Empty Carriage Train.

No. 175, Second Brake.—One bogie centre casting broken; two buffer rods bent.
No. 2, First Class.—Two bogie centre castings broken and one buffer rod bent.
No. 163, Third Class.—One bogie centre casting and two lights broken; one buffer rod bent.
No. 178, Third Class.—One buffer knee and one buffer rod bent.
No. 178, Third Brake.—One buffer knee bent; one door-light broken.
No. 201, Second Brake.—Four buffer castings; one stepboard, two quarter lights, two end panels and buffer spring broken; three buffer rods bent.
No. 54, First Class.—Four buffer castings and side chain broken; four buffer rods, ascending step, and coupling link bent.
No. 761, Third Class.—Three buffer castings and two end panels broken; two buffer rods bent.
No. 890, Third Class.—Four buffer castings, broken and vacuum pipe damaged; four buffer rods bent, also body end damaged.
No. 925, Third Brake.—Boiler of bogie displaced, four buffer castings, one bogie centre casting, and check chains broken; body end, vacuum and steam pipes, and cell boxes damaged; vehicle off road.

Wednes Train.

No. 1583, Composite.—One axle box broken.
No. 953, Composite.—One buffer casting broken.

Printed copies of the above Report were sent to the Company on the 29th October.

LONDON AND SOUTH-WESTERN RAILWAY.

Board of Trade (Railway Department),
8, Richmond Terrace, Whitehall, S.W.,
31st July, 1906.

Sir,

I HAVE the honour to report, for the information of the Board of Trade, in accordance with the Order of the 2nd July, the result of my inquiry into the circumstances attending the disastrous accident to a passenger train, which occurred about 1.57 a.m. on the 1st July, at Salisbury Station on the London and South-Western Railway.

In this case the weekly best express train, from Plymouth to London, was travelling through the station on the up through line, when the engine and coaches left the rails, and came into violent contact with a milk train, which was moving in the opposite direction on the down through line. The engine and train wreckage also struck a light engine, which was standing in the down bay platform road.

The express was hauled by a four-wheels-coupled engine with a leading bogie, of the Company's ordinary express type, having attached an eight-wheeled (bogie) tender. The coaching stock comprised five vehicles, marshalled as follows:—

No. 17.—One eight-wheeled bogie luggage brake van.
No. 47.—One eight-wheeled bogie first class corridor coach.
No. 38.—One eight-wheeled bogie first class corridor coach.
No. 84.—One eight wheeled bogie first class corridor coach.
No. 492.—One eight-wheeled bogie combined kitchen and brake van.

The train was equipped with the vacuum continuous brake, worked from the engine, with blocks on the four engine driving wheels, and on all wheels of the tender and coaching stock. There was the usual hand control on the wheel blocks of the tender, and similar control over the wheel blocks of the two brake vans. Control over the continuous power brake was also provided in the brake vans by means of the usual guard's valve attachment. The brake arrangements generally appear to have been in good working order.

The down milk train was drawn by a four-wheels-coupled tender engine, and comprised 21 brake and milk vans.

The express carried 43 first class passengers, who had landed at Stonehouse Pool, Plymouth, from the American Line S.S. "New York." In addition there were on the train, a driver and fireman on the engine, a guard who rode in the rear brake van, a ticket collector, and two waiters in the employ of Messrs. Spiers and Pond. Of the passengers 24 were killed, or died subsequently from injuries, and 7 were seriously maimed or hurt. The engine driver and fireman were also killed, and the ticket collector and two waiters injured.
To this deplorably long roll of killed have to be added the guard of the milk train, and the fireman of the light engine, whilst the driver of the light engine was badly scalded.

The three leading vehicles of the express were overturned in various directions, the frames stripped of woodwork and completely destroyed. The fourth vehicle fared little better, as one end and the whole of one side of the woodwork was torn out. Comparatively little damage was done to the last vehicle, which came to rest in an upright position with the last pair of wheels on the proper rails.

The engine and tender were both overturned on their right sides, but less damage was done to them than would be expected, and the engine was shortly afterwards hauled from Salisbury into the Nine Elms Works on its own wheels.

Five vans of the milk train (Nos. 13 to 17 from the front) were completely destroyed, and five others damaged.

The damage to the permanent way of the up through line was surprisingly small, but a length of about 40 yards of the down line was torn out and destroyed.

In the Appendix I. will be found detailed lists of damage to the express engine and tender, to the rolling stock and the permanent way.

Description.

Salisbury Station, the scene of this railway disaster, is situated about 83½ miles from Waterloo Station, the London terminus of the Company's system, 277½ miles from Templecombe Junction, 88 miles from Queen Street Station, Exeter, and 146½ miles from Devonport. The running lines and platforms in the station have a general east and west direction, and the arrangements in the station yard are shown in detail on Plan A. It will be seen from this plan that the approach to the station from east and west is by two lines of way only, for up and down traffic respectively. These lines each divide into a pair of lines, so that through the centre of the yard there are four through roads serving three platforms. The pair of loop lines on the north side of the central, or island, platform, are used for up local and up through traffic. The pair on the south are similarly used for down traffic. The working of the yard is controlled from two signal-boxes known as Salisbury East and West.

The boat express train approached Salisbury from the west on the up road, and travelled through the station on the up through line. Its course is indicated by arrows on Plan A. The approximate position of the engine and tender after the accident, as well as of the remains of the coaching stock is shown on the plan. So is the position of part of the milk train, and of the light engine.

There is a left-hand curve at each end of the island platform on the up through line. The curve at the west end of the platform has a radius of 18 chains, that on the east, where the accident took place, was originally laid out with a radius of ten chains.

Immediately east of Fisherton Street bridge, the up through line unites with the up local line by means of a crossing junction. The reverse curves of the junction have radii of about seven and a-half chains.

Measured from the West signal-box, the approximate distances to the undermentioned places (lettered on the plan) are as follows:

<table>
<thead>
<tr>
<th>Place Description</th>
<th>Yards</th>
<th>East</th>
<th>Straight or curved</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Up line facing points</td>
<td>162</td>
<td>East</td>
<td>curved.</td>
</tr>
<tr>
<td>(B) Commencement of left-hand curve (radius 18 chains)</td>
<td>184</td>
<td>curved.</td>
<td></td>
</tr>
<tr>
<td>(C) Termination of curve, and western end of island platform</td>
<td>226</td>
<td>curved.</td>
<td></td>
</tr>
<tr>
<td>(D) East end of island platform, and commencement of curve (radius 10 chains)</td>
<td>485</td>
<td>curved.</td>
<td></td>
</tr>
<tr>
<td>(E) Termination of curve</td>
<td>577</td>
<td></td>
<td>straight.</td>
</tr>
<tr>
<td>(F) Position of overturned express engine</td>
<td>582</td>
<td></td>
<td>straight.</td>
</tr>
<tr>
<td>(G) Centre of bridge over Fisherton Street</td>
<td>592</td>
<td></td>
<td>straight.</td>
</tr>
<tr>
<td>(H) Facing points leading to engine siding</td>
<td>600</td>
<td></td>
<td>Reverse curves 7½ chains. radius.</td>
</tr>
<tr>
<td>(J) Trailing points of junction of up through and up local lines</td>
<td>658</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(K) Salisbury East signal box</td>
<td>755</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The next signal-box east of Salisbury East is known as Tunnel Junction, and is distant about 1,520 yards.
As regards gradients through the station yard, from Salisbury West box to the spot (A) the line falls at an inclination of 1 in 520; between (A) and (D) it rises at an inclination of 1 in 547, between (D) and (F) there is a sharper rise of 1 in 158 to provide headway at the bridge over Fisherton Street.

Between Templecombe and Salisbury, a longitudinal section of the railway shows that between Gillingham and Semley Stations (a distance of 4 1/4 miles) there is a heavy bank with continuous rising gradients of 1 in 100 and 1 in 130; between Semley and Dinton (9 1/4 miles) a more gradual but continuous descent, whilst in the last 1 1/4 miles before Salisbury West box is reached, the gradients fall at inclinations of 1 in 115 to 1 in 183.

A drawing of the engine and tender (No. 421) of the express is shown on sheet C. This gives the principal dimensions, and the weights on each axle or bogie. These weights, with the engine in working order, are as follows:

<table>
<thead>
<tr>
<th></th>
<th>tons</th>
<th>cwt</th>
<th>tons</th>
<th>cwt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine — leading bogie</td>
<td>16</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leading driving axle</td>
<td>19</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trailing</td>
<td>18</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tender — leading bogie</td>
<td>23</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trailing</td>
<td>21</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total engine and tender</td>
<td>53</td>
<td>19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The length over buffers of engine and tender is 57 feet 5 inches; the driving wheelbase is 10 feet, and the diameter of driving wheels is 6 feet 7 inches. The engine has inside cylinders, 19 inch diameter by 26 inch stroke; working pressure 175 lbs. per square inch.

The dimensions and weights of the coaching vehicles were as follows:

<table>
<thead>
<tr>
<th></th>
<th>Length over frames.</th>
<th>Weight unloaded.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feet</td>
<td>tons</td>
</tr>
<tr>
<td>No. 17.—Brake van</td>
<td>44</td>
<td>13 1/4</td>
</tr>
<tr>
<td>No. 47.—First class saloon</td>
<td>47 3/4</td>
<td>23 3/4</td>
</tr>
<tr>
<td>No. 84.—First class saloon</td>
<td>47 3/4</td>
<td>23 3/4</td>
</tr>
<tr>
<td>No. 492.—Kitchen car and van</td>
<td>48</td>
<td>23 1/4</td>
</tr>
</tbody>
</table>

Total 5 vehicles.

Allowing for baggage and passengers, it may be assumed that the total weight behind the tender was about 120 tons. Over buffers, the length of the coaching stock was 252 1/4 feet, and inclusive of engine and tender the length of the train was 309 feet 7 inches over all.

The carriages were of the corridor type with gangways between the last four vehicles. The wheel base of the carriage stock was eight feet. Compressed oil gas (Pintsch's system) was used for lighting the carriages.

Evidence taken on July 4th, 1906.

