken away, and he tried to telegraph to Brettel Lane, Kidderminster, or Stourbridge, to send information of the occurrence; but he was unable to gain attention from the clerks at those stations.

Of the two drivers and two firemen, only one of the latter, the fireman of the second engine, felt anything of the separation that took place in the train. As this man was looking out for the signal to start, he noticed a slight jerk, as if the break at the rear had been eased off, and the carriages had fallen back by their own weight. He experienced this sensation just before the foreman platelayer came to say that the carriages had become detached, and he naturally concluded that the jerk he felt was the same that caused the separation of the train.

It may seem at first sight an extraordinary circumstance that a large portion of a train should become separated from the remainder, and take its departure from a station in the opposite direction to that in which it was intended to travel, almost unnoticed, excepting by one man; but it must be remembered that the night was rather dark, that the whole train was between two and three hundred yards long, and that, even after 17 carriages and a van had disappeared, there still remained a train of vehicles measuring with the engines upwards of 100 yards in length.

The statement of the guard, Cook, to me, was to the effect that he turned his break on, perhaps 20 yards before the train stopped at Round,Oak; that the couplings appeared to snap with the rebound of the buffers when he eased his break off; and that he put on his break again, and skidded all the four wheels, as soon as he felt the carriages coming back upon him. He states also that his break was in very good order; but that though the speed slackened at one point, it gradually increased again as the carriages went down the incline until it attained to 10 or 12 miles an hour; that he first saw the other train when he was passing under the Moor Lane Bridge; and that, having previously implored of the passengers to jump out and save their lives, he dropped off his van just before it struck the engine of the second train.

The accompanying diagram, with which, as well, as well as the others which, are enclosed with this report, the engineer of the company has been so good as to supply me, shows distinctly the exact site of the collision, the curves and gradient over which the two trains were running, and the distance at which they would be seen from each other before the collision took place. As the driver of the second train pointed out to me on the spot, he first saw the lights of the van in front of him when that van was near the Moor Lane Bridge, which is about two thirds of a mile from Round Oak, and when, he was about 300 yards from it. He states that as soon as he found that the van was running back upon him he did all he could to stop his train, and that he had reduced its speed from about 10 to 2 miles an hour before the collision occurred.

The shock appears to have been severely felt in the second train, though' that train had almost come to a stand, and, from the breaks having been all screwed on, presented, as it were, a compact mass for the vehicles of the first train to impinge against. The guard in the hind van of the second train was knocked from one end of his van to the other, and temporarily stunned by it; but the whole of the killed, and the greater part of those who were seriously injured, appear to have been in the first train.

In order to ascertain as nearly as possible what would be the actual effect of one break van on this incline at the rear of 17 carriages, a train was prepared in the course of my inquiry, to resemble as nearly as might be the portion of the first excursion train to which the accident happened; and 16 of the carriages were loaded with 22 cwt. each, to represent the weight of the passengers which they probably contained at that time. This experimental train was started a number of times from the Round Oak station, and was allowed to acquire different rates of speed bef6re the break was applied and the experiments showed, that at a speed of about 10 miles, an hour, acquired in 440 yards, the train was stopped in 883 yards after the order to apply the break was given, and 111 yards short of the point of collision; that at slower speeds the train was stopped, as might of course have been expected, in shorter distances; and that when the break was put on in the manner. described by the guard, soon after the train was found to be running backward, a short distance only was accomplished, and no further speed was acquired.

It is true that the rails were in better order when, these experiments were tried than they are described by some of the witnesses to have been on the night of the 23d August, and that there may have been, variations in the weights of the van, or of the train, or of both, which would have influenced the results; but, allowing ample margin for such contingencies, it is still impossible, if the break, was as the. guard states, in proper order, and if it was applied, as he also asserts,

as soon as he discovered that the train was actually running back upon him, that,so violent a collision should have occurred; and it is even certain that the train would under these circumstances have been brought to a stand at no great distance from the Round, Oak station, and long before it reached the point of collision.

