

1917.
NEW ZEALAND.

RAILWAY ROLLING-STOCK COMMISSION

(REPORT OF), TOGETHER WITH MINUTES OF PROCEEDINGS AND EVIDENCE, ETC.

Laid on the Table of the House of Representatives by Command.

COMMISSION

TO INQUIRE INTO AND REPORT RESPECTING THE UPKEEP OF THE ROLLING-STOCK ON THE NEW ZEALAND GOVERNMENT RAILWAYS FROM AUGUST, 1913, TO 7TH JULY, 1916, AND THE CONDITION OF THE SAID ROLLING-STOCK ON THE LATTER DATE.

LIVERPOOL, Governor.

To all to whom these presents shall come, and to ROBERT JULIAN SCOTT, Esq., of Christchurch, Professor of Engineering and Technical Science at Canterbury College; JAMES MARCHBANKS, Esq., of Wellington; and JOSEPH PRIME MAXWELL, Esq., of Wellington: Greeting.

WHEREAS it is desirable that inquiry should be made respecting the upkeep of the rolling-stock on the New Zealand Railways from August, one thousand nine hundred and thirteen, to the seventh day of July, one thousand nine hundred and sixteen, and the condition of the said rolling-stock on the latter date:

Now, therefore, I, Arthur William de Brito Savile, Earl of Liverpool, the Governor of the Dominion of New Zealand, in exercise of the powers conferred by the Commissions of Inquiry Act, 1908, and of all other powers and authorities enabling me in this behalf, and acting by and with the advice and consent of the Executive Council of the said Dominion, do hereby constitute and appoint you the said

ROBERT JULIAN SCOTT,
JAMES MARCHBANKS, and
JOSEPH PRIME MAXWELL

to be a Commission to inquire into and report upon the following matters:—

1. The condition of the rolling-stock on the New Zealand Government Railways in July, one thousand nine hundred and sixteen.

2. Has such rolling-stock been maintained in good and efficient order and condition during the three years between August, one thousand nine hundred and thirteen, and July, one thousand nine hundred and sixteen?

3. Has proper provision been made for the upkeep and renewal of the rolling-stock?

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4. Has the condition of carriage and wagon springs at any time been inefficient?

5. Is it correct (as has been alleged) that where broken springs have been found under carriages two such springs have been put into one instead of being replaced by one sound carriage-spring?

6. Has the safety of the public been adversely affected at any time during the three years preceding July, one thousand nine hundred and sixteen, by the condition of the underframes and running-gear of the carriages and wagons?

7. Has any Inspector or other officer having charge of rolling-stock, or responsible for its condition, at any time during the three years aforesaid reported adversely on the condition and upkeep of the rolling-stock, or notified any of his superiors that he declined to carry the burden of his responsibilities by reason of the condition of the rolling-stock? If so, to whom was such report or notification given, and on what date?

8. Is the allegation that has been made, "that the undergear of coaches and wagons is wearing out, and that there has not been a sufficient supply of spares available during the three years specified," justified?

9. Is the allegation that has been made that the condition of rolling-stock at present existing is due to inefficiency, want of thought, and neglect of public interests on the part of the responsible officers of the Department justified?

And, with the like advice and consent, I do further appoint you the said ROBERT JULIAN SCOTT to be the Chairman of the said Commission.

And for the better enabling you, the said Commission, to carry these presents into effect you are hereby authorized and empowered to make and conduct any inquiry under these presents at such times and places in the said Dominion as you deem expedient, with power to adjourn from time to time and place to place as you think fit, and to call before you and examine on oath or otherwise, as may be allowed by law, such person or persons as you think capable of affording you information in the premises; and you are also hereby empowered to call for and examine all such books, papers, plans, writings, documents, or reports as you deem likely to afford you the fullest information on the subject-matter of the inquiry hereby directed to be made, and to inquire of and concerning the premises by all lawful means whatsoever.

And using all diligence you are required to report to me, under your hands and seals, not later than the sixteenth day of March, one thousand nine hundred and seventeen, your opinion as to the aforesaid matters.

And it is hereby declared that these presents shall continue in full force and virtue although the inquiry is not regularly continued from time to time or from place to place by adjournment.

And, lastly, it is hereby further declared that these presents are issued under and subject to the provisions of the Commissions of Inquiry Act, 1908.

Given under the hand of His Excellency the Right Honourable Arthur William de Brito Savile, Earl of Liverpool, Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, Member of the Royal Victorian Order, Governor and Commander-in-Chief in and over His Majesty's Dominion of New Zealand and its Dependencies; and issued under the Seal of the said Dominion, at the Government House at Wellington, this first day of February, in the year of our Lord one thousand nine hundred and seventeen.

W. H. HERRIES,
Minister of Railways.

Approved in Council.

J. F. ANDREWS,
Clerk of the Executive Council.

GOD SAVE THE KING!

EXTENSION OF ROLLING-STOCK COMMISSION.

LIVERPOOL, Governor.

To all to whom these presents shall come, and to ROBERT JULIAN SCOTT, Esq., of Christchurch, Professor of Engineering and Technical Science at Canterbury College; JAMES MARCHBANKS, Esq., of Wellington; and JOSEPH PRIME MAXWELL, Esq., of Wellington: Greeting.

WHEREAS by a Warrant dated the first day of February, one thousand nine hundred and seventeen, and issued under my hand and the public seal of the Dominion, you were appointed a Commission to inquire into and report respecting the upkeep of the rolling-stock on the New Zealand Government Railways from August, one thousand nine hundred and thirteen, to seventh July, one thousand nine hundred and sixteen, and the condition of the said rolling-stock on the latter date, and using all diligence you were required to report to me, under your hands and seals, not later than the sixteenth day of March, one thousand nine hundred and seventeen, your opinion as to the aforesaid matters: And whereas it is expedient to extend the time of the said inquiry in manner hereinafter appearing:

Now, therefore, I, Arthur William de Brito Savile, Earl of Liverpool, the Governor of the Dominion of New Zealand, in exercise of the powers conferred by the Commissions of Inquiry Act, 1908, and of all other powers and authorities enabling me in this behalf, and acting by and with the advice and consent of the Executive Council of the said Dominion, do hereby extend the time that you are required to report to me, under your hands and seals, to the twentieth day of March, one thousand nine hundred and seventeen.

Given under the hand of His Excellency the Right Honourable Arthur William de Brito Savile, Earl of Liverpool, Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, Member of the Royal Victorian Order, Governor and Commander-in-Chief in and over His Majesty's Dominion of New Zealand and its Dependencies; and issued under the Seal of the said Dominion, at the Government House at Wellington, this fifteenth day of March, in the year of our Lord one thousand nine hundred and seventeen.

W. H. HERRIES,
Minister of Railways.

Approved in Council.

F. W. FURBY,
Acting Clerk of the Executive Council.

GOD SAVE THE KING!

REPORT.

To His Excellency the Right Honourable Arthur William de Brito Savile, Earl of Liverpool, Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, Member of the Royal Victorian Order, Governor and Commander-in-Chief in and over His Majesty's Dominion of New Zealand and its Dependencies.

MAY IT PLEASE YOUR EXCELLENCY,—

In the matter of the Commission entrusted to us dated 1st February, 1917, directing us to inquire into and report respecting the upkeep of the rolling-stock on the New Zealand Government railways from August, 1913, to 7th July, 1916, and the condition of the said rolling-stock on the latter date, and more particularly on the following matters:—

- (1.) The condition of the rolling-stock on the New Zealand Government railways in July, one thousand nine hundred and sixteen.
- (2.) Has such rolling-stock been maintained in good and efficient order and condition during the three years between August, one thousand nine hundred and thirteen, and July, one thousand nine hundred and sixteen?
- (3.) Has proper provision been made for the upkeep and renewal of the rolling-stock?
- (4.) Has the condition of carriage and wagon springs at any time been inefficient?
- (5.) Is it correct, as has been alleged, that where broken springs have been found under carriages two such springs have been put into one instead of being replaced by one sound carriage-spring?
- (6.) Has the safety of the public been adversely affected at any time during the three years preceding July, one thousand nine hundred and sixteen, by the condition of the underframes and running-gear of the carriages and wagons?
- (7.) Has any Inspector or other officer having charge of rolling-stock, or responsible for its condition, at any time during the three years aforesaid reported adversely on the condition and upkeep of the rolling-stock, or notified any of his superiors that he declined to carry the burden of his responsibilities by reason of the condition of the rolling-stock? If so, to whom was such report or notification given, and on what date?
- (8.) Is the allegation that has been made, "that the undergear of coaches and wagons is wearing out, and that there has not been a sufficient supply of spares available during the three years specified," justified?
- (9.) Is the allegation that has been made that the condition of rolling-stock at present existing is due to inefficiency, want of thought, and neglect of public interests on the part of the responsible officers of the Department justified?

we have the honour to report—

That we entered upon and have completed the Commission entrusted to us.

That, in execution of the said Commission, we sat to hear evidence at Auckland on the 5th, 6th, and 7th of February; at Wanganui on the 12th and 13th of February; at Wellington on the 19th and 20th of February; at Dunedin on the 7th of March; and at Christchurch on the 9th, 10th, and 12th of March, 1917.

That these sittings were duly advertised in the local newspapers, and persons desirous of giving evidence were, by advertisement, invited to attend. No person responded to this invitation.

CLASSIFICATION OF WITNESSES.

At these sittings seventy witnesses were examined, namely:—

Messrs. W. A. Veitch and T. M. Wilford, members of Parliament:

The General Manager of the New Zealand Railways:

The Chief Mechanical Engineer of the New Zealand Railways:

A. L. Beattie, Esq., former Chief Mechanical Engineer of the New Zealand Railways;

The Assistant Chief Mechanical Engineer, New Zealand Railways:

The District Engineer of Railways, Auckland:

The Locomotive Engineers for the Auckland, Wellington, Westland, and Hurunui-Bluff Sections:

The Relieving Locomotive Engineer attached to the Chief Mechanical Engineer's Office, Wellington:

The Workshop Managers at Newmarket, East Town, Petone, Hillside, and Addington:

One Westinghouse-brake Engineer :

Six Car and Wagon Inspectors; eight Workshop Foremen; one Foreman Carpenter; one Foreman Painter; two Depot Chargemen; one Westinghouse-brake Inspector; one leading painter; two Westinghouse-brake fitters; nine lifters; and twenty-one train-examiners.

Messrs. Veitch and Wilford, members of Parliament, appeared at the invitation of the Commission.

Thirty-six witnesses were called by counsel representing the New Zealand Government Railways. Thirty-four witnesses were called by the Commission.

EXAMINATION OF ROLLING-STOCK.

The Commission examined approximately—

- 500 vehicles at Auckland, on the 5th and 7th of February :
- 100 vehicles at Helensville and way stations, on the 8th of February :
- 200 vehicles at Frankton Junction, on the 9th of February :
- 20 vehicles at Marton Junction, on the 10th of February :
- 80 vehicles at Wanganui, on the 10th and 14th of February :
- 160 vehicles at Palmerston North, on the 15th of February :
- 100 vehicles at Napier, on the 16th of February :
- 230 vehicles at Wellington, on the 21st of February :
- 25 vehicles at Petone, on the 22nd of February :
- 55 vehicles at Picton, on the 23rd of February :
- 70 vehicles at Blenheim, on the 24th of February :
- 65 vehicles at Nelson, on the 24th of February :
- 6 vehicles at Glenhope, on the 25th of February :
- 160 vehicles at Westport, on the 26th of February :
- 15 vehicles at Reefton, on the 27th of February :
- 300 vehicles at Greymouth, on the 28th of February :
- 330 vehicles at Lyttelton, on the 27th of February :
- 540 vehicles at Christchurch, on the 28th of February and 12th of March :
- 460 vehicles at Dunedin, on the 3rd of March :
- 520 vehicles at Invercargill, on the 5th and 6th of March :
- 70 vehicles at Bluff, on the 5th of March :
- 200 vehicles at Timaru, on the 8th of March :
- 70 vehicles at Addington, on the 12th of March :

The total number of vehicles examined was—

- Wagons : 3,762, or 17·45 per cent. of the whole wagon-stock of the New Zealand Government railways.
- Carriages : 429, or 29·55 per cent. of the whole carriage-stock of the New Zealand Government railways.
- Brake-vans : 84, or 19·09 per cent. of the whole brake-van stock of the New Zealand Government railways.
- Total : 4,275, or 18·23 per cent. of the whole rolling-stock of the New Zealand Government railways.

INSPECTION OF REPAIRING AND LIFTING FACILITIES.

The Commission inspected the repairing and lifting facilities existing at Newmarket, on the 6th of February; Auckland, on the 7th of February; Frankton Junction, on the 9th of February; East Town, on the 13th of February; Wanganui, on the 14th of February; Palmerston North, on the 15th of February; Napier, on the 16th of February; Wellington, on the 21st of February; Petone, on the 22nd of February; Picton, on the 23rd of February; Nelson, on the 24th of February; Westport, on the 26th of February; Greymouth, on the 28th of February; Hillside, on the 3rd of March; Invercargill, on the 6th of March; Dunedin, on the 7th of March; Christchurch, on the 12th of March; Addington, on the 14th of March.

EXPERIMENTAL WORK.

The Commission carried out experiments on draw-gear and springs.

REVIEW OF PROCEEDINGS.

The Commission opened its proceedings at Auckland on the 5th of February, 1917. Counsel appeared on behalf of the Railway Department, and in his opening address directed the attention of the Commission to remarks made in Parliament, and reported in *Hansard* of the 7th of July, 26th of July, and 4th of August, 1916, more especially to *Hansard* of the 10th July, page 599, when—

Mr. WILFORD asked the Minister of Railways, without notice, whether his attention had recently been called to the condition of the rolling-stock on the New Zealand railways at the present time, and whether there was a shortage of the necessary equipment for renewals in the Stores Department, and whether it was a fact that where broken springs had been found under carriages two springs were put into one, as there were not sufficient springs available.

To a statement of Mr. Veitch (*Hansard* of 26th of July, 1916, page 437)—

I do know that at least one instruction has been issued by the Locomotive Department to the effect that broken springs may be duplicated and put into all vehicles, instead of replacing those broken springs with new, good, serviceable springs. . . . As a matter of fact, the packing of draw-bars with pieces of old broken springs, instead of holding them up in position with new springs, involves the whole draw-gear of a train in excessive strain, which is quite unnecessary and which will ultimately land the Minister in very great expense. . . . A broken spring is no spring at all; practically, it is a piece of solid metal, and when the strain comes upon it there is no spring to relieve the strain, and the draw-gear has to take the whole strain at once, as a solid blow. It is the difference between laying a hammer on a piece of glass and dropping it on with a blow. That is a clear indication of the direction in which the policy of the Department is going. Any one who is not a railway man at all, but who will keep his eyes open when travelling round the Railways Department, will see that the painting of vehicles is considerably behindhand. Will the Minister deny the matter of expediting the painting in a somewhat slipshop fashion in order to overhaul the backward condition of painting?