William Harrison, passenger guard, states:—

I have about 29 years' service with the Company. 22 as a passenger guard. I came on duty on the 30th June at 8 p.m., and would ordinarily have been booked off at 5 a.m. the following morning. On the 29th June I was on duty from 7.30 a.m. until 7.15 p.m. I was in charge of the boat express train from Plymouth on the night of the 30th June. The train leaves Plymouth in accordance with the arrival of the American Line steamer. On the night of the 30th ultimo it left Plymouth at 11.1 p.m. The train was made up as follows:

1. 8-wheeled bogie van.
2. 8-wheeled bogie first class coaches.
3. 8-wheeled bogie kitchen van.

The first vehicle was a van without accommodation for passengers; no one was riding in this. I was riding in the last vehicle. At Stonehouse Pool, where the passengers get on the train, shunting engines were in front and rear of the train; these engines take the train to the west end of Devonport Station. The shunting engines are then uncoupled, and the train engine is attached. The train does not stop at the platform at Devonport Station, so that the passengers would be in the train at this point. I have been guard with this boat express train, which runs weekly, about 15 times altogether. I did not actually test the vacuum brake before leaving, but I saw there was a vacuum of between 18 and 19 inches. I saw the vacuum brake pressure reduced at St. Davids, Exeter, and at Templecombe, and slightly at other points, and I am satisfied that the continuous brake was in working
order. All the wheels of the coaching stock were fitted with brake blocks actuated by the continuous brake. Driver Lathby was on the engine between Devonport and Templecombe, but was stopped by signals at St. Davids, Exeter. Going down the Honiton Bank, and at Okehampton, there are steep inclines; the speed is usually reduced at these points, and the engine driver reduced speed on this occasion. The engine just came to a stand at St. Davids, Exeter, and started again immediately when the signal fell. We were due to arrive at Templecombe Station at 1.23 a.m. and we arrived at 11.22 a.m. The booked stop is three minutes. We started after booked time, viz., 1.26 a.m. I took a watch, and the clock of the coach was the usual practice was to apply the brakes just before we arrived at the west end of the station; the application that I made would be generally kept applied until the East box was reached. On the night in question the brakes were not applied by the driver at the West box nor at any point in the station. I suppose the speed at the West end of the station would be about 30 miles an hour. The usual practice was to apply the brakes just before reaching the west end of the platform; at this moment the speed would be about 30 miles an hour. After the notice came out in February last, the practice has been to reduce the speed considerably more. The brakes would be generally applied to the West box, the speed at the west end of the platform would be generally about 30 miles an hour, and about the same speed through the station. The speed at the east end of the station was about three minutes, but not more, on the journey between Salisbury and Waterloo. My experience the drivers of this train are very particular about not arriving at Waterloo before booked time. I have known them to make up two minutes, but not more, on the journey between Salisbury and Waterloo. My experience is that when a train is booked to pass the West Box at a speed of 30 miles an hour, the passengers in this train are in the habit of giving gratuities to the engine driver and firemen on arrival at Waterloo. There is no other opportunity of seeing them. I myself have not received anything on the last four occasions. It was my impression that the driver had lost a little time before reaching Salisbury, but I do not think his time was made up by any reduction of speed. I did not apply the brakes at a place where a reduction of speed is laid down. I did not book the time of the train between Devonport and Templecombe, but I have a recollection as I passed Salisbury we acted on the wheels when I made it. I cannot say whether there was any jerk in the train due to this application. I cannot be certain as to the amount of vacuum destroyed when I applied the brake, but the needle went back a considerable distance. I did not hear any whistling by the engine driver between Templecombe and Salisbury. Some drivers whistle at the distant signal at the west end: others on passing through Salisbury station. The driver in this case may have whistled but I did not hear it.

John Richard Spier, traffic inspector at Salisbury Station, states: I have 34 years' service with the Company. I have been inspector seven or eight years, and have been stationed at Salisbury all the time. My hours of duty on the night of
the 30th June were from 8 p.m. until 6 a.m. My duties consist generally of looking after the traffic. About 1.30 a.m. on the morning of the 1st instant, I received a message from the telegraph office that the boat train had left Templecombe at 1.27 a.m., so I at once took steps to clear the line. It was a considerable distance. I was standing about the middle of No. 1 down platform when the train passed. I saw the front part of the train pass on the up through line, between the refreshment room and the waiting room on the island platform; it passed at 1.57 a.m. exactly. I took my watch out and as the train passed realised that the time was as stated, viz., 1.27 a.m., and my watch was wound up as near as possible with the station time. I have seen the boat express pass through the station on many occasions. The usual speed of this train through the station is 20 to 30 miles an hour. This is in accordance with a special notice which came out in February last. The boat express on the night in question passed through the station without越过 hoop just as the milk train on the down through road was beginning to pass me. Therefore only saw the boat express by looking over the top of the milk train. I cannot say at what speed it was travelling, but it appeared to me to be somewhat higher than indicated in the instructions issued about the boat express. I should have reported the driver next morning for exceeding the speed restriction. I have not heretofore had occasion to report the boat express for passing through the station at too high a speed. I have been informed that a report has been made of the boat express train passing through the station at too high a speed, but I have no accurate knowledge of how the boat express was running. I have not been able to ascertain what the speed of the boat express was. I have not seen a boat train pass through the station so fast as this one did. I heard the engine whistle from the west end of the yard, and am certain that it was the engine of the boat train. The sound appeared to be west of the west end signal box.

Phillip Rosk, yard foreman, Salisbury, states: I have 16 years' service with the Company, and have been yard foreman at Salisbury station for six years over five years. My ordinary hours of duty on the 30th June would be from 10 p.m. to 6 a.m. I was on the down through platform about 2 a.m., when the boat express passed through the station. There was a milk train running on the down through line between me and the express in question, and all trains in my view, I could see the engine and the first coach pass through the interval between the refreshment room and the waiting room on the island platform. At the moment I thought the train was running sharper than usual, but I did not think it was running so fast that there would be an accident. I did not think there would be any danger until I thought that it was running twice as fast as usual. If a train passed through the station at a speed that I thought excessive I should report the fact. I should think that over 30 or 40 miles an hour would be excessive. I cannot say accurately how the boat express travelled, because a good deal of the noise was due to wind and the noise of the vane, and my view was obstructed. When I say I should report excessive running, I should call the attention of the inspector. I heard a whistle before the boat train came through the station from the west end of the yard, but I am unable to say whether it was the whistle of the express or some other engine.

Frederick William Nicklin, parcel porter, Salisbury, states: I have six years' service with the Company. My ordinary hours of duty would be from 9.30 p.m. to 8 a.m. Just before 2 a.m. I was in the parcels office on the down platform (main) when I heard the boat train whistling at the west end of the yard. I have no doubt in my mind at all that the whistling I heard was that of the boat express. I came out of the office and stood on the platform to watch the express go by. Just as it was passing, the milk train on the down through road began to block my view. I could only see the engine of the boat express. I have not seen a boiler, and therefore have no accurate knowledge of how the boat express was running. I have seen the boat express pass through the station on other occasions. I cannot say whether she was running faster or slower than usual.

William Abbott, carriage examiner, Salisbury, states: I have 26 years' service with the Company. I was on duty at Salisbury Station on the night of the 30th June. I was at the London end of the island platform, when the boat express passed through the station. I watched it pass. I have seen the express pass through on about six other occasions. On this night the boat train ran through a curve especially faster than usual. I have often seen a boat train pass through the station so fast as this one did. I heard the engine whistle from the west end of the yard, and am certain that it was the engine of the boat train. The sound appeared to be west of the west end signal box.

John Jones, signalman, states: I have nearly 25 years' service with the Company, and have served about 19 years as a signalman. I am a signalman at Dinton Station. I came on duty on the night of the 30th June at 6 p.m., and my tour of duty lasts until the last up train passes. I have often seen the boat express pass my box before this date. The signal box west of me is Tisbury Station, the distance being about four miles. I received the “Train entering section” signal for the boat train from Tisbury at 1.46 a.m., it passed my box at 1.50 a.m. I sent the warning signal to Wilton at 1.46 a.m. The train passed my box about the usual speed; for this train, I have often seen the boat express pass my box before this date. The signal box west of me is Tisbury Station, the distance being about four miles. I received the “Train entering section” signal for the boat train from Tisbury at 1.46 a.m., it passed my box at 1.50 a.m. I sent the warning signal to Wilton at 1.46 a.m. The train passed my box about the usual speed; for this train, I have often seen the boat express pass my box before this date. The sound appeared to be west of the west end signal box.

John Short, signalman, states: I have 32 years' service with the Company, and I have been 25 years as a signalman at Wilton Station. My ordinary hours of duty on the night of the 30th June were from 8 p.m. until 6 a.m. I worked the same hours the previous day. I have frequently seen the boat train pass my box. I received the “Train entering section” signal from Dinton at 1.50 a.m., it passed my box at 1.55 a.m. We book half minutes for this train. I have often seen the boat train pass my box, and it was running at its usual speed. I did not hear any whistle sound.

Herbert Henry Mundy, signalman, states: I have 18 years' service with the Company, and about 9 years as signalman. I have been at best Salisbury all this time. My hours of duty on the 30th June were from 10 p.m. to 6 a.m., and I had similar hours the previous day. I have often seen this boat express pass through during the last two years. I received the “Train entering section” signal for this train from Wilton at 1.54 a.m., it passed my box at 1.56 a.m. I book half minutes as near as I can exactly judge from the clock. The boat train, as well as ordinary express trains, generally slacken speed when they pass my up home signal, which is about 200 yards west of the box. The speed of the train at my box I should say would be usually about 35 miles an
The boat train on this night did not have the brakes applied as it passed my box, and I suppose the speed would be about 60 miles an hour. I heard the train whistle when it was passing the distant signal; it continued whistling for several hundred yards. I have no doubt that the train was travelling at a very much higher speed than it usually does. I thought at the time the speed was a dangerous one for the curves at the west end of the station. I sent the "Train entering section" signal to East box, and cleared back to Wilton at 1.56 a.m. Steam was shut off when the train passed my box. The clock in my box is immediately in front of me as I work the instruments and levers. I was careful in the case of this train to get into direct line with the clock, as we book the train to half minutes. Therefore I think the figures I have given are likely to be fairly accurate.