Inasmuch as the experimental train acquired, before any break was applied, a speed of about l0 miles an hour in 440 yards, so the accelerating force acting upon it uniformly, up to that point, may be assumed to have been ·081 feet per second; and neglecting the increased resistance of the atmosphere at increased speeds (which would increase perhaps from a quarter of a pound to about four fifths of a pound per square foot of frontage between the speeds of 10 and 18 miles an hour), it may easily be calculated by the formula, V= 2*fs*, that the same train would acquire a speed of about 18 miles an hour on the same gradient in 1,434 yards, or by the time that it arrived at the point of collision. Taking into account the increased resistance of the atmosphere, the speed, thus acquired in reality would, *cæteris paribus*, not be so great, and 18 miles an hour may be safely assumed as the maximum speed which the carriages would have acquired on the night of the accident if no break had been applied to stop them. A much less speed could hardly have been productive of such awful results.

The retarding influnence of the van upon the train after the application of the break, was, during my experiments, as shown by the distance in which the train was stopped after it had acquired a speed of 10 miles an hour, about ·2589 of a foot per second; and though the retarding influence of the break may have been different on the night in question, in a more slippery state of the rails, and with a somewhat altered arrangement of the respective weights in the train and van, yet it cannot by any conceivable conditions, other than that the break was not acting, have been so far annihilated as to have permitted the speed bf the loose carriages to have increased gradually to 10 or 12 miles an hour in the manner described by the guard Cook.

If an thing had been the matter with the break, or had prevented it from acting, Cook would not, it may be presumed, have hesitated to say so; and if he had been in the van when the carriages ran back, he would certainly, as he was an experienced guard, have turned on his break without much loss of time, and have stopped the train before it reached any great distance from Round Oak. The conclusion, therefore, is hardly, as far as I can see, to be avoided, that Cook was not in his van at all while the carriages were running backward; and that, no break having been applied to prevent it, the carriages, acquiring fresh velocity at every turn of their wheels as they descended towards Brettel Lane, came into collision with the train behind them at a speed somewhat under 18 miles an hour, more or less, according to the strength and direction of the wind, (which is stated to have been blowing across the line on the evening in question,) and according, to other minor conditions.

It was already as clear as reasoning of this description could make it that Cook had not employed his break as he might have done for the purpose of stopping the carriages; but I endeavoured, by an examination of the wheels and break apparatus of the van, to throw further light upon the subject, and, if possible, to discover some positive indication as to whether the break was on or off when the collision occurred.

The wheels had evidently been in recent use for breaking purposes, as there were numerous flat places, and marked discolorations, upon their circumferences; but there was nothing to show whether any of these syptoms had been produced on this particular occasion, or whether they had all been the result of the application of the break blocks, and skidding of the wheels along the rails, on the previous morning journey, or even whether some of them were not of still longer, standing.

The break screw, however, afforded evidence of a more important character. The portion of it on which the nut had been working was distinctly shown, in strong contrast to the remainder, by the oil which still moistened its surface; and the nut itself was at the bottom of that oily portion of the screw. If the nut had been at the top of that portion, then there would have been, proof that the break was on at the time of the collision: if the nut had been in the middle of that, portion, then it might have been a matter of doubt as to how far the break blocks were acting on the wheels; but as it was at the bottom of that portion no doubt remains that the break must have been *off* when the collision occurred. I may add, that the bent condition of the break screw precluded the supposition which might otherwise have been entertained, of the position of the nut having been in any way, altered subsequently to the collision.

When I pointed out to Cook the evidence that thus existed, he endeavoured to convince me that it was not to be depended on; but I observe that in an examination that he afterwards underwent before the coroner who investigated the circumstances of the accident, he made the extraordinary statement that he took the break off again just before the collision occurred. It would be impossible to assign any reasonable motive for such a proceeding; and I can only suppose that he gave this piece of evidence, in order to account for the condition in which the break screw remained.

Two of the passengers who were riding in the van with Cook, and who are now, recovering from the injuries which they received in the collision, assert that he was in the van with them whilst the carriages were running back, and to a certain extent corroborate

his statements; but their evidence is of such a nature, and they so far contradict either themselves Or each other, that it becomes impossible to attach importance to what they say; and it is equally impossible to credit the evidence of a woman who states that she heard Cook, from her house, as the train was passing, telling the passengers who were riding with him in his van, that he had done what he could for them, and that they must jump out to save their lives.