Also a statement of Mr. Veitch (*Hansard* of 4th August, 1916, page 790)—

Then we are told two parts of a broken spring are as good as an entire spring. These are coil springs, which while unbroken will remain in position and do their work. The distance between the coils of the spring so broken is just about the same as the thickness of the spring, with the result that every jerk brings one half of the spring into the other, and it thus becomes a solid block, leaving several inches of slack connection between each of the vehicles of the train. Given a train with two draw-bars on each vehicle, and a hundred vehicles, you have two hundred draw-bars, in each of which the spring is broken into two parts—as will be the case if the present policy is continued long enough. There will be an extra slackness of 6 in. on each vehicle, and so it will give an extra length of train of 600 in., making an enormous difference. The Department says that the spring is used as a shock-absorber. If it is necessary to absorb the shock the spring should be kept there, and in a proper condition. If it is not necessary to absorb the shock then the attaching of the spring to the draw-gear in the first instance was a foolish waste of time and money. It shows also quite clearly that the new General Manager is not maintaining the rolling-stock in the high state of efficiency in which it was handed over to him. The draw-gear is most important, and the amount of strain that is put upon every part of the entire draw-gear of the train is enormously increased if these springs are not maintained in their proper condition, not only because there is a great deal of extra length in the train, but because the shock-absorber fails to absorb the shock; and so every part of the train is put to an enormous strain, which will eventually mean a considerable increase in the cost of maintenance and repairs to the rolling-stock. It is not worth while going further into this question, excepting to reply to the statement that the strain is only brought upon a vehicle in starting and stopping. It should be the policy of the Department to see that the strain is minimized at all times, whether starting or stopping. Practical men know that the strain is not limited to when the train is being started and stopped, because right through the journey from time to time in the variations of grade upon the track there are strains upon the draw-gear. I have drawn attention to this particular topic in detail to show the Minister that the departmental report is certainly not the last word on this or any other question; and, as I have already stated, the very fact that I have been able to prove that in connection with the draw-gear springs alone the policy has been not to maintain the rolling-stock in as high a state of efficiency as previously.

To a speech of Mr. Wilford (*Hansard* of 4th of August, 1916, page 791)—

Now, I have had it stated to me by a man who was himself concerned with that rolling-stock that he declined to carry the burden of responsibility on his shoulders, and that he made his representation to me for that reason, and asked me to pass it along. I went to the Minister of Railways and told him privately that I had been informed of the condition of some of the railway rolling-stock of this country, and, as I did not intend to take the responsibility, I asked him to have proper inquiry made by some one outside the Railway service in order to see who should bear the burden of responsibility, if responsibility there was. The Minister has had inquiries made and has carried out his promise thoroughly, but these inquiries do not satisfy me, because they are from a prejudiced source. Let us, for example, take it that some other Department had to deal with a question as to the inefficacy of its methods of carrying on its departmental work, would the Minister in charge of the Department expect to satisfy the country and the House if he were to ask the men who were claimed to be wanting in their attention to their duties to report on themselves as to the amount of attention they paid to their duties? Obviously, such a position would be absurd. If the Commissioner of Police had complaints made to him by outside people that his sergeants did not do their duty, would the Commissioner of Police be satisfied with reports from the sergeants concerned? And if the sergeants wrote back to the Commissioner and said they had done their duty, would that be an end of the matter as far as that Department was concerned? In my opinion, that is not the way to settle the matter. I hope it can be found that there are no grounds for one's fears, but one of the gentlemen who made representations to me on the point has been known to me for twenty-seven years. He has held good positions in this country, though in the Railway Department, and, as he said to me, "Mr. Wilford, even if I have to go before a Committee of Parliament and give my evidence I am prepared to do so. You can call on me if you want to, and if you get an answer from the Minister stating that no such thing exists I will come to your aid, because I have only a few more years to go as far as my superannuation is concerned, and I am prepared to take any risk there is." He told me seriously and quietly that he would be ready to come forward and prove his statement. That is why I brought the matter up.

EVIDENCE.

Mr. W. A. Veitch, M.P.

Mr. Veitch appeared at the invitation of the Commission. In his statement he claimed that the remarks in connection with rolling-stock made by him in Parliament were not assertions, but partook of the nature of questions. The Commission is unable to agree with this view.

Mr. Veitch stated to the Commission that he had been impressed with the appearance of carriages and wagons, and was of opinion that the painting had not been kept up as it should have been, or as was formerly done; that he noticed side-play in axle-boxes and brakes, and that axle-boxes had been lined up. He did not approve of the latter practice. He considered that there was evidence of extreme economy in the matter of maintenance of railway stock.

He objected to the use of pieced draw-bar springs, and considered that pieced springs were more likely to break than whole springs, and that pieced springs were also less elastic. He took exception to the use of pieced springs even in a train of wagons, regarding them as much less efficient than whole springs, but admitted that if his speech in the House suggested that a pieced spring became one solid block this was not what he intended to convey.

He admitted that he was in error in making a statement in the House that instructions had been issued to put pieced springs in *all* vehicles.

He considered that he had seen sufficient to justify a careful investigation by some impartial and responsible individual.

After a demonstration by the Chairman of the functions of a continuous draw-bar, Mr. Veitch agreed that he was under a misapprehension when he made a statement to the House that it was possible that broken draw-bar springs might result in an addition of 600 in. to the length of a train.

He considered a practical inspection of the rolling-stock by the Commission would be of far greater value for ascertaining its true condition than the hearing of evidence and representations of counsel.

Mr. Veitch stated that there were no witnesses whom he desired to be called before the Commission.

Mr. T. M. Wilford, M.P.

Mr. Wilford appeared at the invitation of the Commission.

He disclaimed any technical knowledge of rolling-stock and knowledge of any difference between bearing and draw-bar springs.

He considered that the statements of Messrs. Bargh, Kydd, Valentine, and Mackley, in parliamentary paper D.-6, proved that broken springs had been used, and that there was a shortage of draw-bar springs.

Mr. Wilford declined to name the person whose information he referred to in Parliament, and stated that the man who told him the story had, he believed, already given evidence, and "to save his own skin told a different yarn." He desired to call no witnesses, but relied on the statements contained in parliamentary paper D.-6.

Evidence as to the General Condition of the Rolling-stock.

All the evidence given before the Commission is distinct on the point that during the years 1913-17 the whole of the rolling-stock has been maintained in good, safe-running order. The great majority of witnesses considered the present condition to be superior to that of by-gone years: this is practically the overwhelming opinion of the officers and men who appeared before the Commission.

The evidence also shows that during the period 1913-17 many improvements have been introduced calculated to increase the safety and durability and diminish the cost of upkeep of the rolling-stock. These improvements have consisted in the fitting of standard axle-boxes with broad-bearing horn-plates, lead-lined brasses, and waste-packing in lieu of spring pads; the fitting of grab-irons and steps on wagons, and higher side gates on cars; the supplying of heavier axles to, and proportionately increasing the carrying-capacity of, wagons; the removal of the Pintsch gas-cylinders from below the cars, and the substitution of small cylinders in a safer position within the framing of the car.

Evidence was given that the Westinghouse brake has been maintained in the highest state of efficiency.

Evidence regarding the Piecing of Springs.

All witnesses affirm that the piecing of *bearing-springs* has never been practised.

The evidence shows that vehicles under which broken bearing-springs are found are immediately removed from traffic; that broken bearing-springs are rarely found; that pieced draw-bar springs have been used in wagons, but not in carriages. (There is a single exception to this—the Wanganui district—where it appears that pieced springs have been used without instructions in the case of a few cars.) That the practice of using pieced springs in wagons has existed for many years on the New Zealand railways, but has recently been considerably extended. That pieced draw-bar springs have for many years been used in times of shortage of spares, and their use on the ground of economy was officially considered and approved some twenty years ago. (See evidence of A. L. Beattie, p. 152, and G. A. Pearson, p. 95.) The practice was again directed by Mr. G. E. Richardson's circular of 10th of June, 1914.

All witnesses are emphatic that the use of pieced draw-bar springs introduces no element of danger. Most consider that pieced springs are efficient and durable.

Evidence regarding Painting.

The evidence with regard to painting was to the effect that the former practice had been continued during the period 1913-17.

Evidence regarding Supply of Stores.

All witnesses agree in stating that during the period covered by the inquiry there has been no difficulty in procuring material or spares other than draw-bar springs, of which there was a temporary scarcity in portions of 1914 and 1915.

The evidence also shows that a shortage of draw-bar springs has existed on occasions before 1913.

It is apparent from the evidence that the breakages of draw-bar springs is great, and has increased of late years; this is attributed by witnesses to increased roughness in shunting.

Evidence regarding Accommodation for Repairs.

There is evidence to the effect that the accommodation for car and wagon lifting at Wellington, Palmerston North, and Dunedin is insufficient, and also that the Department has had these matters under consideration. (See evidence of H. H. Jackson, pp. 163 and 165, and E. H. Hiley, p. 170.)

The accommodation provided for the inspection of and repairs to the Westinghouse brake appears to be ample.

REVIEW OF INSPECTION.

After the inspection of some eight hundred vehicles in the Auckland District, it became evident that improved facilities for inspection and the keeping of a systematic record were desirable. A mirror was therefore contrived which enabled the condition of the hidden undergear to be readily inspected, and forms were got out on which were noted the condition of the draw-bar springs, draw-gear, bearing-springs, axle-boxes, underframes, painting, brakes and wheels, tires and axles of each vehicle examined. (See Appendix I.)

Detailed particulars of these inspections are given in Appendix II.

The general result is that the Commission has classified as defective—

In the wagons: 9·2 per cent. of the draw-bar springs; 0·33 of 1 per cent. of the draw-gear sets; 0·03 of 1 per cent. of the sets of bearing-springs; 1·22 per cent. of the sets of axle-boxes; 0·3 of 1 per cent. of the underframes; 1·91 per cent. of the painting; 0·06 of 1 per cent. of the brake-gear; none of the wheels, tires, and axles.

In the carriages: 1·39 per cent. of the draw-bar springs; none of the draw-gear sets; none of the sets of bearing-springs; none of the sets of axle-boxes; none of the underframes; 1·95 per cent. of the painting; none of the brake-gear; none of the wheels, tires, and axles.

In the brake-vans: 4·05 per cent. of the draw-bar springs; none of draw-gear sets; none of the sets of bearing-springs; one axle-box; none of the underframes; 1·35 per cent. of the painting; none of the brake-gear; none of the wheels, tires, and axles.

No vehicle was discovered in a condition unsafe to run.

The Commission regards the result of its inspection as highly satisfactory.

The uniformly excellent condition of the wheels, tires, and axles, on which the safety of the train so largely depends, was remarkable.

The Westinghouse brake was found to be exceedingly well maintained.

Painting.

The method of painting introduced in 1911 has been adhered to, and the number of cars painted during the period 1913–17 is normal.

Many cars have a dingy appearance, but on removal of the dirt the painting was found to be in good condition.

Wagon-painting appears to have slightly fallen off during the period under consideration.

When ample labour is available the Commission considers that more attention might with advantage be given to the cleaning of cars and painting of iron wagons.

Lined-up Axle-boxes.

The Commission met with several cases of lined-up axle-boxes. It considers the practice allowable, especially when the finally condemned axle-boxes are replaced, as appears to be the practice, by new ones of the more durable standard pattern.

REVIEW OF EXPERIMENTS.

The Commission, with a view to the determination of the value of pieced and other draw-bar springs, conducted various experiments.

At Auckland the experiment was made of violently buffing a wagon fitted at one end with a pieced, and at the other with a whole, draw-bar spring. No difference in the behaviour of the springs could be detected. (See Appendix III.)

Throughout the South Island the Commission travelled in a Class A bogie carriage in which arrangements were made for the observation of the action and measurement of the deflection of the draw-bar springs. This carriage was always placed at the front end of the ordinary train, and runs were made with whole and with pieced springs. No difference in the running of the carriage or in the behaviour of the springs could be discovered. (See Appendix IV.)

Tests at Canterbury College. (Appendix V).

The Commission had various draw-bar springs accurately tested under its observation at the Engineering Laboratories of Canterbury College, with the following results: The maximum resistance of the whole spring, B.P. 4310, was 5·3 tons; that of the pieced spring was 5·1 tons; that of the new type of double-coil spring, B.P. Z6540, was 6·6 tons. The deflections corresponding to these loads were 2·67, 2·20, and 1·66 inches respectively. The works done in compressing the springs to these extents were—For the whole spring, 7·08 in. tons; for the pieced spring, 5·61 in. tons; for the new-type double-coil spring, 5·48 in. tons.

It would appear from these experiments that the pieced spring, though inferior, is not greatly inferior to the whole spring.

Further experiments conducted at Addington took the form of subjecting springs to the blows of a steam-hammer. Under this test of rough treatment the pieced springs proved equal to the whole springs. (See Appendix VI.)

The Commission also had a Class L wagon buffing and draw-bar subjected to tests of progressive loading at Canterbury College. Two tests were made, the draw-hook failing in each case, one at 25 tons load and the other at 33 tons load. (See Appendix VII.)

The results of these tests, together with the large number of breakages of draw-bar springs, appear to indicate that an investigation is desirable as to the suitability of the existing type of draw-gear for the greatly increased weight of modern trains. It is understood that the Department have already taken some steps in this direction.

MAY IT PLEASE YOUR EXCELLENCY,—

Regarding the matters specifically referred to the Commission, we find—

1. That the rolling-stock on the New Zealand Government railways was in July, one thousand nine hundred and sixteen, in good and safe-running order.

2. That such rolling-stock has been maintained in good and efficient order and condition during the three years between August, one thousand nine hundred and thirteen, and July, one thousand nine hundred and sixteen.

3. That, generally, proper provision has been made for the upkeep and renewal of the rolling-stock, but that the facilities for lifting at station-yards are not sufficient for dealing with the present volume of traffic; that this fact has been recognized by the responsible officers of the Department, but execution of the necessary works has been delayed by war conditions.

4. That the condition of carriage and wagon springs has not at any time been inefficient.

5. That it is not correct, as it has been alleged, that where broken springs have been found under carriages two such springs have been put into one instead of being replaced by one sound carriage-spring. That no broken bearing-springs have been pieced; that such have been immediately removed and new springs substituted. That it has not been the practice to piece carriage draw-bar springs. That pieced draw-bar springs have been used to the extent of about 10 per cent. of the total number in the wagon stock. That this practice is justifiable, and introduces no element of danger.

6. That the safety of the public has not been adversely affected at any time during the three years preceding July, one thousand nine hundred and sixteen, by the condition of underframes and running-gear on the carriages and wagons. That the condition of this gear has been exceedingly good.

7. That no Inspector or other officer having charge of rolling-stock, or responsible for its condition, has at any time during the three years aforesaid reported adversely on the condition and upkeep of the rolling-stock, or notified any of his superiors that he declined to carry the burden of his responsibilities by reason of the condition of the rolling-stock.