Edward Haines, signalman, states: I have 22 years' service with the Company. I have been signalman at Salisbury Station 14 years. I have been signalman at Salisbury Station East about 87 years. I have signal for the boat express from Salisbury West at something over 1.55 a.m., and I booked the time as 1.57 a.m.

Harry Morce, engine driver, states: I have 31 years' service with the Company, and have been driver about 24 years. I have driven the boat express nine times during about the last two years. The duty does not fall to any special men, but to any express engine driver who happens to be next for duty at Templecombe. I have not found any difficulty in keeping to scheduled time with five or six bogies. The only restriction in the speed that I am aware of between Templecombe and London, is through Salisbury Station. There is a notice from the Locomotive Office limiting speed to 30 miles an hour through this station. We usually apply the brakes between the distant and home signals at the West box, and the speed of the train is reduced to about 30 miles entering the west end of the platform. There is also a booked time limit of one minute between the West and East boxes at Salisbury. I should say that the average speed of the boat express through the curves at the east end of the station would be usually about 25 miles an hour. I think that a driver even with fireman who is not up to the station does Salisbury on a through train would recognise the necessity for slackening over the curves at the east end of the station. It comes to all drivers in turn to drive this boat train for the first time, and I personally fully recognised the necessity for reducing speed when it came to my turn. I think that driver and fireman are the only men aware of the curves at the east end are not suitable for express speeds by the fact that there is a speed limitation, and that there is also a time limit between the two boxes. I do not think it would make any difference to a driver if his first trip on the boat express was made by night or day. I do not remember ever having been spoken to by a passenger on one of the boat trains, and I have never received any gratuities from them.

Harry Trimmer, engine driver, states: I have 28 years' service with the Company, 14 years as driver. I have driven the boat express from Plymouth on several occasions, the last occasion being this 9th June. Salisbury Station is the only place where there is a speed restriction on the road between Templecombe and London. It is 30 miles an hour, and the restriction is a Locomotive Department instruction. There is also a fresh time table for the train which allows one minute between the West and East boxes at Salisbury. I think that the curves at the east end of the station would be recognised by any express driver as being places where the speed would have to be reduced. I have never been spoken to by any of the passengers on this boat express train, nor have I received anything in the way of gratuities.

Walter Mullet, shunter, states: I have seven years' service with the Company, and am stationed at Templecombe. I saw driver Robins on the night of the 20th June at Templecombe. I went over at 12.50 a.m. to get Robins' engine out of the down onto the up siding. He was then rolling round his engine. The boat train left Milborne Port when we were talking. I said to him "The boat train is running well to time"; he said "Yes, I haven't got into Waterloo before time, else I shall have to go up to see the governor." I gathered from this that he had no intention of exceeding his booked speeds. He was perfectly sober and quite clear-headed when the fireman at the same time and spoke to him.

Richard Furze, inspector, states: I am station inspector at Templecombe. I saw both driver Robins and fireman Gadd on the evening of the 20th June and spoke to them. The engine arrived at 12.50 a.m. The driver put it into the down sidding. The driver asked me whether I had heard anything of the boat train. I said "No," and told him he was to stand in the down siding until he was advised to move. I also told him I would advise him what time the boat train left Plymouth. I saw him again at 1.40 p.m., and told him then he was to have the boat train. The driver and fireman were both perfectly sober, and fit for their work. I told him the boat train was due at 1.23 a.m. He thanked me; that was all the conversation I had.

Mr. Frederick Charles French, outdoor assistant to the chief mechanical engineer, states: Driver W. J. Robins entered the service in 1884 at the age of 18. He was made fireman in June, 1890, and driver in June, 1898. He served his time as fireman between Exmouth Junction and Salisbury. He was transferred to London as driver, and has driven between London and Exeter during the last eight years. I am perfectly satisfied that he knew the road quite well. This was the first occasion on which he had to drive the boat train. There are no special men detailed for this duty. Any express driver whose turn it may be works the train. I think Robins' record is a fair one as a driver. He has been rewarded once and cautioned several times. He was a foot-todaler, and perfectly fitted in every way for the duty of running the express. The fireman, Arthur Gadd, entered the service in January, 1894, age 16 years 11 months. He was appointed fireman in February, 1898. His character was excellent. I have examined the engine thoroughly, and I can find nothing at all about it to account for the derailment. All the breakages that I have examined are fresh and clearly the results of the derailment. The difference now between the outside of the flanges on the leading wheels of the front bogie at top and bottom is 3 of an inch. The difference between the outside and the leading bogie is 3 1/2 of an inch. All the axles on the engine and tender are in perfect order, and so are the wheels, tyres and flanges. I could detect no marks on the flanges of the right-hand wheels.
to show where they had mounted the rails. When I first saw the engine I saw the motion was within an inch of full forward gear, the regulator handle was closed, and the driver's handle of the vacuum ejector was in the running position. I had two sleepers on the right-hand side of the track and the tender and train made at Templecombe, nor the accident show that the engine came in contact with any malis on the engine flanges or wheels to become jammed. The actual driving loads are equally divided upon the springs within a few pounds. I have no theory to offer as to the reason of the derailment of the engine. There are no marks on the engine flanges or wheels to show that the engine came in contact with any obstacle on the road to cause the derailment, as the super-elevation was 3½ inches. I found the super-elevation to be 3½ inches in the centre of the curve. It was a new road laid four years ago; it had a good running surface. In my opinion it was a first-class road and in first-class condition. I have never found anything go wrong with this curve, owing to the traffic over it.

Evidence taken on the 9th July.

William Harrison, passenger guard, recalled, states: I did not see the brake comming, between 4 and 7, tender and the train, and cart, and went to Templecombe, nor did I try my brake valve on leaving Templecombe, but I saw the brake pressure in the gauge rise 18 or 20 inches. The brake was not used at all by the driver after leaving Templecombe, but I am satisfied that it was in good working order. The reason I did not apply the vacuum brake at the west end of Salisbury Station, with the object of reducing the speed of the train, was that I was afraid that with steam applied, and at high speed, there would be a danger of a coupling breaking, or other damage being done to the train, and I thought that I could attract the driver's attention in sufficient time for him to apply the brakes.

William Leiley, engine driver, states: I have 31 years' service with the Company, and have been driver 18 years. I came on duty on the 30th June at 4 p.m., and came off duty at 4:30 a.m. on the 1st July. I had no booked intervals off duty during this time, was driving the best express from Devonport to Templecombe on this night. The number of my engine was 288, four-wheels-coupled express engine, with tender: six feet seven inches driving wheels. I used the continuous vacuum brake on the journey at the following points, viz.:-over the viaduct at Meldon Junction, at Okehampton, Coleford Junction, and other places. The brake was in splendid order, and had no stopping effect as I am accustomed to on the whole of the train. I have driven this train on several other occasions; we ran on this occasion at the usual speed. There was a certain amount of oscillation on the journey but nothing more than what is usual. I do not think that the speed we touched broke anything more than about 65 miles an hour at any place. I know of no reason why the travelling should have been rougher on this occasion than on others. I saw driver Robins at Templecombe, but did not say anything to him. He had just finished oiling his engine. I spoke a few words to his mate. I have not worked the best train through Salisbury.
Station: I know the approaches to Salisbury
Station at either end, and am aware that the
curves at the east end are not fit for high speed.
I think that a driver's own discretion should tell
him that a reduction of speed is necessary at the
east end curves. If a driver habitually loses
time, he is punished in some way; but he would
not be so punished if he could explain the
reason for being late, nor would it be an
exceptional thing for him to be late. The heaviest load we
have on this train without a pilot is five boxes.
The schedule for the train gives us time to run at
places, where there is any danger, at a proper
reduction of speed. We are not allowed to arrive
at Templecombe or Waterloo with this train
before booked time. Of course if a minute or
two is lost here or there, we try to make it up on
other stretches of the line where possible, if it
can be done with safety.

Mr. Frederick Charles French, outdoor
assistant to the chief mechanical engineer,
recalled, states: Drivers are punished when it
is proved that the loss of time is habitual on
their part. They are punished in this way, viz.:—they are taken off their particular work,
and given less important work to do. If a driver is not habitually late, his explanation is
credited for, and if reasonable the case is settled.
I consider that a driver's discretion tells
weather, heavy load, permanent way shocks, signal checks, or bad rails. If the boat train had arrived five minutes before time at Waterloo,
the driver would have been taken off his
engine, and not have been allowed to ran it
again. In the case where a driver is an habitual
loser of time, and he is removed from express
duties, the punishment carries with it a reduction
of wages per day; but it would be possible for
this man, by being employed on special trip
work, and by longer hours of duty, to make up
his earnings to the same amount which he had
been getting in express grade. By the use of the
word habitual, I mean a man who arrives once or
twice behind time is warned that he must keep
time in the same way as other men do. After
a man has had two cautions he is punished, pro-
vided he is not able to put forward a legitimate excuse for being late, by being taken off the
work he is employed on. The reports of men
having been removed from express duties are
considered as a report from the Inspector's
branch. It is therefore only when a report
comes from that Department that any action is
taken by the Locomotive Department. There is
no objection to a driver making up time on a
journey in moderation, provided that he does so
with a due regard to the requirements of safety.
I hand in a copy of order No. 2845, dated
20th April, 1901, regarding the limit of speed
through Salisbury Station for non-stopping trains.
Driver Robins' signature is in the notice book
as having seen this order. He would have
signed this notice either at or within a few days
of the time of its issue. I was on the foot-plate of
the engine with the first train of this service
that was worked on April 30th, 1901. There was
no intention of running the boat train at a higher
speed than ordinary expresses. The only differ-
ence between this and the ordinary expresses
was that it was not booked to stop at Salisbury,
but it stopped at Templecombe to change engines.
There was also this difference, that the engine
could be worked as a pilot engine. I think the
service was operated at Exeter and Salisbury, but in the case of the
boat express only once at Templecombe. This is
done to save stopping for water. On the first trip
I remember that we slackened speed running
through Salisbury Station as much as I thought
necessary, and found that there was no more
disturbance on the foot-plate than one would
expect when running round such a curve. The
Locomotive Department's instruction above
quoted came out before the second train ran, the
object of the instruction being to ensure that the
speed was sufficiently low through Salisbury, I
do not recall any driver being punished for
reducing speed in time with the boat train,
though two or three have been cautioned for
exceeding scheduled time, but a number of other
express drivers have been reduced in my know-
ledge who were habitual time losers. The red-
uction in the case of drivers is not always per-
manent; it depends upon how they conducted
themselves afterwards whether they get punished
again to express grade.