The statement of the driver of the second train, and of other witnesses, to the effect that fire was flying from the wheels of Cook's van before the collision, may at first sight appear to indicate that the wheels were skidding along the rails; but it must be remembered that such an appearance is produced simply by the abrasion of small particles of iron, and by their ignition in the oxygen of the atmosphere, for which their bright surfaces possess a strong attraction; and that this effeet may be produced by the friction of wheels passing at speed round a curve when, they are not skidded by the break blocks, as well as by wheels on which the break has been tightly applied.

Looking to all the circumstances of the case, I am inclined to believe that the break of Cook's van was not employed at all to cheek the speed of the loose carriages between Round Oak and the point of collision; and the most favourable, and most likely supposition, as far as Cook himself is concerned, is, that he got out of his van at the station, in the execution of his duty, as soon as the train stopped at the Round Oak station, without taking the precaution of turning on his break, that the rebound of the buffers after the train stopped snapped the couplings, and that he was unable to reach his van again when he discovered that the carriages were running back, though he may either have followed the train on foot, or ridden down for some distance on the footboard of one of the carriages. At all events, he appeared with his lamp in his hand, to take the necessary precautions, and to render the necessary assistance, soon after the occurrence.

The amount of blame which devolves upon Cook must of course depend upon what his conduct and motives actually were; and this can only be matter of conjecture, though it is certain that he has not correctly represented them. If the supposition referred to in the last paragraph be correct, then his fault has been a want of care and forethought, in neglecting to apply his break and secure the tail of the train before leaving his van; a fault which he would have been the more likely to commit from being capable of such irregular conduct as he was guilty of throughout the day; but which would have been productive of no bad consequences, and would not have come to light, if it had not been for the breaking of the carriage coupling, though it was serious in the extreme, from the enormous risk which it involved.

The immediate cause, however, of the accident, was the fracture of the couplings which united the carriages at the point where the train separated; and this happened apparently from the force with which the buffers rebounded after the carriages had run forward upon the engine in the course stopping at the station. It is not an unusual circumstance for the rebound of the bufers to snap the couplings, and it was the more likely, unless care was employed, that this effect should, be produced in so heavy a train and on so steep a gradient; though it may be observed, that, if Cook had applied his break at the proper time, before the train stopped, the carriages would not have run forward on the engine, the rebound would not have taken place, and the fracture would not, in all probability, have occurred.

The carriages were united at the point of fracture in the usual manner, by means of a screw coupling and two side chains. The screw coupling, of which I enclose a full-sized drawing was broken in two places in the screw itself (marked A), and in the eye of the strap which connected the nut with the stud securing it to the draw-bar (marked B). The latter fracture was evidently the first to occur, because if the former had occurred first there would have been no strain to effect the latter, and because the former appears to have been occasioned by the cross strain to which the screw was subjected, by one strap only holding on to one side of the draw-bar after the other had given way. The screw was of good size (1" internal diameter), and of a good quality of iron; the strap was also of sufficient size ($^7/_8$" diameter) but the iron, was not so good, and it gave way at the weld of the eye, which was so defective that only about a third of the section had been holding. As this was one of two straps. by which the coupling was secured to the draw-bar, two thirds only of the whole strength was available. The coupling was not perhaps of the best form, as a "D" link on each side of the screw may be considered preferable to the arrangement shown in the drawing, where there is a "D" link on one side only, and where the connexion with the draw-bar is by means of two straps, containing four-welded eyes, and a cross stud.

These couplings were supplied with the carriages by a first-rate carriage builder, Mr. Williams of I,ondon, and the company do not appear to have had much trouble with them before; but upon experimenting upon some of them since the accident they discovered that the greater proportion of those tried had welds similarly defective. This was so much the came, indeed, that it seems desirable to discard these sort of couplings from use altogether; though it is only right to add, that even in this defective state they are stated to have required strains of from $16^1/_2$, to $18^1/_2$ tons to fracture them, and to have been broken by weight hung perpendicularly from them, about which there could be no mistake.