8. That the allegation that has been made that the undergear of coaches and wagons is wearing out, and that there has not been a sufficient supply of spares available during the three years specified, is not justified. That there has been a temporary shortage of draw-bar springs due to the delay in arrival of shipments during 1914-15.

9. That there has been no inefficiency, want of thought, or neglect of public interests on the part of the responsible officers of the Department; that the allegation to the contrary is unfounded.

The Commission has been impressed by the high standard of the personnel, officers and men, with which it has come in contact, and by the precautions taken to maintain the rolling-stock in a condition of safety, which is properly regarded as of paramount importance.

The inspection arrangements are thorough, and the train lifters and examiners are a remarkably intelligent and trustworthy body of men. The result of this care is manifest in the increasing train-mileage run per derailment, due to causes other than slips and obstructions. This has increased from 530,366 train-miles in 1912-13 to 938,342 train-miles in 1914-15 and 1,169,565 train-miles in 1915-16.

Basing its opinion largely on personal inspection and investigation, the Commission considers that the rolling-stock of the New Zealand railways is being maintained in an efficient and thoroughly safe condition.

The Commission has the honour to be,

Your Excellency's most obedient servants,

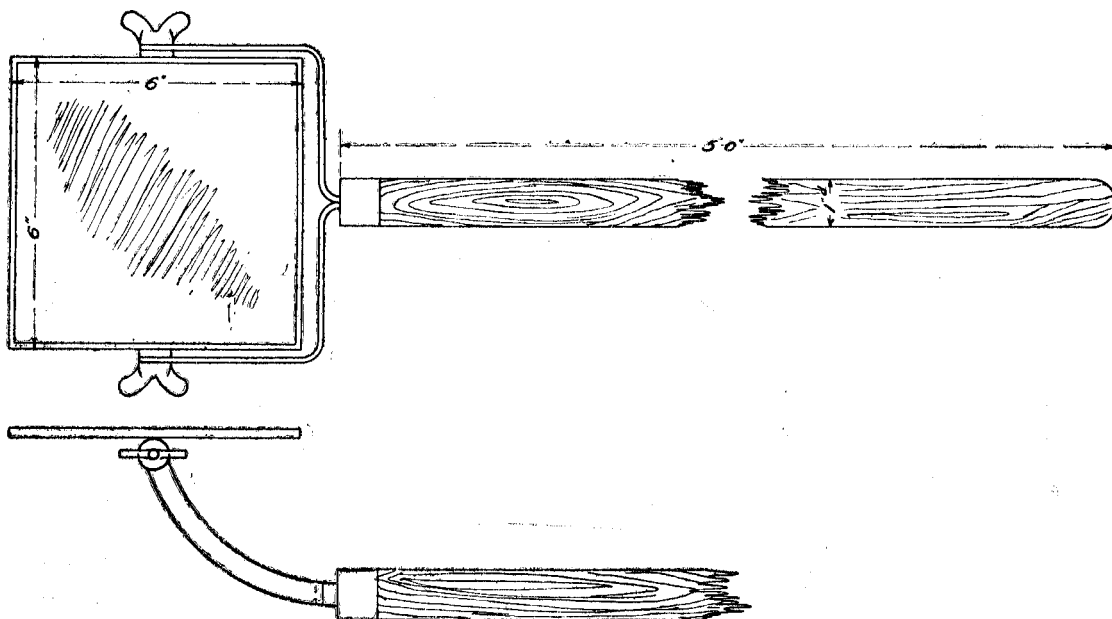
ROBT. J. SCOTT, M.Inst.C.E., M.Inst.M.E.,
Fellow A.Inst.E.E.,
Chairman.

J. MARCHBANKS, M.Inst.C.E.
J. P. MAXWELL, M.Inst.C.E.

APPENDICES.

APPENDIX I.—MIRROR.

(Used by Commission for examination of undergear of rolling stock.) (See page 9.)



APPENDIX II.—RETURNS OF ROLLING-STOCK INSPECTED FOR EACH SECTION.

(RETURNS PREPARED BY SECRETARY TO COMMISSION.)

GRAND TOTAL OF VEHICLES INSPECTED.

(See page 9.)

Total Number of Vehicles.	Condition.	Draw-bar Springs, Individually.	Per-centage.	Draw-gear Sets.	Per-centage.	Bearing-spring Sets.	Per-centage.	Axle-boxes, Sets.	Per-centage.	Under-frames.	Per-centage.	Painting.	Per-centage.	Brakes.	Per-centage.	Wheels, Tires, and Axles.	Per-centage.
Wagons, 3,042 (equal 6,672 draw-bar springs)	Good	5,336	79.98	3,031	99.64	3,040	99.94	2,993	98.39	3,023	99.37	2,841	93.39	3,040	99.94	3,042	100
	Indifferent	6	0.09	1	0.03	1	0.03	12	0.39	10	0.33	143	4.70	..	..	..	..
	Pieced	716	10.73	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Defective	614	9.20	10	0.33	1	0.03	37	1.22	9	0.30	58	1.91	2	0.06	..	..
Cars, 359 (equal 718 draw-bar springs)	Good	682	94.99	355	98.89	359	100	359	100	359	100	325	90.53	359	100	359	100
	Indifferent	..	..	4	1.11	..	..	..	..	..	..	27	7.52	..	..	..	..
	Pieced	26	3.62	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Defective	10	1.39	..	..	..	..	..	..	..	..	7	1.95	..	..	..	..
Brake-vans, 74 (equal 148 draw-bar springs)	Good	135	91.22	73	98.65	74	100	73	98.65	74	100	67	90.54	74	100	74	100
	Indifferent	..	..	1	1.35	..	..	..	..	..	..	6	8.11	..	..	..	..
	Pieced	7	4.73	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Defective	6	4.05	..	..	..	..	1	1.35	..	..	1	1.35	..	..	..	..

TOTAL VEHICLES INSPECTED.

North Island Main Line and Branches.

Total Number of Vehicles.	Condition.	Draw-bar Springs, Individually.	Per-centage.	Draw-gear Sets.	Per-centage.	Bearing-spring Sets.	Per-centage.	Axle-boxes, Sets.	Per-centage.	Under-frames.	Per-centage.	Painting.	Per-centage.	Brakes.	Per-centage.	Wheels, Tires, and Axles.	Per-centage.
Wagons, 484 (equal 968 draw-bar springs)	Good	741	76.55	482	99.60	483	99.79	469	96.90	470	97.10	444	91.74	482	99.59	484	100
	Indifferent	6	0.62	..	..	1	0.21	4	0.83	7	1.45	26	5.37	..	..	..	..
	Pieced	92	9.50	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Defective	129	13.33	2	0.40	..	..	11	2.27	7	1.45	14	2.89	2	0.41	..	..
Cars, 112 (equal 224 draw-bar springs)	Good	206	91.96	108	96.43	112	100	112	100	112	100	96	85.71	112	100	112	100
	Indifferent	..	..	4	3.57	..	..	..	..	..	..	16	14.29	..	..	..	..
	Pieced	11	4.91	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Defective	7	3.13	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brake-vans, 21 (equal 42 draw-bar springs)	Good	41	97.62	20	95.24	21	100	21	100	21	100	21	100	21	100	21	100
	Indifferent	..	..	1	4.76	..	..	..	..	..	..	..	..	..	..	..	..
	Pieced	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Defective	1	2.38	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Approximately 720 wagons, 70 carriages, and 10 brake-vans were inspected at Auckland, Helensville, and way-stations and Frankton Junction, of which no record kept.

APPENDIX III.—TEST OF PIECED SPRINGS AT AUCKLAND.

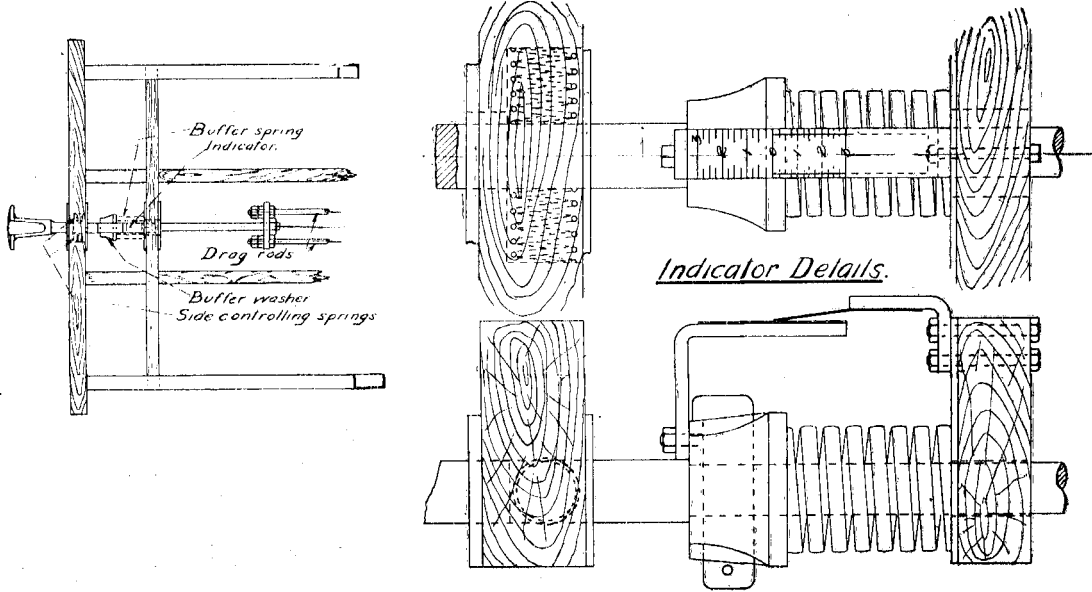
6TH FEBRUARY, 1917.

(See page 10.)

THE following test was carried out: The undercarriage of a 15 ft. wagon, the draw-bar of which had been fitted with a whole spring at one end and a pieced spring at the other, was placed against a W class locomotive with brakes hard on. The lengths of both springs were measured, and trammelled lengths observed. An F class locomotive was then butted violently against the end at which the pieced spring was placed. This operation was repeated twenty times---both pieced and whole springs being each time flattened. There was no apparent difference in behaviour of the springs, and on each being measured the original lengths were found to be maintained; and on the trammels being applied it was found that there was a small increase in length at the pieced-spring end owing to the cross-bearer at this end having slightly deflected. This was due to this end of the wagon being exposed to the heavier shock. The shocks were sufficiently violent to lift the wheels of this end from the rails.

APPENDIX IV.--DRAW-GEAR OF CLASS "A" BOGIE CARRIAGE.

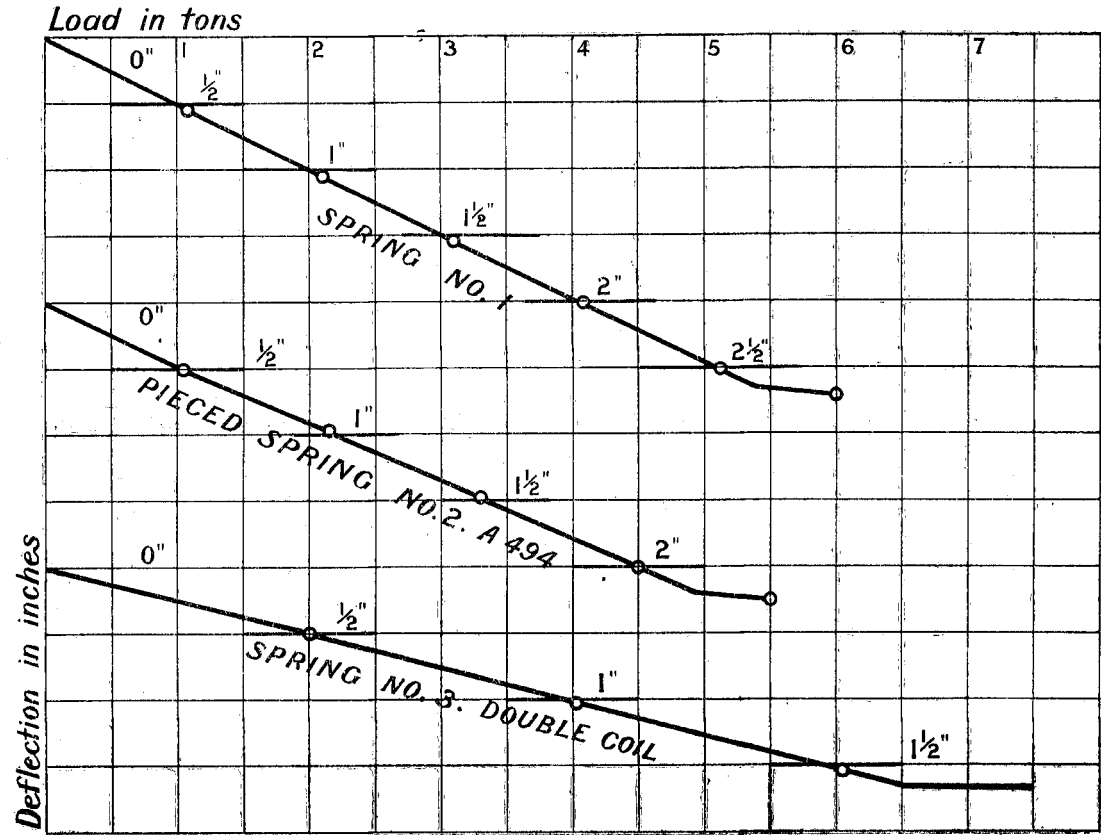
(See page 10.)



APPENDIX V.—TESTS OF DRAW-BAR SPRINGS.

(Carried out at Engineering Laboratory, Canterbury College.) (See page 10.)

CURVES PLOTTED FROM TESTS IN 50-TON TESTING-MACHINE.



APPENDIX V—*continued*.
TESTS OF DRAW-BAR SPRINGS.

	Spring No. 1— Old Standard Draw-bar Spring, Rectangular Section (New).	Spring No. 2—A494, Pieced Spring, Rectangu- lar Section.	Spring No. 3— Double-coil Round-section Spring.	
Length (inches)	7·06	7·08	7·12	7·12 (inner coil).
Outside diameter (inches) ..	5·1	5·1	5·5	3·1 ,,
Number of turns. . . .	7	..	5	8 ,,
Breadth (inches)	1·50	1·48	1·12	0·49 ,,
Thickness (inches)	0·63	0·64	1·12	0·49 ,,

COMPRESSION TESTS IN 50-TON TESTING-MACHINE.