Mr. Henry Holmes, superintendent of the
line, states: The special weekly boat service from
Plymouth (when required) started on the 9th
April, 1901, with the object of running such trains
with the booking of this train, the reason being
that when we accelerated the express trains
between Plymouth and London, a trial trip was
arranged for that acceleration. This was prior to
the commencement of running the boat express,
possibly one year before. A trial trip was then
arranged, and the representatives of the various
bookings present. In the case of the
boat express a trial trip was not considered
necessary because the speed of the new train was
based on the times of the expresses. Practically
the sectional timings were allowed as between
Devonport and Exeter, allowances being made for
stops at stations, slackening, and so on, and
believing there there were then a minute or
two lost here or there, we try to make it up on
other stretches of the line where possible, if it
can be done with safety.

The speed between Salisbury and London is the same
as the ordinary expresses within a few minutes,
the difference being accounted for by the non-
stop at Salisbury Station. I hand in the original
notice on this matter on the 23rd April, 1901.
It shows a total time of 4 hours 20 minutes
between Devonport and Waterlooe, with a three
minutes stop at Templecombe for the purpose of
changing engines. Ordinary expresses change engines
twice, at Exeter and Salisbury. The time
between Salisbury and London is the same
as the ordinary expresses within a few minutes,
the time allowance between Exeter and Salisbury
being in the interests of safety I con-
rmed. In the first table, issued on the 21st April, 1901,
showing sectional timings, the time
between Devonport and Waterlooe, with a three
minutes stop at Templecombe for the purpose of
changing engines. There was an additional
notice issued on the 21st April, showing more of
the sectional timings, but allowing the same total
time between Devonport and Waterlooe. I hand
in a third notice, dated 10th February, 1906,
showing sectional time bookings for this boat
train between Devonport and Hampton Court
Junction; the arrival at the West and East boxes
at Salisbury is here shown, and one minute
interval is allowed between these points.
This last table was issued in consequence of a
complaint I received in reference to the running of a
private special train, which was said to have run
by Salisbury at a speed exceeding 20 miles an
hour. This was reported by the Engineer's
Department, and in the interests of safety I con-
sidered it advisable to put in a timing between
the West and East boxes at Salisbury, with a minute
margin for considerable slackening of the speed of the train through
the station. I hand in a schedule showing the actual
booked times of the boat express on the night of the
30th June, between Devonport Station and
Salisbury East, the times being taken from the
the boat train at 1.56 a.m. at Salisbury West and
the signalman hailed recorded the passing times of
the departure signal as received from Wilton at
by telephone, and asked him what time he had
1.54;

as regards the reporting of drivers arriving behind
time, I get an arrival sheet every morning, showing
how many minutes late trains arrived on the
day previous, and then if I observe a particular
train is frequently a minute or two late, enquiries
are immediately made, and the guards' journals
are searched to find the cause, and if we find the
delay is recognized and no action taken. It is
only when there is no explanation of the train
arriving late, and when it frequently occurs, that
it is reported to the Locomotive Department. Then
having found out that that train habitually
loses time, it is watched, until an improvement is
brought about. I have never received a report in
the case of a boat train having run under the
specified time through Salisbury Station, but we
have noticed, from checking the journals of the
guards' trains, that the speed has occasionally
been reduced on other short sections, and have reported
the fact to the Running Department. Complaints
have been received occasionally from passengers
as to roughness of travelling, but none from
passengers travelling by the boat train.

Mr. George F. West, assistant superintendent
of the line, states: I was present at the scene of
the accident at 7.30 a.m. on the morning of the
1st July. As regards the difference of time in
the statements of the signalman at Salisbury
West and Wilton, I went into the case, and found
the statements of the signalman at Salisbury
1st July. As regards the difference of time in
the accident at

Mr. S. Warner, carriage superintendent, states:
I hand in a diagram showing the coaching
vehicles on the boat train. This gives also the
length, and approximate time taken; the
actual time according to the signal-box booking was
1.50 a.m., four minutes late. He was due to pass
Wilton at 1.51½ and the signalman booked the
train as passing at 1.55 a.m. He was due at
Salisbury West box at 1.55 a.m., but was booked
as passing at 1.56 a.m. Judging from the booked
time, it appears he was running through Salisbury
Station at between 60 and 65 miles an hour. There has been no no

tention on the part of the Company to accelerate
this train, since it first ran, and the same time is
now allowed from start to finish, as was allowed
two years ago. There has been no acceleration of
ordinary express trains in the last two years.

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the accident at

Mr. A. H. Wadlin, district traffic superinten-
dent, states: I arrived at the scene of the acci-
dent about 3.45 a.m., and I hand in a tracing
prepared by Mr. A. W. Long, which accurately
shows the position of the various vehicles at
the time. The engine and tender of the boat
train were both lying on their right sides. The
tender was at right angles to the engine. The
leading luggage van No. 17 was lying on its
side partly on the up local line, and partly down
the embankment at the corner of the bridge,
partly resting on the corner of the horse dock.
The first corridor coach was behind No. 17, the
body was smashed and the frame was lying on
the up local line, leaning against the northern
parapet of the road bridge. The second corridor
couch was lying on its right side across all four
trails; the third coach spread across the tracks,
and two sides remained: it was jammed against the
wheels of the tender. The third corridor coach
was lying on its right hand side against the van
of the milk train. The right hand side of this
couch was knocked clean away by coming into
collision with the milk van, but the left hand
side of the coach was very little damaged, and
the sides were still standing on its wheels, the last pair of wheels
standing on the proper rails. The collapsible
gangway was smashed and some lights broken,
otherwise it was not much damaged. The milk
van described had been forced off the proper
down local line, resting on the horse dock
platform, partly under No. 84 1st-class
coaching coach.

Mr. J. W. Jacobson, chief resident engi-
neer, states: The top through line through Salisbury
Station was relayed in 1902: the rails are 87 lbs.
per yard, lie on plate, and are each pair of rails supported by 12 sleepers; the
chair weigh 47 lbs. each. The chairs are
fastened to the sleepers by three spikes and three
hollow trellis, two outside the rail and one
inside. The sleepers were of the usual size,
9 feet long by 18 inches by 5 inches, and were
laid in mixed gravel and stone ballast. The
sleepers were creosoted, and of ordinary red wood.
The rail joints were fastened by means of fish
plates of the usual type for suspended joint, four
bolts to each pair, weighing 35 lbs. per pair.
There would be 12 inches of bottom ballast under
the sleepers, and the sleepers were surrounded up to
the top surface by broken stone ballast. I hand
in a plan marked "A", scale 40 feet to an inch,
showing rails, sidings, platforms, &c., between
Salisbury West and East boxes. It also shows
by my permanent way inspector, commenced nearly opposite rail G, and extended about 19 yards eastward. The northern rail of the down line was forced against the southern rail, and both were thrown out of position. The west end of coach No. 84 was covering this pit, and the leading wheels of this coach were lying in the hole. It is evident that a derailment was occasioned, but how it occurred it is impossible to say. In view of the evidence supplied by the damage to and destruction of the rolling stock, it is my opinion that the train was traveling round the curve at a very high speed. I have calculated the effects of centrifugal force, and can say that the super-elevation provided on the curve would be sufficient to neutralise it up to a speed of about 20 miles an hour, but that beyond this speed there is a wide limit of speed before the moment when overturning would commence. I should expect that there would be absolutely no chance of overturning on an eight-chain curve at a lower speed than 41 miles an hour. My calculation for this figure assumes that the centre of gravity of a vehicle is six feet above rail level. The calculation also makes allowance for doubling the centrifugal force on account of impact, which in this particular case would be an important factor. With a lower centre of gravity than six feet, there is of course a greater margin of safety for trains of ordinary build.

In the case of the curves on the up through line to London, the curves on the up through and up slow lines, the junction consists of an ordinary cross-over road with curves of about 73 chains radius at either end, with a short length of straight in the middle, where it makes a diamond with the opposite crossing. I hand in a sketch of the diamond marked 'B,' on which is shown the sleeper by sleeper the damage that was found on the up through road after the accident. As to super-elevation on this curve, at sleeper B1, the super-elevation after the accident was found to be 12 inches. The super-elevation increases steadily from that point until sleeper C2 is reached, and the super-elevation at sleeper D9 is 20 inches, this point is 87 chains from C2. The super-elevation of 20 inches is maintained steadily until approximately sleeper D9 is reached; from there the super-elevation decreases again quite steadily until right to the end of the check rail at J 5. At the bridge girder the rails are level. After the accident, I found by making off-set measurements at every chair, that the radius of the curve along the length of rail B varied from 73 to 109 chains; along rail C the curvature varied from 63 to 83 chains. From sleeper D1 to D7 the radius was 83 chains; from D8 to D12 it varied from 8 to 63. Along rail E, the radius varied from 63 to 8. Along rail F, the radius varied from 8 to 63 at maximum. Along G, C, and B, the radius of the curve at G 6 1/2 chains radius; G 10, 111. Along H the radius was from 11 1/2 to 12; along J from 13 1/2 to 17; at J 5, the end of the check rail. No doubt there had been some slight movement of the rails, owing to the accident itself, which would account for much of this variation in radius. I agree with all the details shown on plan F of the damage caused by the accident to the two lines of rails. As regards the rail which is shown as broken in the up through road (rail L), it would appear probable that it was broken by the passage of the first or second vehicle of the train as it crossed the up road towards the bridge, 4, and the district engineer, on examining the permanent way carefully at 5.30 a.m. on the morning of the 1st July, and we could find no marks either on the check rail, or the running rails of the up through road, of flanges having crossed them. The top of the check rail was covered with grease and dirt, and it would therefore, in my experience, have shown very plainly that any flanges having crossed it, if this had been so. The trench in which the northern rail of the down road, described by Mr. Walter Gerson states: I was a passenger in the boat express on the night of the 30th June. There was considerable swaying of the carriages which I thought was due to high speed, about 12.00 midnight, before Templecombe was reached. After leaving Templecombe, several times while
we were having dinner, it was difficult to keep the plates, &c., on the table. Just before the accident the swaying became so great that I and my companions remarked upon it, and a lady who was with us could scarcely keep her feet as she was attempting to leave the compartment. Immediately after this there was a piece of smooth running which lasted for about two or three seconds and then came the crash. I think there was no slackening in the speed of the train immediately before the accident. I have travelled on other occasions by this boat train; on these other occasions I have never experienced so much roughness in riding or swaying of the carriages. I think the roughness of travelling was worse on this last occasion throughout the whole journey, but the worse jolt we experienced was two or three seconds before the crash occurred. I do not remember hearing the whistle of the train sound just before the accident occurred. I think that the inhabitants of Salisbury who came forward after the accident, and volunteered their assistance, deserve the greatest credit and recognition for their endeavours. I was riding in the last corridor coach, and was the first of the passengers to get out of the wreck. The stationmaster had the rank of chief assistant at the time in their power to assist passengers. There was a want of need of such tools as saws and axes. The last occasion I travelled by this boat express was about one year ago. Mr. Macdonald and I compared watches, a few minutes before the accident took place, and we found it was 1.53 a.m., I was riding with my back to the engine.