The side chains gave way, one of them at the hook, which was of ample size and tolerable quality, and the

other by the screw pulling through a defective nut, by which it was fastened to the carriage framing. The side chains generally, as far as I had an opportunity of observing them, appeared to be roughly manufactured, and fastened to the carriages; but, indeed, I am not disposed to lay stress upon that fact, for they are a description of fastening of doubtful utility. If too tightly coupled, they may produce accident by causing the carriages to be thrown off the line on a curve; and when loosely coupled, they rarely resist the jerk which comes upon them after the fracture of a screw coupling; though it must be added, that they did so on one of the three occaisions on which the central couplings parted in the course of the journey to Worcester on the morning in question.

As regards couplings too, in general, they must not be made too strong, because it is sometimes most desirable that they should give way, in cases where an engine, and perhaps part of a train, runs over the side of a bridge or an embankment, and in which, but for the giving way of the couplings, the remainder of the train might be pulled after them; but it is exceedingly desirable, on the other hand, that such couplings as it may be determined to adopt, as those best fitted for the duties to which they are subjected, should be made of like strength and with due care; and this important point does not appear to have been sufficiently attended to in regard to the couplings in uses on this line; though I may add, and it is only right that I should do so, that I believe them to be at least as good as those generally in use on other railways.

The duty required of the couplings varies, again, very materially, even with passenger trains; the strains upon, them being comparatively small in the case of a light train running upon a level road, and increasing with the weight of the trains and I the steepness of the gradients, up to a point at which a careful use of the breaks is required to prevent fracture. It would be impossible, of course, in practice, to vary the couplings with the different trains, and to provide in each case precisely that which was best suited to the occasion; and it must be expected that couplings will occasionally fail, though this will occur less frequently in proportion as the couplings are of good quality and the servants of the company careful. But in truth, the fracture of a coupling rarely occurs with fair treatment in the ordinary course of passenger traffic, and when it does occur it ought not to be productive of any serious results; the best insurance against accident, in this, as in, many other cases, being found in the selection of intelligent men of known character and steadiness for the execution of responsible duties.

If this precaution had been taken on the occasion in question, if Cook's place had been supplied in the excursion train, both in the morning and the evening, by a trustworthy man, then it is probable, and in fact it may almost be considered as certain, that the couplings, with all their defects, would have been found to be sufficient, and would have been running to this day, because, as I have already observed, they none of them gave way under circumstances in which they could have been severely tried in any other respect than by being subjected to the strains, most fatal of all to them, caused by a careless use of the breaks, or the rebound of the buffers.

And this is the particular point in which direct blame attaches to the company on account of the present accident. Cook had been a goods guard in their service for eight years; and had been employed during several summers to take charge of excursion trains. It cannot for a moment be supposed that a man habitually trustworthy should on this occasion only have so far forgotten himself as to invite the passengers into his van, to smoke and drink with them, to employ them at his break handle, and four times to fracture the couplings in one day by his carelessness; and if the company or their officers were not aware of his character previously, then it can only be said that they ought to have been aware of it, and that they ought to have used an amount of circumspection, that would have prevented them from appointing a careless man, as he proves clearly to have been, to such important duties.

Cook's fellow guard on this occasion was a porter in the service of the company, who had acted in that capacity for three years, and had been. employed when required as an assistant guard over a period of twelve months. He was riding in a break van next behind the engine, and only heard of the carriages having been separated from the train from the driver, of whom he went to inquire as to his reason for not starting the train, in compliance with a signal which he had given him to do so.

As I have already stated, there were four breaks at work in the morning besides the tender break, when the train descended the incline towards Worcester; but even then there were only two men regularly acting as guards to the train, the third break having been taken by an assistant superintendent of the company who accompanied it from Dudley to Worcester, and the fourth by the bank foreman who happened to be travelling in that direction; and on the return journey there were only two guards, as has been seen, one at either end of the train, to attend to the breaks and control the passengers. The one break at the rear was certainly sufficient to have prevented the accident that actually occurred, if it had been in better hands, and had been properly employed; but such a proportion of break power as two vans to 28 carriages cannot be considered otherwise than most insufficient for general purposes; and such a proportion of controlling influence as that which could be exercised by two guards, with their own peculiar duties to attend to, is equally inadequate for keeping 1,000 pleasure seeking excursionists in order.