Spring No. 1.				Spring No. 2—A494.				Spring No. 3.			
Length of Spring.	Deflection.	Load.	Remarks.	Length of Spring.	Deflection.	Load.	Remarks.	Length of Spring.	Deflection.	Load.	Remarks.
In.	In.	Tons.		In.	In.	Tons.		In.	In.	Tons.	
7·06	0	0	..	7·08	0	0	..	7·12	0	0	..
6·55	0·51	1·062	..	6·57	0·51	1·040	..	6·62	0·50	1·994	..
6·05	1·01	2·113	..	6·09	0·99	2·128	..	6·10	1·02	4·016	..
5·55	1·51	3·093	..	5·58	1·50	3·288	..	5·60	1·52	6·013	..
5·05	2·01	4·081	..	5·06	2·02	4·503	..	5·44	1·68	9·114	Spring com- pressed solid.
4·54	2·52	5·096	..	4·82	2·26	5·532	Spring com- pressed solid	..	..	..	..
4·36	2·70	6·000	Spring com- pressed solid	..	..	..	..	..	..	..	..
7·06	0	0	No perma- nent set	7·08	0	0	No perma- nent set	7·12	0	0	No perma- nent set.
Deflection when just solid .. 2·67 inches.				Deflection when just solid .. 2·20 inches.				Deflection when just solid .. 1·66 inches.			
Load to com- press to solid 5·3 tons.				Load to com- press to solid 5·10 tons.				Load to com- press to solid 6·6 tons.			
Work of com- pression .. 7·08 inch-tons.				Work of com- pression .. 5·61 inch-tons.				Work of com- pression .. 5·48 inch-tons.			

These results are taken from autographic recorder diagrams.

APPENDIX VI.—TESTS OF SPRINGS.

(See page 10.)

TESTS OF VARIOUS SPRINGS MADE UNDER A STEAM-HAMMER AT ADDINGTON ON THE 14TH MARCH, 1917.

THE springs were subjected to the following tests :—

1. The length of the spring was measured, and it then received twenty light blows under the hammer so as to compress it approximately one-half its range. The length was again measured and the set obtained.

2. The spring received a further twenty blows, sufficient to bring the coils together solid, the length being again measured and the further set obtained.

3—D. 4.

APPENDIX VI—continued.

3. The spring received another twenty heavy blows, each blow bringing the coils solidly together, after which the spring was measured and the total set obtained.

Spring.	Test.	Length Unloaded.	Length after Test.	Set.
		Inches.	Inches.	Inches.
No. 1, standard draw-bar spring, B.P. No. 4310, 1½ in. by ⅝ in.	1	7⅛	6⅞	¼
	2	..	6⅞	¼
	3	..	6¾	⅜
No. 2, American double spiral, outer coil 1⅝ in., inner coil ½ in. B.P. No. Z6540	1	7	6⅞	⅛
	2	..	6¾	¼
	3	..	6⅝	⅜
No. 3, standard draw-bar spring, pieced	1	7½	7¼	¼
	2	..	7¼	¼
	3	..	7⅛	⅜
No. 4, standard draw-bar spring, pieced	1	7¼ (full)	7¼ (bare)	⅛
	2	..	7⅜⅙ (full)	⅛⅙ (full)
	3	..	7⅜⅙ (full)	⅛⅙ (full)
No. 5, American double spiral, B.P. No. Z6540 ..	1	7	6¾	⅜
	2	..	6¾	¼
	3	..	6⅝	⅜

APPENDIX VII.—TEST OF CLASS “L” WAGON DRAW-BAR.

(See page 10.)

(Carried out at Engineering Laboratory, Canterbury College).

Test No. 1.—Draw-hook No. 1 : Breaking-load, 25·00 tons.

Test No. 2.—Draw-hook No. 2 : Breaking-load, 33·01 tons.

Draw-hook failed in each case

MINUTES OF PROCEEDINGS.

SATURDAY, 3RD FEBRUARY, 1917.

Two members of the Commission, Messrs. James Marchbanks and J. P. Maxwell, left Wellington by 1.10 p.m. express for Auckland, where on Sunday morning they joined the Chairman, Professor R. J. Scott, who had previously proceeded there.

MONDAY, 5TH FEBRUARY, 1917.

The Commission met in the Lands Office, Customs Buildings, Auckland, at 10 a.m.

The Chairman opened proceedings, and called on the secretary to read the warrant.

Mr. M. Myers intimated that he represented the Railway Department, and addressed the Commission, calling the following witnesses, who were examined on oath: Francis Taylor Murison, Locomotive Engineer, Newmarket; David Arthur Moore, Car and Wagon Inspector, Auckland; John Francis McCarthy, Workshop Manager, Newmarket; Henry Francis Holder, Workshop Foreman, Car-shop, Newmarket; James Forrester Mackley, Brake Inspector; Thomas Lloyd Mills, lifter, Auckland; Henry William Bright, train-examiner, Auckland.

The Commission adjourned at 4.20 p.m., for the purpose of inspection of rolling-stock, till 10 a.m. next day.

TUESDAY, 6TH FEBRUARY, 1917.

The Commission resumed at 10 a.m.

The following witnesses were called by the Commission, and examined on oath: Francis Evans Pepperell, leading lifter, Frankton Junction; Daniel Thomas McIntosh, District Railway Engineer, Auckland; Clifford James Dick, train-examiner, Morrinsville; Thomas Prescott, leading lifter, Auckland.

The Commission proceeded to Newmarket Workshops at 2 p.m. for inspection of rolling-stock and for purpose of carrying out tests.

Test as per Appendix III was carried out.

WEDNESDAY, 7TH FEBRUARY, 1917.

The Commission resumed at 10 a.m.

The following witness was called by the Commission, and examined on oath: James Rodger-son, Workshop Foreman, Whangarei.

The taking of evidence concluded at 10.30 a.m., and the Commission proceeded to inspect rolling-stock in the yard.

THURSDAY, 8TH FEBRUARY, 1917.

The Commission left Auckland station by train at 8.20 a.m., proceeded to Helensville, where stock was inspected, then to Kaukapakapa, where further inspection of stock was made, and returned to Auckland, arriving at 4.42 p.m.

FRIDAY, 9TH FEBRUARY, 1917.

The Commission, accompanied by Mr. H. H. Jackson (Chief Mechanical Engineer) and Mr. F. T. Murison (Locomotive Engineer at Newmarket), left by the 10 a.m. train for Hamilton. During the afternoon the Commission made a thorough inspection of a large number of carriages and wagons standing at Frankton Junction.

A mirror, designed for the inspection of undergear and constructed at Newmarket Railway Workshops to the Commission's requirements, was here used for the first time. The work of inspection was thereby greatly facilitated.

The Commission left Frankton Junction by train at 11.50 p.m. for Marton, arriving at Marton at 10.5 a.m. on Saturday, the 10th February.

SATURDAY, 10TH FEBRUARY, 1917.

An inspection of the rolling-stock standing at Marton was made, the Commission leaving at 10.45 a.m. for Wanganui, arriving there at 1.10 p.m.

An inspection of some of the rolling-stock in the Wanganui Station yard was made during the afternoon.

MONDAY, 12TH FEBRUARY, 1917.

The Commission met in the Railway Social Hall, Guyton Street, Wanganui, at 10 a.m.

The Chairman opened proceedings, and called on the secretary to read the warrant.

Mr. Myers, counsel for the Railway Department, handed in a list of the rolling-stock repairing staff on the Wellington-Taumarunui—New Plymouth—Napier District.

John Valentine, Car and Wagon Inspector at Wanganui, was called by the Railway Department, and examined on oath.

Counsel for the Department requested the Commission to subpoena Mr. W. A. Veitch, M.P., to appear and give evidence, and this was arranged.

A copy of instruction from the Locomotive Engineer at Petone to the Workshop Managers and Car and Wagon Inspectors, dated Petone, 10th June, 1914, authorizing the use of suitable pieces of draw-bar springs on vehicles, except cars, was put in; also a copy of instruction from the Car and Wagon Inspector at Wanganui, dated Wanganui, 16th June, 1914, to train-examiners and lifters, to the same effect.

William Kydd, Workshop Manager at East Town, and Robert Withington Turner, Foreman Carpenter at East Town, were called by the Railway Department, and examined on oath.

The following witnesses were called by the Commission, and examined on oath: William Joseph Piper, train-examiner, Wanganui; William Taylor Landells, Westinghouse-brake fitter, Wanganui; Ernest Nepaul James, relieving lifter between Taumarunui and New Plymouth.

The Commission adjourned at 4.15 p.m.

TUESDAY, 13TH FEBRUARY, 1917.

The Commission resumed at 10 a.m.

William Andrew Veitch, M.P. for Wanganui, attended before the Commission, and submitted himself to examination on oath.

The following witnesses were called by the Commission, and examined on oath: William Sidney Murrow, train-examiner, Marton; William Richard Shaw, train-examiner, Hawera; Sidney Loft, Westinghouse-brake fitter, New Plymouth; Frederick Joseph Rogers, train-examiner, New Plymouth.

The Commission adjourned at 12.45 p.m. to inspect East Town Workshops in the afternoon.

The Commission left Wanganui at 2.15 p.m. for East Town, and inspected the repairing-facilities at East Town Workshops, returning to Wanganui at 5 p.m.

WEDNESDAY, 14TH FEBRUARY, 1917.

The Commission met at 9.30 a.m. at the Wanganui Station, and made an inspection of the wagon and car stock in the station-yard.

The Commission left by train at 12.3 p.m. for Palmerston North, arriving there at 3.16 p.m.

THURSDAY, 15TH FEBRUARY, 1917.

The Commission met in the station-yard at Palmerston North at 9.30 a.m., and proceeded to inspect carriage and wagon stock, adjourning at 12.15 p.m. for lunch. They left Palmerston North for Napier by train at 1.1 p.m., arriving Napier at 6.12 p.m.

FRIDAY, 16TH FEBRUARY, 1917.

The Commission at 9.30 a.m. proceeded to inspect rolling-stock in the Napier yard. They also visited the Railway Workshops, and inspected repairing-facilities there.

SATURDAY, 17TH FEBRUARY, 1917.

The Commission left Napier by train at 8.45 a.m., arriving Wellington at 5.50 p.m.

MONDAY, 19TH FEBRUARY, 1917.

The Commission met in the Opposition Whips' Room, Parliamentary Buildings, Wellington, at 10 a.m.

The Chairman opened proceedings, and the secretary read warrant.

The Chairman asked for the following returns, which Mr. Myers, on behalf of the Railway Department, agreed to supply:—

Years 1911-12 to 1915-16: List of all derailments of vehicles on running trains, together with the cause as found by the Board of Inquiry.

List of broken axles, 1911-12 to 1915-16.

List of broken tires, 1911-12 to 1915-16.

Issue of all draw-bar springs used in maintenance each year, 1911-12 to 1915-16.

Issue of all bearing-springs used in maintenance each year, 1911-12 to 1915-16.

Issue of all axles used in maintenance each year, 1911-12 to 1915-16.

Issue of all tires used in maintenance each year, 1911-12 to 1915-16.

Stock on date of stocktaking in each year, and also the number of springs on order at that time, 1911-12 to 1915-16.

Stock of cars, vans, and wagons on the North Island main line and branches and the South Island main line and branches, 1911-12 to 1915-16.

Mr. T. M. Wilford, M.P., attended the Commission, and made a statement. He was also examined on oath by Mr. Myers and by the Commission.

Mr. Wilford handed in telegram received from the Minister of Railways and letter from the Minister of Railways *re* setting-up of Commission, also copies of *Railway Review*, dated 7th May, 1915, and 27th August, 1915, containing remits passed by the Amalgamated Society of Railway Servants relating to the use of draw-bar springs in pieces. He asked that the remit as placed before the Department be handed in to the Commission, also the General Manager's letter of reply to the Railway Society, dated 14th September, 1915. Mr. Myers, on behalf of the Railway Department, agreed to have the same before the Commission on resuming after the luncheon adjournment.

The following witnesses were called by the Railway Department, and examined on oath: Ernest Edwin Gillon, Locomotive Engineer, Chief Mechanical Engineer's Office; George Arthur Pearson, Assistant Chief Mechanical Engineer, Wellington.

On resuming at 2.30 p.m. Mr. T. M. Wilford, M.P., attended, and the remit from the Amalgamated Society of Railway Servants was read and handed in, also letter from the General Manager of Railways to the Society, dated 14th September, 1915.

The following witnesses were called by the Railway Department, and examined on oath: George Arthur Pearson, Assistant Chief Mechanical Engineer, Wellington (continued); Richard Edward Robertson, Engineer and Brake Expert, Wellington; William Henry Johnston, Workshop Foreman, Napier; Sidney Percival Evans, Locomotive Engineer, Petone; Charles Thomas Bargh, Workshop Manager, Petone; James Henry Sherwin, Foreman, Car-shop, Petone; Charles Thomas Bargh, Workshop Manager, Petone (recalled); Charles George Kelly, Car and Wagon Inspector, Wellington.

The Commission adjourned at 5 p.m. until 10 a.m. the next day.

TUESDAY, 20TH FEBRUARY, 1917.

The Commission resumed at 10 a.m.

The Chairman intimated that the Commission would sit at Dunedin on the 7th March and at Christchurch on the 9th March, and asked for list of witnesses the Department proposed to call at Dunedin and Christchurch, also a list of the train-examining and lifting staff, South Island.

The Chairman stated that a test would be made with pieced springs in the Engineering Laboratory, Canterbury College, and intimated that representatives from the Railway Department would be welcome at the test.

The Chairman requested that the carriage in which the Commission travel in the South Island be fitted with trap-doors over the springs, and pieced and whole springs fitted with simple sliding indicators attached to draw-bar so that the Commission could ascertain at any time the compression of the springs.

Mr. Myers, on behalf of the Railway Department, handed in the following returns:—

List of cars, brake-vans. and wagons on North Island and South Island main line and branches, 1911-16.

List of broken axles under cars and wagons, 1907-16.

List of broken tires under cars and wagons, 1907-16.

List of draw-bar failures on trains, 1913-16.

The following witnesses were called by the Railway Department, and examined on oath: John Cleland Cherrie, Locomotive Foreman, Whangarei (late Depot Chargeman, Nelson); Henry Archibald, Depot Chargeman, Palmerston North (late Depot Chargeman, Picton); Frederick Arthur Laurie, Workshop Foreman, Petone (late Workshop Foreman, Greymouth).

The Commission adjourned 11 a.m. to 11.30 a.m. out of respect to the memory of the Hon. Sir George McLean.

The following witnesses were called by the Commission, and examined on oath: Henry Sharman, train-examiner, Palmerston North; Albert John Earney, train-examiner, Napier;

Walter Guard Watson, train-examiner, Taihape; Ernest Wilmot Smith, train-examiner, Woodville; Edward Samuel Creelman, train-examiner, Cross Creek; William Seaton, leading lifter, Lambton; Charles Henry Burridge, train-examiner, Lambton; John Zealandia Hobbs, train-examiner, Thorndon.

The following witnesses were recalled by Mr. Myers, on behalf of the Railway Department, and further examined: Henry Archibald, Depot Chargeman, Palmerston North (late Depot Chargeman, Picton); Sidney Percival Evans, Locomotive Engineer, Petone.

The Chairman asked that blue-prints of draw-gears in use on the New Zealand railways, and also of axle-boxes showing bearing-springs, be put in.

The Commission adjourned at 3.15 p.m. for the purpose of inspecting rolling-stock at Lambton, Thorndon, and Petone, and also the repairing-facilities at these places.