Mr. Herbert Breakman states: I was a passenger in this boat train on the night in question. I have not previously travelled by this train. I think the riding between Devonport and Templecombe was more or less rough throughout. The swaying and roughness of riding was not so bad as to actually cause me alarm, but it made me think that we were travelling at a great speed. I did not notice any improvement in the riding after leaving Templecombe. I did not notice any slackening in the speed as we were approaching Salisbury Station. I do not remember hearing the engine whistle sound. The impression of roughness of travelling and high speed was given to me by the behaviour of plates and bottles on the table, whilst we were having dinner before reaching Templecombe, and afterwards when there were bottles and glasses still on the table. I am quite satisfied that all the appliances were in working order. The Company did everything in their power after the accident occurred. I think that everything was done that was possible to release the unfortunate people who were pinned in the compartment by broken timber. I should estimate that the speed we were travelling at immediately before the crash occurred was about 8 miles an hour. We have travelled much on railways on the Continent, in the United States and in England.

Mr. Frederick Charles Eyles, outdoor assistant to the Chief Mechanical Engineer, recalled, states: I hand in two further notices. No. R. 23,546, dated 3rd May, 1904, and No. R. 23,991, dated 14th June, 1904, in which the attention of drivers was drawn to the necessity for running to scheduled time, and warning them that they would be removed from their engines if they ran at higher speeds. The second of these notices was issued as a result of the traffic superintendent reporting a case of a driver of the boat express having run under scheduled time. The man was severely reprimanded, and ordered not to drive the boat train again. There were three cases last year where men were reduced from express grade for exceeding booked speeds, but not with the boat train. Where a man is punished a written order to the foreman is sent which is read out to the driver at fault. I do not think that the fact of a driver shutting off steam, say approximately near the Salisbury West box, when he was travelling at a high speed would have much effect in reducing the speed before reaching the point where the accident occurred.

Mr. Henry Hopkins, superintendent of the line, recalled, states: When we hear from the locomotive department that there is insufficient time allowed for particular trains at particular points, owing to gradients and so forth, we allow extra time to suit the case. We have never had any complaint from the locomotive branch, with regard to this boat express, that the timing was insufficient between any points. The drivers, so far as I know, have found no difficulty in maintaining this service. There are between three and five bogies with a single engine. Where there are more than five coaches the train is divided. With regard to comparing the running of the boat train with the ordinary up express trains, the 10.08 a.m. express from Plymouth is allowed 1 hour 16 minutes to run from Devonport to St. Davids, Exeter, the distance being 57 miles, and there are 29 coaches. If the speed of trains is checked, it is done for the convenience of the passengers. In order to check the speed of these trains, the 10.08 a.m. express from Plymouth is allowed 1 hour 16 minutes to run from Devonport to St. Davids, Exeter, the distance being 57 miles, and there are 29 coaches. If the speed of trains is checked, it is done for the convenience of the passengers. In order to check the speed of trains at certain places the Company have an appliance on the Portsmouth direct road by which the speed of trains down the bank is checked by electrical contact being made at points, and the signalman is therefore able to note the exact time taken by the train. The ordinary express, with a usual load of eight bogies, is allowed 1 hour 39 minutes between Exeter and Salisbury, the distance being 88 miles, and the boat express, allowing for a deduction of five minutes per hour, the distance being 57 miles, is timed to do the distance in 1 hour 35 minutes. If a deduction is made for acceleration, starting from rest at Queen Street, Exeter, and for slackening at Salisbury to come to a stand at the platform, the running time of the ordinary express is reduced to 1 hour 57 minutes, so that the boat express has only two minutes less time in which to run the distance of 88 miles. This difference of two minutes was calculated for on account of the lighter load of the boat express, and consequently better speed which the boat express could maintain up banks. Following the usual practice, I have no doubt that an examination of the guard's journal in the case of this particular boat train, had it shown that the driver only occupied two minutes in running between Wilton and Salisbury West, instead of three and a-half minutes as allowed, would have been taken up, with a view to reporting the case to the Running Department.
The train to which this sad calamity occurred, was the usual boat express, which travels (when required) every Saturday from Plymouth to London in connection with the American line of steamships. The trains provide first class accommodation only between Plymouth and London. The passengers are landed from the liner by the Railway Company’s tender, and board the train at Stonehouse Pool.

The train service commenced on 9th April, 1901, and has been worked, with but two or three exceptions, regularly since that date. Prior to the commencement of this service, all the Company’s trains were booked to stop at Salisbury Station. The speed approaching and leaving the platforms was therefore necessarily low. It was arranged that the boat express should not call at any station between Devonport and London, but that one stop should be made at Templecombe Junction for the purpose of changing engines.

I attach (Appendix II.) a copy of the first skeleton timetable, dated 8th April, 1904, arranged for the boat express (Special Notice, No. 414). An abstract of the running times and average speeds is as follows:—

<table>
<thead>
<tr>
<th>Route</th>
<th>Time allowed</th>
<th>Average speed per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devonport to Templecombe</td>
<td>111.5 miles</td>
<td>2 hrs. 21 mins. 50 miles.</td>
</tr>
<tr>
<td>Templecombe to Waterloo</td>
<td>112 miles</td>
<td>1 hr. 56 mins. 57.9 miles.</td>
</tr>
</tbody>
</table>

No trial trip was run for the new service, as the skeleton time table was practically based upon the timings of the ordinary express trains. These had been accelerated about a year previously, and a trial trip was run in connection with this acceleration. But representatives of the running and traffic branches accompanied the first journey made by the boat express on the 9th April 1901. It was then apparently recognised that high speed through Salisbury Station was inadvisable. A notice, R.23,416 (see Appendix II.), was issued to enginemen by the chief mechanical engineer on the 3rd April 1904, limiting the speed of non-stopping trains through Salisbury to a maximum of 30 miles an hour.

A second special traffic notice, dated 21st April 1904 (No. 494, see Appendix II.), was issued for the second occasion on which this express was worked. From the enlarged time-table in this notice it will be seen that the restriction of speed to 30 miles an hour through Salisbury is specifically mentioned. More sectional timings are given in this notice, but the total running times are identical with those given in the first notice.

After this the service was worked regularly, and no alteration was made in the skeleton time-table until 10th February 1906. A third special traffic notice (No. 32, see Appendix II.) was issued on this date. In this notice an additional minute is allowed in the running time between Devonport and Salisbury, and an interval of one minute is allowed for running between Salisbury West and East signal-boxes. The distance between these boxes being 755 yards, the average speed indicated by the new timing is therefore between 25 and 26 miles an hour. Mr. Holmes explains in his evidence that the revised timing between Salisbury signal-boxes was made in consequence of a complaint he had received from the engineering branch that a private special train had exceeded the maximum speed limit of 30 miles an hour through the station. His intention in putting in a timing between the East and West boxes was that a reasonable margin of time should be allowed for considerable slackening of the speed of the train through the station. The extra two minutes is allowed in this third notice as far as Basingstoke, but the total time for the whole journey, i.e. 4 hours 20 minutes, remained unaltered. as the time originally allowed between Basingstoke and Hampton Court Junction was reduced by two minutes.

In the working time tables issued by the Company for the period 1st June to 30th September 1906, although the specific timing for the boat express at Salisbury East signal-box is omitted, two minutes are still allowed for running between Salisbury West box and Tunnel Junction. The distance between these points being 2274 yards, the average speed therefore indicated by the latest issue of the working time tables is 38.7 miles an hour. This is not at variance with the speed restriction of 30 miles an hour through the station, or with the one minute timing between the East and West boxes.

In Appendix II. will also be found copies of two further notices issued to enginemen by the Mechanical Engineer’s Department, Nos. R.23,546 and R.23,991. These are dated 3rd May and 14th June 1904 respectively. Mr. French explains in his evidence that these notices were issued on account of reports which had reached them of enginemen, with the boat express, running at higher speeds than those scheduled, on sections of the railway in the vicinity of Basingstoke. Since the date of this last notice, no reports
appear to have been received of enginemen exceeding the scheduled speeds with this
express.

The evidence and documents mentioned establish clearly these points. First, there
has been no acceleration of the boat express over the whole journey since the initiation
of the service in April, 1904. Second, there has been a regulation in force since
20th April, 1904, restricting the speed of all non-stopping trains through Salisbury
Station to a maximum of 30 miles an hour. Third, action has been taken in various
ways by different departments during the past two years, to prevent enginemen from
running at speeds beyond those authorised by this specific restriction, and the scheduled
timing of the train.