I have before had occasion to draw their Lordships'

attention, in the case of accidents which have occurred on other railways, and more particularly in the case of those which have happened in the manufacturing districts of Lancashire and Yorkshire, to the fact that these excursion trains, which are run at irregular times, which convey unlitially large numbers of passengers, always more or less unruly, and which for every reason require extra care and attention, are worked without the precautions that are considered necessary with the ordinary passenger trains; and there has evidently been too much of a similar system adopted with regard to this train, in which the carriages were overcrowded, and the break power was insufficient, in which passengers were allowed access to an unprotected break, and attached to which there were no regular passenger guards, but only two men, one of whom was not well selected, acting in that capacity. And here I would observe, that the overcrowding of third, and even second class passengers and excursionists in railway carriages, is an evil which might well be made a matter of legal interference, as it is of much more importance that the number conveyed should be properly proportioned to the size of the vehicles, on railways, than that such a provision should be enforced, as it is to a great extent, in the case of vehicles in public use on common roads.

I am happy to learn that the company have made arrangements since the present accident for employing the continuous breaks of Mr. Fay, as it is of great importance that a system of this description should be employed upon a line of this nature.

As a great deal has been said with reference to this accident, as to the insufficiency of the interval, 11 or 12 minutes, which was allowed between the running of the two portions of the excursion train, it is right that I should observe that in this particular case the collision would, up to a certain extent, have been still more fatal if the interval had been greater, because the runaway carriages would in that case have attained a higher speed; and that it would have been less and less violent in proportion to the decrease of the interval, because, the shorter the distance which the carriages had to run, the less the speed that they would have acquired. I may also remark, that though on this occasion the electric telegraph would have availed nothing after the fracture of the couplings, even if it could have been got to work, still it is exceedingly desirable that more use should be made of it on a line of this description, and particularly that it should be employed in announcing the approach or reporting the progress of trains of this nature from station to station. It will be remembered, as I stated near the commencement of the present report, that the booking clerk at Round Oak endeavoured ineffectually to gain the attention of the clerks at Brettel Lane, Kidderminster, and Stourbridge, after he heard that the train had become divided, and it is therefore clear that the telegraph would not, as it is at present worked, be likely to be of much use in the case of any sudden emergency.

There are two further matters, on which it is my duty to remark, as indicating a want of proper discipline in the administration of the company. The one is, that a distinct intimation, to which I have already referred, and which was contained in the printed bills of the excursion train, signed by the general manager of the company, to the effect that the teachers and children only of the schools would be allowed to avail themselves of the train, was wholly unattended to at the different stations from which passengers were conveyed; and the other is, that I found that the record-book of the trains at the Round Oak Station, in which the arrival and departure, of each ought to have been entered, had fallen into disuse for three weeks before this accident. This book appeared to have been under the charge of a porter at the station, who, having filled the one which he had in use, had neglected to apply for a new one, waiting, as he said, until it should have been time to make a requisition for a fresh supply of stores at the end of the month. Such a book, to be of use, should be regularly attended to, under the eye of the station-master.

A very few words will suffice for summing up, in conclusion, the causes of this accident. A man was selected by the company for the, important duty of head guard to a, heavy train who proved to be anything but trustworthy and careful, and who, in not performing that duty with the attention that it required, caused the fracture of a defective coupling, and permitted the greater part of his train to run backwards down a steep gradient, on which it came into violent collision with a following train.

The consequences have been deplorable in the extreme, and are not likely to be soon forgotten by the company on whose line the catastrophe has occurred. To that company no further warning will be necessary to induce them to use all reasonable means for preventing a similar accident from again occurring; but it is to be hoped that other railway companies will not neglect to profit by the lesson that is thus afforded to them, and particularly companies that are in the daily habit of running passenger trains without any break vans at all behind them. They may, and do, carry on this practice for many years, without any serious results, but the risk and responsibility that they incur are far greater than any saving of expense or trouble that they can effect.

I am, &c.

The Secretary,
Railway Department,
Board of Trade.

H. W. TYLER,
Captain, R.E.