The Chairman intimated that the Commission would leave for Picton and Nelson on Friday, 23rd February, 1917. Mr. Maxwell would inspect Picton Section, and Mr. Marchbanks and the Chairman would inspect Nelson, Greymouth, and, if possible, Westport.

WEDNESDAY, 21ST FEBRUARY, 1917.

The Commission met at Lambton Station at 9.30 a.m., and proceeded to inspect rolling-stock in the yards, also the repairing-facilities.

The Commission met at Thorndon Station at 2.30 p.m., and inspected rolling-stock in the yard, also repairing-facilities.

THURSDAY, 22ND FEBRUARY, 1917.

The Commission proceeded to Petone by train, leaving Lambton at 10 a.m., and inspected the workshops, car- and wagon-repairing facilities, and rolling-stock in yards, returning to Wellington at 3.45 p.m.

FRIDAY, 23RD FEBRUARY, 1917.

The Commission left by s.s. "Pateena" for Picton and Nelson. Mr. Maxwell, accompanied by Mr. Pearson, Assistant Chief Mechanical Engineer, Railway Department, disembarked at Picton, and inspected rolling-stock at that place, leaving by train at 6.15 p.m. for Blenheim.

SATURDAY, 24TH FEBRUARY, 1917.

Mr. Maxwell inspected rolling-stock at Blenheim, returning to Wellington by evening's steamer.

The Chairman and Mr. Marchbanks, accompanied by Mr. Jackson, Chief Mechanical Engineer, Railway Department, arrived at Nelson at 9 a.m., and proceeded to inspect rolling-stock at the port and town stations. They also inspected the repairing-facilities at Nelson.

SUNDAY, 25TH FEBRUARY, 1917.

The Nelson party proceeded by motor to Murchison, inspecting rolling-stock at Glenhope.

MONDAY, 26TH FEBRUARY, 1917.

The Chairman and Mr. Marchbanks, accompanied by Mr. Jackson, Chief Mechanical Engineer, continued their journey to Westport. At 2 p.m. they proceeded to inspect rolling-stock and repairing-facilities at Westport.

Mr. Maxwell left Wellington for Lyttelton by ferry-steamer.

TUESDAY, 27TH FEBRUARY, 1917.

The Chairman and Mr. Marchbanks, accompanied by Mr. Jackson, Chief Mechanical Engineer, left Westport for Reefton, where an inspection of rolling-stock was made, leaving by train at 4.20 p.m. and arriving Greymouth 7.35 p.m.

Mr. Maxwell inspected rolling-stock at Lyttelton.

WEDNESDAY, 28TH FEBRUARY, 1917.

The Chairman and Mr. Marchbanks, accompanied by Mr. Jackson, Chief Mechanical Engineer, proceeded at 9 a.m. to inspect vehicles and repairing-facilities at Greymouth. In the afternoon an inspection was made of the workshops.

Mr. Maxwell inspected rolling-stock standing in the Christchurch Station and yard sidings.

THURSDAY, 1ST MARCH, 1917.

The Chairman and Mr. Marchbanks, accompanied by Mr. Jackson, Chief Mechanical Engineer, left Greymouth at 8.40 a.m. for Christchurch, arriving 6.25 p.m.

Mr. Maxwell proceeded to Addington Workshops, where inspection was made.

FRIDAY, 2ND MARCH, 1917.

The Commission left Christchurch for Dunedin by train at 12.5 p.m., arriving Dunedin 9 p.m.

SATURDAY, 3RD MARCH, 1917.

The Commission at 9.30 a.m. proceeded to the Hillside Workshops, where an inspection of the shops and repairing-facilities was made, returning at 1 p.m.

At 2 p.m. the Commission met at the running-sheds, and proceeded to inspect rolling-stock in the goods and passenger yards, adjourning at 4.30 p.m.

MONDAY, 5TH MARCH, 1917.

The Commission left Dunedin by train at 8.30 a.m., arriving Invercargill at 2.12 p.m. The Commission inspected rolling-stock in the Invercargill yards, leaving for Bluff by train at 2.58 p.m., where a further inspection of stock was made. The Commission returned to Invercargill, arriving at 6.5 p.m.

TUESDAY, 6TH MARCH, 1917.

The Commission at 9 a.m. proceeded to inspect the Invercargill Workshops, and also made a further inspection of rolling-stock, leaving for Dunedin by train at 1.25 p.m., arriving 6.38 p.m.

WEDNESDAY, 7TH MARCH, 1917.

The Commission met in the Inquiry Room, Dunedin Station, at 9.30 a.m.

The Chairman opened proceedings, and the secretary read the warrant.

The following witnesses were called by the Railway Department, and examined on oath: Edgar Elliott Carew, Workshops Foreman, Invercargill; Bernard Adolph Wolff, Car and Wagon Inspector, Invercargill; John Carson, Workshops Manager, Hillside; Francis Heading Titchener, Foreman, Car-shop, Hillside; Hugh Wylie, Car and Wagon Inspector, Dunedin; Edgar Elliott Carew, Workshops Foreman, Invercargill (recalled).

The following witnesses were called by the Commission, and examined on oath: Edward McKitterick, train-examiner, Gore; Edward Solomon Toner, leading train-examiner, Invercargill; Charles McLaren, train-examiner, Balclutha; James Dobbie, leading lifter, Dunedin, passenger; John Fitzpatrick, train-examiner, Dunedin; John Alexander MacDonald, leading painter, Hillside.

The Commission adjourned at 2.40 p.m. for purpose of inspecting, the Chairman intimating that the Commission would sit at Christchurch on Friday, 9th March, 1917.

THURSDAY, 8TH MARCH, 1917.

The Commission left Dunedin by train at 8 a.m. The Chairman proceeded direct to Christchurch, arriving 5 p.m.

Messrs. Marchbanks and Maxwell alighted at Timaru, where an inspection of rolling-stock was made, continuing their journey to Christchurch by train leaving Timaru at 4.11 p.m., arriving Christchurch 7.10 p.m.

FRIDAY, 9TH MARCH, 1917.

The Commission met in the Provincial Council Chambers, Christchurch, at 9.30 a.m.

The Chairman opened proceedings, and the secretary read the warrant.

The following witnesses were called by the Railway Department, and examined on oath: Edward Lefort Wiggins Haskins, Locomotive Engineer, Greymouth; William James Watson, Workshops Manager, Addington; Richard Arthur Haydon, Foreman Carpenter, Addington; Logan Paterson, Car and Wagon Inspector, Christchurch; Alfred Luther Beattie, formerly Chief Mechanical Engineer, Railways; George Edward Richardson, Locomotive Engineer, Addington; Harry Hughlings Jackson, Chief Mechanical Engineer, Railways (to be continued).

The following witnesses were called by the Commission, and examined on oath: Arthur William West, train-examiner, Greymouth; Hugh Thomas Cox, lifter, Oamaru; Charles Nightingale, train-examiner, Oamaru; Charles Hector William Archer, train-examiner, Timaru; Robert Henry Emms, train-examiner, Christchurch; James Timbs, leading lifter, Christchurch; Edward Edgar Taylor, lifter, Timaru; Daniel Joseph Round, Foreman Painter, Addington.

The Commission adjourned at 5 p.m. until 9.30 a.m. next day—Mr. H. H. Jackson's evidence to be continued.

SATURDAY, 10TH MARCH, 1917.

The Commission resumed at 9.30 a.m.

Harry Hughlings Jackson, Chief Mechanical Engineer, Railways, was further examined by counsel for the Department and by the Commission.

Ernest Haviland Hiley, General Manager, Railways, was called by the Railway Department, and examined on oath.

The Commission adjourned at 10.50 a.m. until 2.30 p.m. on Monday, 12th March.

The Commission met at 2.30 p.m. in the Provincial Council Chambers, and dealt with matters connected with tests to be made at Canterbury College and Addington Workshops, adjourning at 4.30 p.m.

MONDAY, 12TH MARCH, 1917.

Mr. Marchbanks and Mr. Maxwell proceeded to the Christchurch and Addington Stations respectively at 9.30 a.m., and inspected rolling-stock, adjourning at noon.

The Commission resumed at 2.30 p.m.

The Chairman asked that the return *re* steel axles, already handed in, for years 1911–12 to 1915–16 be extended to embrace the period from 1900, or prior to that date if many replacements made.

John Valentine, Car and Wagon Inspector, Wanganui, was recalled and further examined on oath by counsel for the Railway Department.

Mr. Myers, counsel for Railway Department, addressed the Commission in reply, and the Commission adjourned at 4.15 p.m.

TUESDAY, 13TH MARCH, 1917.

The Commission met in the Engineering Laboratory, Canterbury College, at 9.30 a.m., and observed experiments on elasticity of whole and pieced springs, adjourning at 1 p.m.

At 2 p.m. the Commission resumed, and further experiments on springs and experiments on draw-gear were carried out in the laboratory, adjourning at 5.30 p.m.

WEDNESDAY, 14TH MARCH, 1917.

The Commission at 10 a.m. proceeded to Addington Workshops, inspected repairing-facilities, and conducted experiments referred to in Appendix VI.

The Commission met in the Canterbury College School of Engineering Library at 2 p.m. in connection with the drawing-up of the report, adjourning at 5.30 p.m.

THURSDAY, 15TH MARCH, 1917.

The Commission met in the library of the School of Engineering, Canterbury College, at 9.30 a.m., in connection with the drawing-up of the report, adjourning at 5.30 p.m.

The Commission again met at 8 p.m. till 9.30 p.m.

FRIDAY, 16TH MARCH, 1917.

The Commission met in the Library of the School of Engineering, Canterbury College, at 9.30 a.m., in connection with the drawing-up of the report, adjourning at 5.30 p.m.

The Commission again met at 8 p.m. till 9.30 p.m.

SATURDAY, 17TH MARCH, 1917.

The Commission met in the library of the School of Engineering, Canterbury College, in connection with the drawing-up of the report, adjourning at 1 p.m.

The Commission again met from 5 p.m. to 6 p.m. Messrs. Marchbanks and Maxwell left by the evening steamer for Wellington.

MONDAY, 19TH MARCH, 1917.

The Chairman and secretary were engaged in the final revision of the report and the appendices and returns.

TUESDAY, 20TH MARCH, 1917.

Messrs. Marchbanks and Maxwell met in the Harbour Board Offices, Wellington, at 11 a.m., and appended their signatures to the report, after perusal of same and the accompanying appendices.

MINUTES OF EVIDENCE.

AUCKLAND, MONDAY, 5TH FEBRUARY, 1917.

The Commission met at 10 a.m. in the Lands Office, Government Buildings, Auckland.

The Chairman opened proceedings, and called on the Secretary to read the warrant. (Warrant read.)

Mr. M. Myers, solicitor, of Wellington, appeared on behalf of the Railway Department.

Mr. MYERS, in opening, said: The question that has been submitted to this Commission is, briefly, with regard to the safety and efficiency of the rolling-stock. It is necessary to indicate to the Commission how this question arose and why the Commission has been set up, but in doing so I propose to indicate the position as briefly as I can, and I propose to refrain from making any comment upon the action of any person who may be wholly or in part responsible for the allegations which have been made. That is plainly the proper course, because those who are responsible for the allegations which have resulted in this Commission being set up are not present, and naturally I would like to hear, before making any comment, the grounds upon which those allegations are based. It is only fair to say that it would not be altogether reasonable to expect those who have made the allegations to attend or be represented here in Auckland, but the usefulness of commencing the proceedings in Auckland is that the Commission will be able to see the rolling-stock of the country from the northernmost section of the railways, and will be able to follow their investigations farther south. I assume that those who are responsible for these allegations which have resulted in this Commission being set up will take the opportunity—probably at Wellington—of attending before the Commission and of stating the grounds of those allegations and of calling the evidence upon which they are based. When all that has been done there will be an opportunity for me, as representing the Railway Department, to make such comments as may appear proper in the circumstances; and I think that is the proper course to adopt. I am sure the Commission and the public will agree in this, that the question of the condition of the vehicles which are used for the transport of the public is a matter of very great general and public concern; and this is equally true whatever the means of transport, whether railways, tramways, or steamships. The public safety in connection with any means of transport should, and must, be the first and paramount consideration, and if persons holding positions of responsibility in the community question the condition of a particular means of public transport on grounds which expressly or impliedly indicate that the public safety is neglected, the matter immediately becomes one for serious investigation, and that investigation should be made in the light of day. With these preliminary remarks may I say that the genesis of this Commission is to be found in a question which appears in *Hansard*, 6th to 11th July, 1916, page 599:—

Mr. WILFORD (Hutt) asked the Minister of Railways, without notice, whether his attention had recently been called to the condition of the rolling-stock on the New Zealand railways at the present time; and whether there was a shortage of the necessary equipment for renewals in the Stores Department; and whether it was a fact that where broken springs had been found under carriages two springs were put into one, as there were not sufficient springs available. Further, whether he would get a competent man like Mr. James Marchbanks, who had charge of the Manawatu Railway for many years, to make a thorough investigation of the condition of the rolling-stock, and if he would then set up a Commission before which men in the service may give evidence as to the condition of the present rolling-stock.

There is only one observation I desire to make with regard to this question, and that is this: It is plain by the use of the words "broken springs under carriages" that the questioner had in mind the bearing-springs of carriages. The next stage was this—again it appears in *Hansard* on the 26th July, 1916, page 437: Mr. Veitch, member for Wanganui, said,—

I would also like the Minister to tell us all about the operations this year on rolling-stock as compared with last year. I have not gone closely into the matter of rolling-stock, but I do know that at least one instruction has been issued by the Locomotive Department to the effect that broken springs may be duplicated and put into all vehicles, instead of replacing those broken springs with new good serviceable springs.

I may here pause to observe that it will be found that Mr. Veitch is quite wrong in what he says, "I do know that at least one instruction has been issued by the Locomotive Department to the effect that broken springs may be duplicated and put into all vehicles." We have found the instruction to which he refers, and it will be shown that his information is entirely wrong. The report in *Hansard* goes on—

The Hon. Mr. HERRIES.—That only relates to draw-bar springs.

Mr. VEITCH.—Precisely; and draw-bar springs are a most important part of a train so far as safety and comfort are concerned, and very important in connection with the wear-and-tear of the train. As a matter of fact, the packing of draw-bars with pieces of old broken springs, instead of holding them properly up in position with new springs, involves the whole draw-gear of a train in excessive strain, which is quite unnecessary and which will ultimately land the Minister in very great expense.

An. Hon. MEMBER.—How does it threaten the safety of a train?

Mr. VEITCH.—An honourable member wants to know how it threatens the safety of a train to pack buffers with broken springs, put in in pieces, instead of whole springs. A broken spring is no spring at all; practically, it is a piece of solid metal, and when the strain comes upon it there is no spring to relieve the strain, and the draw-gear had to take the whole strain at once, as a solid blow. It is the difference between laying a hammer on a piece of glass and dropping it on with a blow. That is a clear indication of the direction in which the policy of the Department is going.