Accounts of the journey of the train, on the night in question, are to be found in
the evidence of driver Lailey and guard Harrison. The train comprised an engine and
tender of the usual 2-4-0 express type, weighing together 98 tons 16 cwt., and five bogie
coaching vehicles. The latter weighed with passengers, luggage, etc., possibly about
120 tons. Five bogie vehicles is the maximum load with a single engine for this boat
express. Lailey (on engine No. 288) drove the train from Devonport to Templecombe.
He proves that the continuous brake was in good order and was effectively used on this
half of the journey. Both Lailey and Harrison declare that the train ran as usual to
Templecombe, where it arrived one minute before time.

At Templecombe driver Robins and fireman Gadd (with engine No. 421) relieved
Lailey. It was Gadd's duty to couple the engine and tender to the train, and connect
the brake hose. Harrison, who rode in the kitchen van at the end of the train, did not,
as was his duty, prove the continuity of the vacuum brake, by reducing the pressure of
the vacuum in his gauge before the train left Templecombe. But he asserts that he saw
the pressure rise in his gauge, after the engine was attached, and was satisfied that the
brake was in working order. The train waited at Templecombe four minutes, and left at
booked time.

Below is shown in tabular form, information extracted from the signalmen's books
&c., regarding the journey of the train between Devonport and Salisbury. As far as
Templecombe, only signal-boxes are given which are named in the time-table. Between
Templecombe and Salisbury, all the signal-boxes, which were not switched out are given.

<table>
<thead>
<tr>
<th>Signal-boxes</th>
<th>Distance between boxes</th>
<th>Time allowed between boxes</th>
<th>Average booked speed, Miles per hour</th>
<th>Time occupied between boxes</th>
<th>Actual average speed, Miles per hour</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devonport ...</td>
<td>16 53</td>
<td>20 593</td>
<td>52 22</td>
<td>22 458</td>
<td></td>
<td>Train 2 minutes late at Tavistock.</td>
</tr>
<tr>
<td>Tavistock ...</td>
<td>13 51</td>
<td>20 409</td>
<td>19 430</td>
<td></td>
<td></td>
<td>Train 1 minute late at Meldon.</td>
</tr>
<tr>
<td>Meldon Junction ...</td>
<td>26 658</td>
<td>29 545</td>
<td>27 585</td>
<td></td>
<td></td>
<td>Train 1 minute early at Cowley.</td>
</tr>
<tr>
<td>Cowley Junction ...</td>
<td>2 237</td>
<td>6 230</td>
<td>6 230</td>
<td></td>
<td></td>
<td>Train 1 minute early at Queen</td>
</tr>
<tr>
<td>Queen Street, Exeter ...</td>
<td>11 76</td>
<td>135 531</td>
<td>15 378</td>
<td></td>
<td></td>
<td>Street.</td>
</tr>
<tr>
<td>Sidmouth Junction ...</td>
<td>11 302</td>
<td>135 506</td>
<td>13 525</td>
<td></td>
<td></td>
<td>On time at Seaton.</td>
</tr>
<tr>
<td>Seaton Junction ...</td>
<td>25 22</td>
<td>28 542</td>
<td>27 562</td>
<td></td>
<td></td>
<td>1 minute before time at Yeovil.</td>
</tr>
<tr>
<td>Yeovil Junction ...</td>
<td>10 468</td>
<td>12 522</td>
<td>12 529</td>
<td></td>
<td></td>
<td>1 minute before time at Templecombe.</td>
</tr>
<tr>
<td>Templecombe Junction ...</td>
<td>6 605</td>
<td>9 5</td>
<td>9 427</td>
<td></td>
<td></td>
<td>Train 4 minutes late at Dinton.</td>
</tr>
<tr>
<td>Gillingham ...</td>
<td>4 128</td>
<td>20 604</td>
<td>5 345</td>
<td>24 454</td>
<td></td>
<td>Train 3½ minutes late at Wilton.</td>
</tr>
<tr>
<td>Senley ...</td>
<td>4 756</td>
<td>4 593</td>
<td></td>
<td></td>
<td></td>
<td>2 minutes late at Salisbury</td>
</tr>
<tr>
<td>Tisbury ...</td>
<td>4 255</td>
<td>4 643</td>
<td></td>
<td></td>
<td></td>
<td>West.</td>
</tr>
<tr>
<td>Dinton ...</td>
<td>5 666</td>
<td>3 636</td>
<td>5 50</td>
<td></td>
<td></td>
<td>2 minutes late at Salisbury West.</td>
</tr>
<tr>
<td>Wilton ...</td>
<td>2 252</td>
<td>3 397</td>
<td>20* 604</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salisbury West ...</td>
<td>0 3435</td>
<td>1 257</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Corrected in accordance with Mr. West's evidence.
In accordance with the times entered in the signalmen’s books, it appears that the express was never more than two minutes behind time on the first half of the journey to Templecombe, or more than one minute before time. After leaving Templecombe, on time, the train lost four minutes in the first 20 miles to Dinton, and gained two minutes on the timetable in running the distance of eight miles between Dinton and Salisbury West. Three and a-half minutes were allowed for running between Wilton and Salisbury West, the distance being 2.31 miles, and only two minutes were actually occupied.

The table shows the average speed for the train between Dinton and Wilton to have been 70 miles, and between Wilton and Salisbury West 69.4 miles per hour.

It is of course obvious that these figures must be regarded with all the reserve due to the fact that the timings entered in their train books by signalmen show minutes or half-minutes only. The speeds and times calculated therefore cannot be regarded therefore as more than approximations. On the other hand, it is not always remembered that there is as much likelihood of errors occurring from over estimation as from under estimation, of time by the signalmen. So that after all the times occupied may have been shorter, and the average speeds higher, than those given in the table.

Guard Harrison states that his impression was that the train was a little behind time at Salisbury West box, to the extent of about a minute. It was his experience, he says, since February last, for drivers of this train to apply the continuous brake near the Salisbury West box, and for the speed of the train to be reduced to about 30 miles an hour at the west end of the platforms. On this night the brake was not so applied by driver Robins. Harrison tried first of all to draw the attention of the driver, as they were passing the West box, by using his hand brake. Immediately afterwards, as there was still no movement of the needle gauge of the continuous brake in his van, he himself applied the continuous brake gently, again with the object of reminding the driver of the speed of the train, and of the necessity for a reduction of speed. The application, however, did not have the desired effect, and was not forcible enough in itself to reduce the speed of the train. It was manifestly a very gentle application, if, as Harrison states, he saw the needle of the gauge immediately resume its original position. The vacuum could certainly not therefore have been reduced by ten inches as mentioned by Harrison. All this of course took place in a very short period of time, and before anything else could be done, Harrison was thrown across the van by the shock of the collision. He estimates the speed of the train at the west end of the station at 50 or 60 miles an hour, and states that he thought the speed was unsafe, if the brakes were not applied.

The evidence of signalman Mundy, stationed at Salisbury West signal-box, is valuable. It confirms the statement of guard Harrison that, contrary to usual practice, there was no slackening of the express as it passed his box, and that the continuous brake was not in operation on the train. He estimates the speed of the train as it passed his box at about 60 miles an hour. This was very much higher than the usual speed of the train, which would be about 35 miles an hour. He thought at the time that the speed was dangerous for the curves at the west end of the station. Steam was shut off as the train passed him, and the engine whistle was sounded as the train ran by his up distant signal.

Inspector Spicer, foreman Rook, and carriage examiner Abbott, confirm the statement that the train passed the platform at Salisbury at a higher speed than usual.

The evidence of signalman Haines at Salisbury East is also of importance. It fixes the time at which the train passed the West box as something over 1.50½ a.m. This corresponds with signalman Mundy’s time (as corrected by Mr. West), and confirms with some accuracy the actual time, fixed by inspector Spicer, of the accident as 1.57 a.m. The average speed of the train between Dinton and the scene of the accident, a distance of 8.4 miles, works out from this additional data at about 72 miles an hour, an average higher than that shown on the table on page 13.

Mr. French proves that, after the accident, an examination of engine No. 421 showed that the regulator was closed, the motion gear was nearly in the full forward position, and the driver’s vacuum brake-handle was in the neutral, or running position. This is confirmatory of other evidence showing that the engine was not steaming, but running free, and that the continuous brake was not applied. The very complete destruction of the three carriages behind the engine, and of five vehicles of the milk train, proves the enormous amount of energy in the train at the time of the accident.

I consider all this evidence most conclusively proves that the boat express was travelling at a very high rate through the station. It is of course impossible to say what
the speed of the train actually was. But the whole of the evidence points to the probability that the speed was at least twice as great as that authorized by the Company in their speed restriction, and it is possible that it may have been as much as 70 miles an hour, as stated by Mr. Herbert Brookman, one of the passengers, in his evidence.

This was the first occasion on which Robins had driven the boat express, and probably the first time he was required to run through Salisbury Station without stopping. He was 40 years old, had altogether 22 years service with the Company, and had driven between London and Exeter during the last eight years. He was a fully-qualified express driver, and, as such, took his turn with other men of the same standing, for working this train. He was a total abstainer, and bore a fair character. It is given in evidence by inspector Furze and shunter Mullett, who saw and spoke to Robins at Templecombe, the former about 1½ hours, and the latter about ½ hour before the express arrived, that he was perfectly sober and fit for duty. Mullett states that Robins said he had no intention of getting into Waterloo before time, otherwise he would be found fault with by the Chief Mechanical Engineer. Robins signed the several notices, printed in Appendix II, which were issued by his own and the Traffic Department, regarding the restriction of speed through Salisbury Station, and the one minute timing between the West and East boxes. The undermentioned general rules were also applicable:—

No. 136. The engine driver and fireman, before commencing duty, must ascertain from the notices posted for their guidance, if there be anything requiring their special attention on those parts of the line over which they have to work.

No. 148 (A). Engine drivers of trains, when running through junctions to or from lines diverging from the straight road, must so reduce their speed as to insure a steady passage for the whole train through the junction points and crossings.

Apart from regulations and timings, it is inexplicable how a driver with the experience of Robins could have been apparently so reckless as to travel at such a high speed on this section of the line. The fact that the engine whistle was sounded as the train approached Salisbury West box, appears to show that he was alert and knew his whereabouts. It might perhaps be possible that, never having previously passed through the station without stopping, a driver might not have recognised the short curve, on which the disaster occurred, as one unsuited for high speed. But 20 yards in advance of where the engine was found overturned, there are facing points on the up through line, leading through an ordinary scissors crossing on to the up main line. The reverse curves of this crossing have radii of about 7½ chains. The train had to travel over this junction crossing, and I think no driver could fail to recognise such a crossing as dangerous for any but very moderate speeds.