On the 25th July, 1916, Mr. Wilford gave notice to move,—

(1.) That there be laid before this House an up-to-date report on the condition of the rolling-stock of the Dominion: such report to have attached to it the separate reports of the Inspectors of Rolling-stock who have service with the State. (2.) That a Commission be set up to inquire into and report upon (a) the condition of such rolling-stock, and (b) the amount of stock in hand in the stores in the principal workshops of New Zealand. (3.) That the Commissioner shall be a railway expert, who shall have power to call for persons and papers, and with instructions to report as soon as practicable.

Mr. Veitch's speech on page 437 of *Hansard* was made the following day. The next step was that reports were prepared by members of the Department. In the meantime not only had there been this question and the comments before the House, but it had come to the knowledge of the officers of the Department that Mr. Wilford's complaint had special reference to the under-carriages and springs. It was not known what particular springs he referred to, but from his question in the House it was assumed that in particular he was referring to the carriage bearing-springs. The officers of the Department then made the most complete inquiries, and their reports were prepared. At that stage it will be remembered that the motion before the House asked for two things: it first of all asked for complete reports, and it also asked that a Commission should be set up; but the officers of the Department did not at that time consider that anything in the way of a formal inquiry or Commission was necessary, nor did they think the expense of such a formal inquiry would be justified. They believed that they were entitled to be regarded as men of honour and integrity, and that the reports of a number of responsible officers would be accepted as correct. They endeavoured to avoid the expense of a formal inquiry by giving what they thought was the fullest information from all persons in the service competent to speak on this question, but at the same time they would have been glad to supplement that information if it appeared that there was any point which had not been made plain, or upon which further information was required. These reports were presented to the House by the Minister. The reports themselves appear in parliamentary paper D.-6 of 1916. I propose to read the reports, and then refer to the proceedings that took place in the House when the motion was brought forward in the House.

Memorandum for the Hon. the Minister of Railways.

WITH reference to the motion of Mr. Wilford respecting the condition of the rolling-stock on the New Zealand State railways, I attach hereto the report of the Chief Mechanical Engineer, who is in charge of, and responsible for the condition of, the whole of the rolling-stock used in connection with the New Zealand State railways. In accordance with your directions, reports were also obtained from the whole of the officers in the Locomotive Branch who are responsible to the Chief Mechanical Engineer for the condition and safety of the rolling-stock used in the various districts. In addition to these, reports have been obtained from the Workshop Managers who are responsible for the building of new rolling-stock and repairs to stock sent to the workshops for overhaul.

The whole of the officers state in the most definite manner possible—

- (1.) That the rolling-stock has been maintained in a high state of efficiency:
- (2.) That repairs have not been neglected:
- (3.) That there has never been any necessity or occasion to direct attention to rolling-stock running in an unsafe condition, nor do they know of any instances in which vehicles have been placed on trains when unsafe to run:
- (4.) That they have never received any instruction that underframes and running-gear were not to be repaired when required—on the contrary, such gear is kept well within the limits of safety:
- (5.) That while due economy has been exercised it has not in any way reduced the efficiency of the rolling-stock, nor have repairs been allowed to stand over to the detriment of safety:
- (6.) That the instructions in regard to the upkeep of rolling-stock have not been relaxed during the past three years, and before any vehicle, either new or repaired, is allowed out of the shops a personal and detailed inspection is made for the purpose of seeing that it is in a thoroughly safe condition.

With respect to draw-bar springs, these do not form any portion of the running-gear, but are merely shock-absorbers and reduce the bumping that would otherwise take place when trains are being started and stopped. The draw-bar spring is equally efficient for the purpose of absorbing shock whether it is in one or two pieces. This will be seen by reference to the drawing herewith. The draw-bar is shown through the head-stock of the carriage, with the draw-bar spring in compression. Alongside is a print of the same spring uncompressed.

I desire to point to the references made to the condition of the rolling-stock in each year's Railways Statement, and to state positively that I am not aware of anything to warrant the assumption that the rolling-stock has been neglected, and that neither directly nor indirectly has any instruction been given for the curtailment of expenditure on the upkeep of the rolling-stock. The constant aim of the Department is not only to maintain its rolling-stock in the highest standard of efficiency, but to improve the class of vehicle employed with a view to increasing the accommodation and conveniences afforded to the public.

The figures given below show (a) that more vehicles have been passed through the shops per annum during the last two years than during the previous eight years, and (b) that more money has been expended on repairs per vehicle during the latter period:—

AVERAGE NUMBER OF ENGINES, CARRIAGES, BRAKE-VANS, AND WAGONS PASSED THROUGH VARIOUS SHOPS PER ANNUM FOR REPAIRS DURING THE LAST TEN YEARS.

	During Eight Years, from 1907 to 1914.	During Two Years, 1915 and 1916 (ending 31st March).
Locomotives	590	727
Carriages	1,850	2,126
Brake-vans and wagons	17,093	21,170

AVERAGE AMOUNT PER VEHICLE PER ANNUM SPENT ON REPAIRS.

	During Eight Years, from 1907 to 1914. £	During Two Years, 1915 and 1916 (ending 31st March). £
Locomotives	195.50	220.71
Carriages	37.83	37.49
Brake-vans and wagons	3.51	3.74

The Department has no objection to the fullest investigation and inquiry being made into the condition of the rolling-stock at present running on the railway system.
Wellington, 2nd August, 1916.

E. H. HILEY,
General Manager.

I would remark here that the General Manager had apparently noticed that there was some misconception in the mind of Mr. Wilford when he asked the question, and the General Manager particularly referred to draw-bar springs, which the Commission will know are a very different thing from the bearing-springs of carriages.

Chief Mechanical Engineer's Office, Wellington, 2nd August, 1916.
General Manager, New Zealand Railways.

Condition of Rolling-stock.

IN accordance with your above-quoted instruction, I now forward herewith for your information reports from the various officers of the Locomotive Branch who are immediately responsible for the efficient upkeep of the rolling-stock of the New Zealand railways.

As you will observe, these reports absolutely deny the suggestions made that the rolling-stock is not in thoroughly efficient working-order, that there is any scarcity of spare parts, or that the regulations re keeping stock in good repair have been in any way relaxed.

I now desire, as head of the Locomotive Branch, to thoroughly endorse these reports, and to say that I consider the suggestions made were absolutely without any foundation in fact.

From my own personal knowledge I can state emphatically that the rolling-stock of the New Zealand railways has never been in better condition than it is at the present time.

H. H. JACKSON,
Chief Mechanical Engineer.

Locomotive Engineer's Office, Addington, 21st July, 1916.

Chief Mechanical Engineer, Wellington.

Condition of Rolling-stock.

IN reply to your above-quoted memo. calling attention to a statement in the House that the repairs to rolling-stock have not been kept up during recent years, and that there is a shortage of spares, I beg to state that there is no foundation for such an assertion so far as the South Island main line and branches are concerned, nor any other portion of the railway system of which I have knowledge.

The repairs are thoroughly well attended to, and the instructions regarding the upkeep of the condition of rolling-stock as a matter of safety have not been amended or relaxed during the last three years, but, on the other hand, have been strictly enforced, and the closest attention directed to this very important matter, which is recognized by Railway officers as the first and most important duty; also, improvements have progressed during the last three years.

With regard to the statement that a requisite stock of spares has not been provided for, I must say that that is not the case. I cannot understand why my name should be mentioned as being in a position to give information in support of such a statement, for although I certainly can give information bearing upon the subject it is definitely to the effect that the rolling-stock was never in such good and efficient condition as it is at the present time.

Inclosed please see statements made by the Car and Wagon Inspector, Christchurch, the Workshop Manager, Addington, and the Brake Inspector (who is acting Car and Wagon Inspector). Report from Workshop Manager, Hillside, will be taken in Dunedin and forwarded.

G. E. RICHARDSON,
Locomotive Engineer.

Statement of Mr. H. WYLIE re the Condition of Rolling-stock on South Island Main Line and Branches.

My designation is that of Brake Inspector of South Island Main Line and Branches, but during the last ten years I have from time to time relieved for varying periods the Workshop Foremen at Addington, Invercargill, and Greymouth, also Car and Wagon Inspectors at Christchurch, Dunedin, and Invercargill. During the last four months I have acted as Car and Wagon Inspector at Dunedin, and am in a position to state definitely the condition of the rolling-stock. Unquestionably the condition of the rolling-stock on this section is in first-class working-order, and absolutely in perfect safe-running condition. So far as this section is concerned, there are no grounds for any statement to the contrary.

Periodically a progress report is submitted by me giving a truthful though brief statement as to the condition of the rolling-stock. A perusal of these reports will be found to show that the equipment of the rolling-stock is in a thoroughly sound condition as regards safety.

I am fully conversant with Loco. Instruction No. 328 and my responsibility as defined therein, and I always act in accordance with instruction which is specially laid down for the guidance of Car and Wagon Inspectors. Instruction No. 334 is also rigorously adhered to.

I am conversant with the condition of the rolling-stock on this section and the condition of all vital and other parts, such as underframes and running-gear of carriages, vans, and wagons, which is thoroughly sound.

I do not know of any instance where cars, vans, or wagons have been allowed to run in an unsafe condition, and I have not at any time been instructed to allow vehicles to run in an unsafe condition. I consider the efficiency of the rolling-stock at the present time to be of as high a standard as at any time of which I have any knowledge.

I have no knowledge of any repairs being neglected as a result of a shortage of spares for renewals and repairs, and I have not had occasion to call attention to any shortage of spares that could in any way affect the safety of the travelling public. I have had sufficient spares on hand for necessary upkeep of rolling-stock in a condition of safety. I have not at any time received instructions not to carry stocks of spares.

The economy practised on this section has not reduced the efficiency of rolling-stock to an unsafe condition. The safety of the rolling-stock has not been in any way involved by the introduction of this economy. Repairs have not been allowed to stand over to the detriment of safety.

Instructions regarding the upkeep of rolling-stock affecting safety have not been in any way relaxed during the last three years.

H. WYLIE,
Brake Inspector,
(Acting Car and Wagon Inspector), Dunedin.

22nd July, 1916.

Statement of Mr. L. PATERSON, Car and Wagon Inspector, Christchurch.

Repairs of late have not had to be neglected through any shortage of spares for renewals, &c., although a few years ago there was a shortage of buffer-springs, but this was overcome by piecing up, which met the requirements. The question of safety is not concerned thereby.

I have never had occasion to call attention to the rolling-stock running in an unsafe condition, and I have always had sufficient spares on hand for the necessary upkeep of rolling-stock in a condition of safety; also, I have never received instruction that I was not to keep a stock of spares.

I am fully conversant with Loco. Instruction 328 and responsibility defined therein, and always act in accordance with instruction; and as I am also fully conversant with the condition of the rolling-stock on this section I am of the opinion that the condition of the underframes and running-gear on this section is in good and safe running order.

I do not know of any instance where cars, vans, or wagons have been allowed to run in an unsafe condition, and I have never received any instruction that underframes and running-gear were not to be repaired when required; on the contrary, they are kept well within safe limits.

I consider the efficiency of the rolling-stock has been kept at quite as high standard during the last three years as in any period of the history of my term as Inspector—viz., nineteen years—whilst improvements are steadily progressing.

For some time past a specially close watch has been kept on spares with a view to economy, but I have not on any occasion been refused material required for rolling-stock repairs. The economy exercised has not in any way reduced the efficiency of the rolling-stock, nor have repairs been allowed to stand over to the detriment of safety. I have not seen any vehicle in traffic during the last three years unsafe to run.

The instructions in regard to upkeep of rolling-stock affecting safety have not been amended or relaxed during the past three years, and before any vehicle, new or repaired, is allowed out of shops I make a personal and detailed inspection, as I fully understand my responsibility for seeing that rolling-stock is to be maintained in a thoroughly safe condition.

L. PATERSON,
Car and Wagon Inspector, Christchurch.

20th July, 1916.

In regard to Mr. Paterson's report, may I make one observation about the draw-bar springs. It has been said that at times draw-bar springs have been broken, and instead of putting new ones in two or three pieces of draw-bar springs have been used. In the case of draw-bar springs that does not affect the safety in any way. It has always been the practice, I understand, to use pieces of draw-bar springs so long as the pieces fit properly. However, that is a question upon which a good deal of evidence will be given. That observation does not apply to passenger-carriages, although, as I say, the question of safety is not involved, but the question of comfort may be involved. The practice to which I have referred has been adopted in respect of wagons, but not in respect of carriages, except possibly in a few cases of carriages which have been used merely on short-distance runs.

Statement of Mr. W. J. WATSON, Workshop Manager at Addington.

1. I do not consider that the designing of rolling-stock during the last three years has in any way decreased the safe running of rolling-stock.
2. I consider that the underframes and running-gear of all new stock built under my control are in every way safe to carry the vehicles for which they are built.
3. I have not received any instruction not to thoroughly carry out the repairs to the underframes or running-gear of any car, brake-van, or wagon sent into the shops for repairs.
4. I have not received any instructions not to supply any spares for rolling-stock repairs. I have supplied them according to the orders received from the Car and Wagon Inspector.
5. Whenever cars, wagons, or brake-vans are sent to shops for repairs they are thoroughly overhauled and repaired before being returned to traffic. The Car and Wagon Inspector is very particular in seeing that this is done.
6. I consider that the state of the rolling-stock has improved during the last three years. Improved standardization has been steadily proceeding all the time.
7. The strictest economy has been practised, but in no direction whatever has the safety of the rolling-stock suffered.
8. Nothing has been cut out of the necessary repairs to keep down expenditure, full attention being paid to the efficiency of the rolling-stock.
9. The instructions *re* the upkeep of rolling-stock have certainly not been relaxed during the last three years, but on the other hand amendments of considerable importance have been made, such as heavier axles, extra springs, improved axle-boxes, and improvements in draw-gear.
10. I do not consider that there are any grounds for the statement that the state of rolling-stock has deteriorated in any way, nor has there been a shortage of spares even since the war has been running.

20th July, 1916.

W. J. WATSON,
Workshop Manager, Addington.

Statement of Mr. J. CARSON, Workshop Manager, Hillside.

1. I have never received any instructions not to carry out the repairs to underframes or running-gear of any car, brake-van, or wagon sent to Hillside Workshops for repairs.
2. When a car, brake-van, or wagon is sent to workshops for repairs it is thoroughly overhauled and repaired before being sent into traffic. Before a car, brake-van, or wagon is sent out of shops after repairs have been effected it has to be passed by the Car and Wagon Inspector, who makes a thorough inspection of it.
3. I consider the rolling-stock at the present time is just as efficient as it was three years ago, and improvements have been steadily going on.
4. The instructions for the upkeep of rolling-stock have not relaxed during the last three years. On the other hand, I am of opinion that the instructions have been more rigid for the efficiency of the rolling-stock.
5. The designing of rolling-stock has not in any way decreased the safe running of rolling-stock during the last three years.
6. I consider that the underframes and running-gear of all new rolling-stock built under my control are in every particular safe and strong to carry the vehicles for which they are built.
7. The efficiency of the rolling-stock has not been impaired in any respect, although the strictest economy has been exercised.
8. I have not allowed any repairs to stand over to keep down expenditure.
9. I have never received any instructions not to supply spares for rolling-stock either to Car and Wagon Inspector or Locomotive Foreman.

26th July, 1916.

J. CARSON,
Workshop Manager, Hillside.

Chief Mechanical Engineer, Wellington.

Locomotive Branch, Wanganui, 20th July, 1916.

Condition of Rolling-stock.

STATEMENTS as asked for are attached. Copies have been forwarded to the Locomotive Engineer, Petone.

E. E. GILLON,
Locomotive Engineer.

Statement by Mr. J. VALENTINE, Car and Wagon Inspector, stationed at Wanganui.

I have been Car and Wagon Inspector at Wanganui for about two years, and in such position examine all vehicles before leaving the workshops. I am also responsible for the safe condition of the rolling-stock as defined in Loco. Instruction No. 328.

So far as I am aware, in my district there is no vehicle in service which is in an unsafe or dangerous condition. The instructions *re* upkeep of condition of rolling-stock affecting safety have not in any way been amended or relaxed during the last three years. No vehicles have ever been allowed by me to remain in service in an unsafe condition. I have never been debarred from sending vehicles to the workshops for repairs when necessary. I have a perfectly free hand in the matter.

With regard to spares, there has been a shortage of draw-bar springs lately, and I have had to use two pieces on wagon draw-bars. No cars or bogie wagons have been fitted with two pieces of spring or draw-bars except a few cars on short-distance runs. No bogies whatever have had broken springs fitted in.

I recognize my responsibility on the matter of safety to the public, and always impress upon my staff the necessity of paying strict attention to the running and draw-gear of all vehicles. I am satisfied that my staff is reliable and carry out their duties faithfully.

I consider that the upkeep of the rolling-stock has in no way deteriorated during recent years. I consider that there are no grounds for the statement made in Parliament.

So far as I am aware, there have not been any alterations in the design of rolling-stock to in any way interfere with its safety. I consider that it is a perfectly safe practice to use two pieces of springs on draw-bars of wagons, provided that the spring is left long enough to compress. This practice has been in use for many years whenever a shortage of springs takes place.

J. VALENTINE,
Car and Wagon Inspector, Wanganui.

20th July, 1916.

Statement of Mr. W. KYDD, Workshop Manager at East Town Workshops.

I have been twelve years in charge of East Town Railway Workshops. During recent years repairs to rolling-stock have been kept up to safe and efficient working-order, and in no case have vehicles been allowed to leave East Town Workshops unless they were in safe running-condition.

I have never noticed a vehicle sent in for repairs to be in really unsafe running-condition excepting, of course, vehicles which have been damaged by shunting or through an accident.

It is incorrect to say that a number of carriages and bogie stock in daily use are unsafe, and I can safely say that no car or bogie wagon or other vehicle has left East Town Workshops in unsafe running-condition. I have a first-class staff of lifters, in whom I have every confidence, and they would not allow anything defective to leave their hands.

After my staff have finished repairing, vehicles are, before finally leaving workshops, inspected by the Car and Wagon Inspector, whose inspection is very rigid.

So far as spares are concerned, there has occasionally been a shortage of draw-bar springs, but nothing else, and on wagon stock we have had to use two half-springs, which is not in any way unsafe or detrimental to the stock. No half-springs have been used on cars or bogie wagons. To my knowledge, half-springs have been used on wagons for many years.

In my opinion there has not been any alteration in the design of rolling-stock which would in any way interfere with its safety.

So far as I am aware the instructions *re* upkeep of rolling-stock affecting safety have not been amended or relaxed during the last three years.

19th July, 1916.

W. KYDD,
Workshop Manager.

Locomotive Engineer's Office, Newmarket, 19th July, 1916.

Chief Mechanical Engineer.

Condition of Rolling-stock.

I HAVE perused the copy of memo. from General Manager attached to your above-quoted memo., and have to report as follows:—

The statement that underframes and running-gear of vehicles in use on this division have not been kept up to the usual standard of efficiency during the past two or three years is absolutely incorrect, and I am not aware of any ground for such statement.

The instructions *re* upkeep of condition of rolling-stock affecting safety have not been in any way amended or relaxed during the last three years.

We have not experienced any difficulty in getting the necessary spares to maintain all rolling-stock in thorough safe and efficient running-order.

The first consideration of any Railway officer connected with the repairs and upkeep of rolling-stock is the safety of running-gear, and I am certainly not aware of any vehicles running in an unsafe condition, and feel quite sure that none of the officers of this branch would allow such a state of affairs to exist.

The condition and upkeep of rolling-stock has not in any way gone back, and is as good as it was at any time during my experience.

I do not know of any alteration in the design of rolling-stock which would in any way interfere with its safety.

Statements from Workshops Manager, Workshop Foreman, and Car and Wagon Inspector attached.

F. T. MURISON,
Locomotive Engineer.

Statement of Mr. J. F. MCCARTHY, Workshop Manager, Newmarket.

I am Workshop Manager, Newmarket Railway Workshops.

I am not aware of any grounds for the statement made in Parliament that repairs to rolling-stock have not been kept up to the usual standard of efficiency during recent years and that there is a shortage of spares.

The instructions *re* upkeep of condition of rolling-stock affecting safety have not been in any way amended or relaxed during the last three years.

We have not experienced any difficulty in getting the necessary spares to maintain all rolling-stock sent to shops in thoroughly safe and efficient running-order.

The condition and upkeep of rolling-stock has not in any way gone back, and it is as good now as it was at any time during my experience.

I am certainly not aware of any rolling-stock running in an unsafe condition, nor can I supply any information to show that such a state of affairs exists.

I do not know of any alteration in the design of rolling-stock which would in any way interfere with its safety.

19th July, 1916.

J. F. MCCARTHY,
Workshop Manager, Newmarket.

Statement of Mr. D. A. MOORE, Car and Wagon Inspector, Auckland.

I am Car and Wagon Inspector for the Auckland District. My duty, in the first place, is to see that the whole of the rolling-stock is maintained in a safe and efficient condition to travel on any train, and that any vehicle unfit for service is immediately withdrawn and arrangements made for its repair. I am responsible for seeing that all vehicles before leaving workshops are in thoroughly safe running-order.

I am not aware of any grounds for the statements made in Parliament that repairs to rolling-stock have not been kept up to the usual standard of efficiency during recent years, and that there is a shortage of spares.

The instructions *re* upkeep of condition of rolling-stock affecting safety have not been in any way amended or relaxed during the last three years.

I have not experienced any difficulty in getting the necessary spares to maintain all rolling-stock in thoroughly safe and efficient running-order.

The condition and upkeep of rolling-stock have not in any way gone back, and is as good now as at any time during my experience.

I have never allowed any vehicle to remain in service in an unsafe condition. If any defects are discovered that would affect the safe running of vehicle it is immediately withdrawn from service.

I cannot supply any information to show that rolling-stock in an unsafe condition is allowed to remain in service.

I have not been in any way debarred from sending cars and wagons to shops for repairs when necessary.

I am fully aware that my responsibility is defined by Loco. Instruction No. 328.

19th July, 1916.

D. A. MOORE,
Car and Wagon Inspector, Auckland.

Statement of Mr. H. F. HOLDER, Workshop Foreman, Newmarket.

I am Workshop Foreman Carpenter, Newmarket Railway Workshops. It is my duty to see that all vehicles—new, rebuilt, or repaired—are in thoroughly safe running-order before leaving shops.

With regard to the statement made in Parliament that repairs to rolling-stock have not been kept up during recent years, and that there is a shortage of spares, there are no grounds for such a statement as far as Newmarket Workshops are concerned. The instructions *re* upkeep of condition of rolling-stock affecting safety have not been in any way amended or relaxed during the last three years.

We have not experienced any difficulty in getting the usual spares to maintain all rolling-stock sent to shops in thoroughly efficient and safe running-order.

The condition and upkeep of rolling-stock has not in any way gone back, and is as good now as it was at any time during my experience.

I am not aware of any rolling-stock running in an unsafe condition, nor can I supply any information to show that any vehicles are running in an unsafe condition.

19th July, 1916.

H. F. HOLDER,
Workshop Foreman, Newmarket.

Chief Mechanical Engineer.

Locomotive Engineer's Office, Petone, 20th July, 1916.

Condition of Rolling-stock.

THERE are no grounds whatever for the statements made in Parliament that the repairs to rolling-stock have not been kept up during recent years, and that there is a shortage of spares.

The instructions regarding the safe and efficient maintenance of rolling-stock have not been amended or relaxed during the last three years.

During the fourteen months I have been in charge of this district I have on frequent occasions personally impressed upon Workshops Managers, Foremen, Car and Wagon Inspectors, and Train-examiners the absolute necessity for exercising the greatest care in the examination of rolling-stock, so that no vehicle should remain in service in a faulty or unsafe condition.

My officers have clearly realized their responsibility in this direction, and I can confidently state that the stock in this district has never been in a more efficient condition than it is at the present time.

In any alterations in the design of rolling-stock made during recent years the chief aim has been to increase the efficiency of the various parts subject either to wear or strain, but no alterations have been made that would be liable to impair the safety of any vehicle.

There has been no shortage of any material necessary for the safe running of stock in this district, and, as I have previously intimated, the statements made in Parliament have no foundation in fact.

S. P. EVANS,
Locomotive Engineer.

Statement of CHARLES THOMAS BARGH, Workshops Manager, Petone.

I read Mr. Wilford's question *re* condition of rolling-stock, and I came to the conclusion that he had received some information *re* the use of broken draw-bar springs.

I have been Workshops Manager at Petone since April, 1913, and our methods in keeping car and wagon stock in good and efficient running-order have not been altered. All vehicles sent to the Petone Workshops are put in good order, and are passed by the Car and Wagon Inspector before being sent into service. The Car and Wagon Inspector is just as rigid in his examination as obtained three years ago, and I am satisfied that no vehicle leaves the workshops in an unfit condition.

The instructions regarding the upkeep of stock affecting safety have not been relaxed or amended in any way.

I have not noticed that any alteration in design of rolling-stock has affected the safety of the vehicle; on the contrary, I consider they have been improved as regards the safety of the travelling public. The renewal of axles, tires, &c., has gone on just the same, and the only shortage we have experienced was with draw-bar springs. Wagons have occasionally left the shops with pieced draw-bar springs, but this does not affect their safety.

No car has been allowed to leave the shops even with a broken draw-spring, while the underframes and running-gear are maintained in first-class running-order.

C. T. BARGH,
Workshops Manager.

18th July, 1916.

Statement of JAMES FORRESTER MACKLEY, Brake Inspector (North Island), Wellington.

I have relieved the Car and Wagon Inspectors in both the North and South Islands on several occasions, and I am fully conversant with the Car and Wagon Inspectors' duties as laid down by Instruction No. 328 in the Loco. Codes.

The first time I was sent to relieve a Car and Wagon Inspector was about three years ago, when I relieved Mr. Turner at Dunedin, and since then I have relieved the Car and Wagon Inspectors at the following centres: Christchurch, Wellington, Wanganui, and Auckland.

As regards the upkeep of the rolling-stock, both cars and wagons, I consider the methods of to-day are better than they were three years ago, and I consider the stock generally in first-class order. I have never received any instructions to relax those regarding the maintenance of rolling-stock, and I have never known of any vehicle being allowed to run in an unsafe condition.

I am relieving the Car and Wagon Inspector at Wellington at the present time, and I consider the condition of the rolling-stock is excellent in every respect.

During the times I have relieved I have never known any vehicle to run in an unsafe condition, and I have never been debarred from sending vehicles to shops.

I should not consider it at all unsafe to run vehicles with broken draw-bar springs, and no doubt many vehicles run for some time before the broken draw-bar spring is discovered.

I would not allow any vehicle with a broken bearing-spring to run, and no car or wagon would be allowed to run even if one leaf of the spring was broken.

J. F. MACKLEY,
Brake Inspector (Acting Car and Wagon Inspector).

Statement by CHARLES GEORGE KELLY, Car and Wagon Inspector, Wellington.

I was appointed Car and Wagon Inspector for the Wellington District in February, 1915. Before my appointment I acted as Car and Wagon Inspector on two or three occasions, relieving both Mr. Smith and Mr. Moore, the former Car and Wagon Inspectors in the Wellington District.

I am fully acquainted with the duties and responsibilities of a Car and Wagon Inspector as laid down in Instruction No. 328 in the Loco. Codes.

The maintenance of cars and wagons is just as good at the present time as it was three years ago, and the instructions regarding the upkeep of condition of rolling-stock affecting the safety have not been amended or relaxed in any shape or form.

I have not at any time received any instruction to allow any car or wagon to run in an unsafe condition, and no car or wagon has to my knowledge been run in an unsafe condition.

I quite recognize that I am responsible for sending vehicles in need of repair to the shops, and also for seeing that they are efficiently repaired and fit for service before I pass them out.

When I read Mr. Wilford's question in the House I at once thought he alluded to draw-bar springs, although he mentioned bearing-springs. As regards the latter, no vehicle, either car or wagon, has been allowed to run with a broken bearing-spring. Broken draw-bar springs have been pieced up, owing to the shortage, but this in no way affects the safety of the vehicle, and this has been done often in years past.

The underframes and running-gear of the stock in my control are in first-class running-order, and are in as efficient condition as they were three years ago.

I have never allowed any vehicle, either car or wagon, to run in an unsafe condition, and I have never been debarred from sending vehicles for repair to the workshops.

C. G. KELLY,
Car and Wagon Inspector.

18th July, 1916.

Locomotive Engineer, Addington.

Locomotive Branch, Invercargill, 31st July, 1916.

Condition of Rolling-stock.

1. REGULATIONS regarding repairs and upkeep of rolling-stock have not been altered or relaxed during the last three years.

2. I have not been debarred from sending stock in for repairs when I considered it necessary.

3. I fully understand by Loco. Instruction 328 that I am responsible in seeing that rolling-stock is kept in safe running-order, and I have not allowed cars and wagons or vans in an unsafe condition to remain in service.

4. The general conditions of running-gear and underframes of rolling-stock under my charge is the same now as it was three years ago.