The statements of express drivers Mercer and Trimmer, who have frequently driven the boat express between Templecombe and London are of interest, as showing what their custom has been as regards the application of the continuous brake, and the rate of speed through the station. It does not appear from their account that any difficulty has been experienced in maintaining the scheduled timings for the train with a load of five bogies. These men, as well as Laidley, give it as their opinion that an express driver, even on the first occasion of his running through Salisbury without stopping, would recognise that it was necessary to slacken speed at the east end of the station, on account of the sharp curves.

The evidence shows that the regulator was closed, when the train was passing through the station. To this extent Robins appears therefore to have complied with the speed restriction. But merely closing the regulator, without any application of the continuous brake, was not likely on such easy gradients, to have materially reduced the high speed at which the train was travelling, before the curve was reached where the accident happened.

On the night previous to the accident (29th June), Robins was on duty from 5.30 p.m. until 4 a.m. on the 30th June. After nine hours rest, he came on duty again at 1.30 p.m. and worked to Salisbury where he arrived at 4.12 p.m. He went to shed at once, and I understand was hooked off duty until 8.12 p.m., when he left for Templecombe. He reached Templecombe at 9.6 p.m., and stood in the siding until 1.22 a.m. on the 1st July. The normal hours of duty would appear therefore, for this special tour, to be from 1.30 p.m. till 5 p.m., and from 8 p.m. till 4 a.m. If full credit is given for the three hours interval of rest at Salisbury, Robins appears to have been on duty for 9½ hours at the time of the accident.

It has been stated that engine men with this boat express have been encouraged, by receipt of tips from passengers, to run at excessive speed. I have gone thoroughly into this question, but have not obtained any evidence in support of the statement, which
appears to be quite unwarranted. The evidence shows that the passengers had no opportunity of speaking to either of the drivers employed, except on arrival at Waterloo.

The left-hand curve on which the accident took place, commences immediately at the eastern termination of the island platform. It extends between the points D and E, sec plan A, and has a total length of about 92 yards. The radius of the curve appears to have varied from about twelve chains or more at either end to eight chains over the greater part of its length. Except for a rail length (30 feet) at either end, the curve is checked throughout. The check rail from its appearance had clearly been doing its work well. The rails are level at the west tangent point. At distances of ten and twenty yards respectively from the west tangent point, the outer rail has an elevation of 10 and 34 inches above the inner rail. This super-elevation of 34 inches was maintained for a distance of about fifteen yards. It then decreased gradually until opposite the eastern end of the check rail where it amounted to 24 inches.

The damage which was found to have been caused to the permanent way of the up through line is shown on the detail plan B. It is very slight, and altogether different from what would be expected to result from an ordinary derailment at high speed. The track was not slowed nor the rails burst. Neither the outer rail nor the check rail showed marks such as would be made by the flanges of engine wheels crossing them. On the check rail especially, which was covered with the usual dirt and grasse, such marks would have been easily visible. There were no marks on the sleepers in the four-foot or six-foot ways, such as would be made by a pair of wheels. None of the inside jaws of the chairs under the inner or check rails were broken. Nearly the whole of the damage done to the chairs under the outer rail was evidently caused by each wheels riding outside the rail, which was driven inwards over a considerable length of the curve, to a total extent of about 7 inches, including the original slack. The wrought iron chair spikes showed a corresponding twist. The only rail broken in the up through line immediately adjoined Fisherton Street bridge. It was broken inwards, evidently by one or other of the three leading coaches, two of which crossed the line and the third lay across it.

The greatest damage was done to the down through line. A length of about 40 yards of this road, westward of Fisherton Street Bridge, was completely destroyed. A big trench, three and a-half feet in depth, was scored through the ballast and formation. The centre line of this trench corresponded roughly with the proper position of the northern rail of the down line.

I could find no evidence, from the condition of the permanent way after the accident, to show that the engine mounted or jumped the rails, or that the track had been slowed or the rails burst. The permanent way generally was stiff and in good condition.

I examined carefully the engine and tender, both at Salisbury and after their arrival in the Nine Elms Works. The engine had only been in service since August 1905. There was no hollowness of tyres or sharpness of flanges. Both tyres and flanges were in thoroughly good condition. There were no marks on the flanges of the leading bogie such as would be occasioned by the wheels meeting with an obstacle on the road, or mounting the rails. The right hand wheels of both engine and tender showed signs of having ploughed into the ground. Soil was caked into the angles and crvices of the spokes. But there were no such indications to be found on any of the left-hand wheels. All the axles on the train were found unbroken after the accident.

It has been suggested that the engine bogie seized or jammed, and thereby derailed the engine. I do not think this was possible with the clearance of one-eighth of an inch which had been provided for the bogie pin. And even if possible, the results, especially on the permanent way, of a derailment of this description, would have been altogether different in my opinion from those in this case.

From calculations made by the Company's Chief Mechanical Engineer, it appears that the centre of gravity of engine No. 421 was about 5 feet, and of the tender 42 feet, above rail level. Any calculation for determining the centre of gravity of an engine or vehicle is necessarily complicated, and the result can only be accepted as an approximation. Compared with the height of the centre of gravity of modern express engines, as assumed in text-books, a greater height than 5 feet would I think be generally expected for an engine of the type of No. 121, with a boiler centre 81 feet above rail level. But it can be shown by well-known and accepted formula that, on a curve with a radius of 8 chains (=1083), a vehicle with a centre of gravity 5 feet above the rails, is in unstable equilibrium at a speed of about 67 to 68 miles an hour, even when the full allowance is made for the beneficial effect of 34 inches of super-elevation. In the case of this particular curve, there was no super-elevation at the tangent point, and over the greater portion of the curve, the super-elevation was less than 34 inches.
inch. Moreover, it is probable that the effect of centrifugal force would have so acted on the springs, whilst the vehicle was still in a state of stable equilibrium, as to bring the centre of gravity into the position it would occupy if the vehicle were a rigid body, and there was no superelevation. Unless there is a gradual lead into a sharp curve of this description, the effect of sudden impact has also to be taken into consideration. It is in accordance with the views of well-known writers to make some allowance for effect of impact in determining the speed at which overturning, due to centrifugal force on a sharp curve, becomes imminent. Some disregard the beneficial effect of superelevation, others make a very much greater allowance, by doubling the amount of centrifugal force. In this particular instance, if the small amount of superelevation is not taken into account, a calculation, or diagram of forces, will show that for the engine and tender, taking the centres of gravity as 5 feet and 4 1/2 feet above rail level respectively, overturning is imminent on a curve with a radius of 8 chains at speeds of about 63 and 65 miles an hour.

Bearing this in mind, and for want of any evidence from the condition of the permanent way, engine wheels, &c., of ordinary derailment, I have come to the conclusion that the high speed at which the train was travelling caused the engine to overturn on the sharp curve immediately at the east end of Salisbury Station platform, and that the disaster was directly caused by the speed of the train, which must have been very much in excess of the maximum speed authorised by the Company's instructions and timetables.

It is obvious that no increase in the depth of the flanges would have any effect in minimizing liability to overturning.

I do not think that there was any defect in the permanent way, or in the engine or rolling stock, which was likely to have contributed to the accident. Nor had the length of the train, or the weight of the load behind the engine, anything to do with the case. Further, I believe that, if the speed limit of 30 miles an hour through the station had not been exceeded, the disaster would not have occurred.

It appears that the engine and tender were in the act of overturning when they came in contact with the milk train on the adjoining road. The coupling behind the tender unhooked or broke. The bulk of the damage to the first three coaches was, in my opinion, caused by their heeling over and dashing at high speed against the upturned wheels of the tender. They were thus diverted northward into the position shown on plan A. The wheels of the tender seem to have torn the sides out of these coaches, and I do not believe that any stiffening of the bodies of the coaches would have had much effect in lessening the destruction.

The maximum amount of superelevation used on the Company's system is six inches. Even had this amount of superelevation been provided on this curve, it would not have prevented a catastrophe occurring at such a high speed. For if, by a miracle, the train had kept the rails on the curve where overturning took place, it must have been derailed, or overturned, with equally terrible results, on the still sharper reverse curves at the junction crossing immediately east of Fisherton Street Bridge. Here there was no superelevation provided, and it was not possible to provide any.

It was within the power of guard Harrison, if he was aware that the train was not running in accordance with usual practice, or with the Company's speed limit and timetables, to apply the continuous brake himself. If he had done this, he would have reduced the speed of the train, and possibly prevented the accident. He explains that he was afraid of breaking couplings, or causing some other damage to the train. He stated at my inquiry that he recognised that the speed was dangerous, and if this were so, it was his duty to have used the brake, even at other minor risk. In his evidence at the Coroner's inquest, he said he did not think the speed was dangerous, and made other statements conflicting with the evidence he gave before me. I feel obliged therefore to regard, with suspicion, much of the material portion of his statement. Whilst recognizing that his position was a difficult one, it is a matter for regret that he showed himself so little fitted for responsibility, when he must have been aware, if he was awake and alert, that the driver was not obeying the Company's instructions regarding speed.

There are some other points to which it appears necessary to call attention.

It is not in accordance with general practice on English railways for speed restrictions on account of permanent way to be imposed by the running department. Nor does it appear that that department is best qualified for deciding such questions. The engineering staff alone possess information regarding details and condition of track upon which limits of speed are mainly based. Upon the engineering staff should fall the duty of fixing the restrictions necessary for safety. Wherever any portion of the track is unsuited for express speed, the responsibility should be laid upon the engineer of declaring the fact, and of imposing a speed limit. This should be done irrespective of whether
express traffic is worked over the particular section of road or not. These speed limits should be printed together in the Company's working time tables, or other periodical publication, and all departments of the service should co-operate in upholding them. A want of co-operation inevitably tends to lower the standard of security on a railway.

The question of proper speed limits is a complex one. A wide margin on the side of safety is expected and allowed for on British railways, it is well also to consider the desirability of providing comfort as well as safety in travelling. In the case of a sharp curve the point of danger is reached long before there is theoretically any imminence of overturning. But there is also risk of serious oscillation, severe impact, &c., which will cause apprehension of danger and discomfort, long before the actual point of danger is attained. Allowance has also to be made for the difficulty of accurately gauging speed.

As regards the curve at the west end of Salisbury Station, a maximum speed limit of 30 miles an hour, provided that the required superelevation is supplied, meets both the requirements of safety and comfort. But for the curves at the east end, the case is different. A speed of 30 miles an hour is outside the limits of danger, if the permanent way is stiff and in good order as in this case. But such a speed would require the maximum superelevation shown in the engineer's tables and this would have to be provided all through the first curve. The circumstances do not appear to permit of this provision. Without this superelevation a speed of 30 miles an hour would mean discomfort in travelling and possibly cause alarm in the minds of passengers. There is also the junction crossing, with reverse curves of radius, which commences on the east side of Fisherton Street Bridge, to be considered. Here no superelevation to speak of can be given. I do not think, therefore, that it would be wise to allow a higher speed than 15 miles an hour on the curves at the east end of the station.

Railway Companies have to contend with many difficulties which are the natural result of their lines having been laid out in early days before experience was gained, and when high speeds were never contemplated. Many improvements have been carried out in the perfecting of the permanent way, rolling stock, signalling, &c., in order to enable traffic to be worked safely at express speeds. But further improvements in the way of alignment and inclination will assuredly become necessary, if Companies desire to place themselves in a position to meet a demand for long sustained high speed travelling. This condition is one which has to be faced.

Some time appears to have elapsed before all the passengers, who were imprisoned in the debris of the coaches, were extricated. It has been suggested that the time of their imprisonment would have been shortened if saws and other cutting tools had been more immediately available. For example, if such tools formed part of the equipment of the train itself. But it must be remembered that men as well as tools were required, that there would be but few people stirring at 2.15 a.m., and that even if tools had been carried on the train, they would have been difficult and perhaps impossible to find in the confusion and destruction that resulted from the accident. I am informed by the Company that in Salisbury Station there is a permanent-way stores hut, and that Inspector Goodyear, who arrived at the scene of the accident at 2.15 a.m., brought the following tools—three adzes, three hand-saws, two cross-cut saws and one axe. These were procured from the permanent-way depot. In this particular instance, owing to the destructive effects of the accident, it is not, I think, clear that if tools had been carried on the train, they would have been found and brought into use at an earlier moment.

Many passengers of the boat express, at the invitation of the Board of Trade, made verbal and written statements of their experiences. Others have been good enough to attend my inquiry and submit themselves to cross-examination. I desire to thank these ladies and gentlemen for the assistance they have afforded me. At a time when all must have been suffering severely from shock and the effects of the accident, the public spirit displayed by them is deserving of particular recognition.

I cannot conclude my report without an expression of deep regret for the long roll of valuable lives lost in this disaster, and of sincere sympathy with the relatives and friends of those who were killed, and with the injured sufferers. It is many years since an accident has occurred in the United Kingdom with such terrible results, and there is no other known case where overturning has been caused by high speed. It is but fair to the London and South-Western Railway Company to add that, during the past seventeen years, only two passengers have been killed on their system in railway accidents.

The Assistant Secretary,
Railway Department, Board of Trade.

J. W. PRINGLE,
Major.

* It is for consideration whether it would not be advisable for the distant signals at each end of the Salisbury Yard to be held at danger, with the object of emphasizing the speed limits.
APPENDIX I.

PARTICULARS OF DAMAGE TO NO. 421 ENGINE AND TENDER.

421 Engine.—Smoke box front and right side damaged and front tube plate bent back about 5 inches, chimney broken off: front buffer plate bent inward: right driving splasher and water tube door easing, footplating and steps damaged: engine cab damaged: left bottom gauge cock, steam reversing cock broken off boiler: front column of safety valve broken off: right leading brake hanger fractured, and shoe partly broken: leading bogie wheels, axle 1 out of truth: trailing bogie wheels, axle 1 out of truth: right and left axle box leading horn cheeks broken (fresh break): right trailing axle box horn cheeks broken (fresh break): front bogie tyre bolt broken and left guard iron bent.

421 Tender.—Both bogie centres broken off (fresh break): front bogie stretcher has a fresh vertical fracture: all brake gear damanged and vacuum cylinder and air chamber damaged: both foot-steps, sand boxes, brake column and wheel broken and damaged: right front axle box horn cheek and clip of front bogie broken.

DETAILS OF DAMAGE TO THE STOCK.

Boogie train from Plymouth.—Bogie brake van No. 17—Completely smashed. Corridor coaches Nos. 38 and 17—Completely smashed. Corridor coach No. 84—End and right side smashed and interior badly damaged. Kitchen van No. 192—Gangway and end damaged, steps boards, buffer rods and lights damaged.

10.12 p.m. (Saturday) Milk Train from Waterloo.—Bogie brake van No. 158, milk vans Nos. 163, 198 and 266, P. L. van No. 324—All completely smashed. P. L. van No. 61—Headstock broken. Passenger brake van No. 147—Headstock broken and buffers bent. Bogie brake van No. 450—Headstock and diagonal broken. Bogie Brake van No. 223—End and side smashed.

DAMAGE TO PERMANENT WAY.

1 30 ft. 87 lb. rail broken; 50 46 ft. chairs broken; 7 87 lb. switch chairs broken; 4 40 lb. chairs broken; 2 65 lb. chairs broken; 2 87 lb. check chairs broken; 40 56 bolts broken; 2 point rods broken; 11 30 ft. 87 lb. rails bent; 1 15 ft. 87 lb. switch rail bent.

APPENDIX II.

Office of Superintendent of the Line,
Waterloo Station,
April 8th, 1904.

TO ALL CONCERNED.

On Saturday, April 9th.

The American Line S.S. “St. Louis” is expected to arrive at Plymouth.

A SPECIAL EXPRESS TRAIN

Will run from Stonehouse Pool to Waterloo at time uncertain (probably between 8 a.m. and 12 noon), the speed table from Devonport to Waterloo being as under:—

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Mr. Richardson, Devonport, to arrange for all stations to Exeter to be advised by telephone the departure time of the special train.

Mr. Vallance to arrange for the Exeter passing time of the train to be telephoned to all stations to Salisbury.

Mr. Lawrence to arrange for the Salisbury passing time of the train to be telephoned to all stations to Waterloo.

It is imperative that this Special Train be given an absolutely clear run, and Station Masters will be held personally responsible for seeing this is done. It must have preference over all other trains.

Mr. Vallance to provide an Inspector to travel in charge throughout.
6'7" EXPRESS ENGINE No. 421.

TOTAL WEIGHT OF ENGINE EMPTY

TONS. CWT. 48.19

TOTAL WEIGHT OF TENDER EMPTY

TONS. CWT. 20.16

TOTAL WEIGHT OF ENGINE & TENDER IN WORKING ORDER

TONS. CWT. 38.16

IN WORKING ORDER 53.19

IN WORKING ORDER 44.17
Special Notice No. 494.

TO ALL CONCERNED.

ON SATURDAY, 23RD APRIL.

The American Line S.S. "St. Paul" is expected to arrive at Plymouth.

A SPECIAL EXPRESS TRAIN

will run from Stonehouse Pool to Waterloo at time uncertain, the speed table from Devonport to Waterloo being as under:

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"T." On Through Line.

HENRY HOLMES,
Superintendent of the Line.

(Third Special Notice.)

10th February, 1906.

ON SATURDAYS WHEN REQUIRED.

BOAT PASSENGERS, DEVONPORT (STONEHOUSE POOL) TO WATERLOO.

Referring to Special Notice No. 109, Service 59, the Special Train from Devonport to London with the American Line Boat Passengers (Train No. 4, page 60 of the Main Line Service Book), will be allowed one minute extra as far as Basingstoke for slackening through Salisbury Station.

The revised timing will be as follows:

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<td>HAMPTON COURT JUNCTION</td>
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(T.R. 25,231)
MECHANICAL ENGINEER'S DEPARTMENT.

NOTICE TO ENGINEMEN,
AND ALL CONCERNED.

Chief Mechanical Engineer's Office,
Nine Elms Works,
20th April, 1904.

Salisbury Station.

Speed.

Non-stopping trains must not pass through Salisbury at a greater speed than 30 miles an hour.

No. R 23,446.

3rd May, 1904.

Devonport Boat Special.

This train must be run to scheduled time in future.

No. R 23,546.

14th June, 1904.

Devonport Boat Special.

On 3rd May, I requested that this train should be run to scheduled timing.

Any driver running it at a higher than scheduled speed, will be taken off his engine.

By Order.

This Notice is to be posted on the NOTICE BOARD at ....................... Station, and Foremen are to call the attention of Enginemen and Firemen to the instructions and arrangements therein specified, and take their signatures for same in Notice Book, and they are immediately to report all cases of neglect or departure therefrom.

Printed copies of the above Report were sent to the Company on the 27th September.

MIDLAND RAILWAY.

Railway Department, Board of Trade,
8, Richmond Terrace, Whitehall, S.W.,
20th September, 1906.

Sir,

I have the honour to report, for the information of the Board of Trade, in accordance with the Order of the 5th September, the result of my inquiry into the circumstances attending the collision which took place on the 3rd instant, about 10.56 a.m., at St. Pancras Station on the Midland Railway.

In this case the 8.5 a.m. up express train from Derby, when entering the station on No. 6 platform line, came into collision with the buffer stops at a speed of about 6 or 8 miles an hour.

The train was drawn by engine No. 1858, having single driving wheels, with a leading bogie, and trailing axle, and a trailing six-wheeled tender. The coaching stock comprised seven eight-wheeled bogie carriages, and one six-wheeled brake van at the rear of the train. All the wheels of the coaching stock were fitted with blocks actuated by the vacuum continuous automatic brake. The engine driving wheels, and all the tender wheels, were equipped with steam brake blocks.

About 19 passengers complained of the ill-effects of the shock. Of these, three received injuries which were attended to in hospital, but none were detained in hospital. I understand that all have recovered from their injuries.