E. H. FREED,
Car and Wagon Inspector.

I might here explain that the reason for all the reports being worded similarly is that a memorandum was sent out indicating what had been said, and asking the officers to report and answer certain questions. On the 4th August, 1916 (*Hansard*, p. 788) the Hon. the Minister moved to lay on the table this document which I have read—namely, D.—6—and which contains the reports of the General Manager and numerous other officers of the Department. It will be seen that the member who had asked the question relating to the rolling-stock, and moved the motion relating to the rolling-stock, to which I have already referred, did not accept the statements made by these responsible officers. This is what the Hon. Mr. Herries said: "I beg, with the leave of the House, to lay on the table a report by the General Manager of Railways and other officers on the condition of the rolling-stock. As this is a most important matter, I should like to read some of the remarks made, which I think will dispose of the idea that there is anything wrong with the rolling-stock." [Mr. Myers here drew attention to the words in Mr. Veitch's speech, "that there may be some difference between a fact and a departmental report, and also observed that, apart from any other fallacy, Mr. Veitch was assuming that what he was saying applied to carriages as well as to wagons.] Mr. Veitch in his speech also makes a rather curious statement. He appears to think that when you have a spring in two parts those two parts, when the pressure is exerted, form a compact mass and remain a compact mass. I may not perhaps understand what he says, but it is extremely difficult, even to a lay mind like my own, to understand how such a state of things can possibly happen. I can understand that when the pressure is exerted the spring becomes compact, but when the pressure is released one would suppose the spring also becomes released, and does not become compact again until the pressure is again exerted, though I do not profess to know much about it. Mr. Wilford followed Mr. Veitch, and in his speech he said,—

Sir, the papers proposed to be laid on the table by the Minister have come to the House through a question raised recently by myself, as is mentioned in the reply. I am not satisfied with the reply, and I propose to give my reason for being dissatisfied. The suggestion that the rolling-stock of the railways is not in the best of order, or the inquiry whether the rolling-stock is in order, is interpreted as a reflection on the Engineer who has charge of the rolling-stock of the railways. What happens? As soon as a member of Parliament makes such a suggestion it is referred to the officer concerned, who immediately sets about preparing a defence. How does he go to work? He first of all brings his mind to bear on the men who are under him, and who are alike responsible with himself for the condition of things, and he says to them, directly or indirectly, "All you gentlemen are on your trial as much as I am. You have to answer this query, just as I have to answer it. I expect you to report to me immediately, so that I may embody in my reply to Parliament all your subsidiary reports as a defence of myself and, *inter alia*, of yourselves." Then we have produced to Parliament the report of the officer who is responsible, together with the reports of the subsidiary officers whom he holds responsible, and we are asked to accept that as an answer to the query. It seems to me to be a farce if when any question is raised in regard to a Government Department the answer of the departmental officer concerned is to be the last word which settles the responsibility or otherwise of that officer. I suggested when discussing the matter previously that Mr. James Marchbanks, who at present is engineer to the Harbour Board, and was for years engineer for the Manawatu Railway Company, and one other outside engineer should be asked by the Minister to inspect the rolling-stock and to forward their reports to the House upon the condition of that rolling-stock, and not to allow the gentlemen concerned to give this answer, and to accept that answer as final. You cannot expect that any departmental officer who considers a question is being asked about his Department is going to plead guilty to even want of thought or want of consideration for public concerns. There is no doubt whatever, from the reports that have been given to me, that there is a necessity for outside inquiry. If a report were obtained from two men, of whom Mr. Marchbanks would be one, and one other—for I am sure Mr. Marchbanks is a thoroughly honourable, straightforward, and capable man—then the country would be satisfied and everybody would be satisfied. I believe that if there was anything wrong with the rolling-stock of this country, it does not matter what displeasure a member might incur by mentioning it, it is his duty to mention it and see that the matter is gone thoroughly into. Now, I have had it stated to me by a man who was himself concerned with that rolling-stock, that he declined to carry the burden of responsibility on his shoulders, and that he made his representation to me for that reason, and asked me to pass it along.

Mr. Wilford here makes a direct statement of fact. I am instructed by the Department that whatever any officer may have said to Mr. Wilford, no officer has ever reported such a thing to the General Manager or to any superior officer. Mr. Wilford further says,—

I went to the Minister of Railways and told him privately that I had been informed of the condition of some of the railway rolling-stock of this country; and, as I did not intend to take the responsibility, I asked him to have proper inquiry made by some one outside the Railway service in order to see who should bear the burden of responsibility, if responsibility there was. The Minister has had inquiries made and has carried out his promise thoroughly, but these inquiries do not satisfy me, because they are from a prejudiced source. Let us, for example, take it that some other Department had to deal with a question as to the inefficiency of its methods of carrying on its departmental work: would the Minister in charge of the Department expect to satisfy the country and the House if he were to ask the men who were claimed to be wanting in their attention to their duties to report on themselves as to the amount of attention they paid to their duties? Obviously, such a position would be absurd. If the Commissioner of Police had complaints made to him by outside people that his sergeants did not do their duty, would the Commissioner of Police be satisfied with reports from the sergeants concerned? And if the sergeants wrote back to the Commissioner and said they had done their duty, would that be an end of the matter so far as that Department was concerned? In my opinion, that is not the way to settle the matter. I hope it can be found that there are no grounds for one's fears; but one of the gentlemen who made representations to me on the point has been known to me for twenty-seven years: he has held good positions in this country, though in the Railway Department, and, as he said to me, "Mr. Wilford, even if I have to go before a Committee of Parliament and give my evidence, I am prepared to do so. You can call on me if you want to; and if you get an answer from the Minister stating that no such thing exists I will come to your aid, because I have only a few more years to go as far as my superannuation is concerned, and I am prepared to take any risk there is." He told me seriously and quietly that he would be ready to come forward and prove his statement. That is why I brought the matter up.

That is the *Hansard* report of the proceedings on the Minister's motion to lay the report on the table of the House and have it printed. I do not know whether the *Hansard* report as it appears in *Hansard* is always verbatim. I have some reason to think that it is not: I mean that members make certain alterations sometimes in their speeches. But this is how Mr. Wilford's speech was reported by two Wellington newspapers, and the reason I mention this is that we all know that there are very few people who trouble to read *Hansard*, but nearly all the people read the newspapers. The report of the *New Zealand Times* of the 5th August reads,—

Mr. WILFORD said that he was not satisfied at all with the report. The suggestion that the rolling-stock was not in order was interpreted as a reflection on the Engineer who had charge of the rolling-stock on the railways, and what happened? As soon as a member of Parliament made such a suggestion, it was referred to the officer concerned, and he immediately set about preparing a defence of himself. It seemed to him a farce that if any question was raised in regard to a Department the report of the officer concerned was to be regarded as settling the matter. He had suggested that Mr. Marchbanks (an expert formerly connected with the Manawatu Railway) should be asked to inspect the rolling-stock and forward his report to the Minister, and not to allow the officials to give their answer and accept that answer as final. They could not expect an officer to plead guilty to inefficiency, callousness, want of thought, or neglect of the public interest. But the public and the House would accept the report of Mr. Marchbanks or any other competent man. He had had statements made to him by men who were responsible for the inspection of some of the rolling-stock, who declined to carry the responsibility longer, and asked him to pass it along. An important Railway official had said to him that even if he had to go before the bar of the House and give evidence against his superiors, he could be called upon to do so if any Minister said that the state of affairs complained of did not exist.

Now, see what this report conveys to the general public. It conveys to the general public that the responsible officers of the Railway Department are not to be believed, and it implies that there is at least a probability of their having been guilty of inefficiency, callousness, or want of thought, or neglect of public interests, and that they could not be expected to plead guilty to any such charges. I do not say that that was the way in which the speech was delivered: I do not know whether it was or not. It may be that *Hansard* is more correct than the reports in the newspapers, which of course are condensed; but my point is that that is the way in which the matter is represented, not necessarily by Mr. Wilford, but the way in which it is represented to the public. The *Evening Post* of the same date has the following report:—

In the course of the discussion that followed, Mr. T. M. Wilford criticized the method of obtaining these reports. To his mind it was a farce if the answer of the departmental officer concerned was to be accepted as the last word. It was not likely that an officer was going to plead guilty to a charge of carelessness and inefficiency.

The report in the *Post* is therefore much the same as the report in the *Times*, but even if we disregard the newspaper reports altogether and take the *Hansard* report, there remains the fact that the reports of the responsible officers have not been accepted. This, then, was the position: not only has it been alleged that the rolling-stock has been allowed to deteriorate, and to deteriorate into a condition which is detrimental to the public safety, but what I call a serious allegation has been made against a number of responsible officers of the Railway Department. In the first place, as I have said, it was a member of Parliament who asked for the Commission, or for an inquiry somewhat similar to a Commission. The Railway officers thought that by giving the fullest information they would be able to avoid the necessity for a Commission and its consequent expense, but after the criticism of their reports in Parliament it was their turn to press for a Commission, and they considered that it was their duty, both to the public and to themselves, that they should demand an inquiry. They did press for an inquiry; they pointed out that it was extremely unfair to them and most unsatisfactory to the public that the matter should be left where it was. If the allegations which have been made with regard to the condition of the rolling-stock are true, and if the reports which have been made by responsible Railway officers are found not to be reliable, then the matter is a serious one, and would require careful attention from the proper authorities. If, on the other hand, it is found that there is no foundation for the allegations which have been made, and that the Railway officers are men—as one expects they should be—of integrity who have made fair and honest reports, then it is fair and proper that they should be cleared, and it is due to the public that these matters should be inquired into and cleared up. The position, then, was that although the departmental officers had, in the first place, desired to avoid the necessity for setting up a Commission and the expense

entailed thereby, the position, by reason of the criticism in the House of their reports, gave them no alternative, both in their own interests and the public interest, but to press for an inquiry. This Commission has therefore been set up, and the Government have appointed three men who have been closely connected with railway matters in the past, and amongst the Commissioners have appointed the gentleman to whom Mr. Wilford asked to have the question referred. I wish to inform the Commission that Mr. Wilford has been notified of the setting-up of the Commission, and that it would commence its sitting in Auckland, but it would probably be unreasonable to expect him to be here at such short notice. I apprehend, however, that any evidence which he would desire to call would be in Wellington, and the Department will give him every facility for calling such evidence as he may desire to call in whatever place may be most convenient to him. As far as the evidence here is concerned, I propose to call Mr. Murison, who is Locomotive Engineer; Mr. Moore, Car and Wagon Inspector; Mr. McCarthy, Workshops Manager; Mr. Holder, Workshops Foreman, and some, at all events, of the train-examiners. I propose to call two train-examiners from the neighbourhood of the Auckland Station, and I propose also to have in attendance to-morrow morning an examiner from Frankton and an examiner from Morrinsville. There is a number of other examiners, and the reason I am mentioning now which ones I propose to call is that, if the Commissioners would like to have any more called, I should be glad if you would let me know, as it is necessary to make arrangements for relieving any who come from a distance. We have arranged for these two to come to Auckland this afternoon in readiness for to-morrow morning, and we are calling two of the local men. I apprehend that the Commission want to know the system adopted and what the train-examiners do.

FRANCIS TAYLOR MURISON sworn and examined. (No. 1.)

1. *Mr. Myers.*] What position do you hold in the Department?—Locomotive Engineer.
2. How long have you been employed in the Railway Department?—Thirty-two years.
3. During what period have you been Locomotive Engineer?—Nearly seventeen years.
4. During how many of those years have you been stationed at Newmarket?—Just on four years.
5. Over what section or sections have you control as Locomotive Engineer?—The whole of the Auckland Section, as far south as Taumarunui. It includes everything north of Auckland.
6. Does it include Whangarei Section?—I also visit Whangarei and Dargaville.
7. Before I go into general matters, would you mind saying whether, so far as any particular operation of the Auckland Section is concerned, there has been during the last three years any special improvements or any improvement in a particular direction so far as rolling-stock is concerned?—The chief improvement we have had in recent years is the putting-in of the Westinghouse brake on the Whangarei Section—that is, during the last three years. There have also been other minor improvements.
8. As Locomotive Engineer would you give a general indication of what your duties are?—My duties are to generally supervise the work of the Locomotive Branch. I have under me the Locomotive Running Department, Workshops, and the Car and Wagon Department.
9. Have you under you certain Inspectors and other men who have to look after the rolling-stock?—I look to the Car and Wagon Inspector for the upkeep of the rolling-stock.
10. And are there any other persons who also examine and inspect the rolling-stock?—The train-examiners, of course. The Car and Wagon Inspector at Auckland has a staff of twenty-five under him.
11. Are those twenty-five train-examiners?—No, there would be six actual train-examiners.
12. Where are they stationed?—At Auckland itself.
13. So that in Auckland itself there are yourself, the Car and Wagon Inspector, and six train-examiners?—Yes.
14. You have also train-examiners outside of Auckland?—Yes; at Mercer, two; at Frankton, three examiners and three lifters, who act also as examiners; at Te Kuiti, one; Helensville, one; Huntly, two; Morrinsville, two; Paeroa, one; Rotorua, one.
15. Those are your train-examining stations?—Yes.
16. What about Whangarei and Dargaville Sections?—They came under a Traffic Manager.
17. So far as the Car and Wagon Inspector is concerned, does he remain in Auckland altogether, or does he go up and down the section and inspect?—He is constantly travelling about.
18. I suppose it is his duty to report anything unusual to you?—Yes.
19. Do you also make visits of inspection?—Yes, I am travelling over the section frequently.
20. Except when you are travelling, where do your duties keep you?—My office is at Newmarket, but I am frequently at Auckland in the yard, and in the Newmarket shop.
21. The duties of the Car and Wagon Inspectors are defined by the Locomotive Code, which I have put in—numbers 328, 329, 330, 331, 333, 335, 336, 342. These rules provide for the duties of Car and Wagon Inspectors, and also train-examiners?—Yes.
22. Have you found your staff competent, or otherwise?—Thoroughly competent.
23. Have you at any time found any reason to complain that your staff or any member of it was not doing what you considered to be his duty under the provisions of the Locomotive Code?—No.
24. Then the rolling-stock is subject to examination and inspection by the Locomotive Engineer, the Car and Wagon Inspector, and the train-examiner?—Yes.
25. In addition to these inspections, has it been the practice for an inspection to be made from time to time by the Chief Mechanical Engineer from the Head Office in Wellington?—Yes.

26. Has he during the last three years made periodical inspections?—He has made frequent inspections, and I may say he is most particular in carrying them out.

27. Have you found that there has been any difference in the requirements during the last three years for the inspection of the rolling-stock by you and those under you—I mean any difference emanating from the instructions of Head Office?—Yes. Mr. Jackson is particularly strict: he is continually impressing upon me the necessity for keeping the stock in first-class condition.

28. When you say he is “continually impressing” upon you, are you speaking of the occasions when he has made his inspections?—At all times. I cannot give him a chance to find fault with anything. I mean by that I am particularly careful to see that everything is kept in the very best order.

29. I take it that you would expect to hear about it if, on the occasion of any inspection made by Mr. Jackson, he found something was not “O.K.”?—Yes.

30. Have his inspections been as frequent as those of the officer whose place he took?—Much more frequent.

31. When you came up to Auckland and took over the charge of the rolling-stock, speaking generally first of all, in what condition did you find the stock?—In good order.

32. May the Commission take it that you were satisfied at that time that you were taking over rolling-stock which had been well maintained?—Yes.

33. Still speaking generally, how does the condition of the rolling-stock compare now with the condition when you took charge?—I am perfectly sure that it is quite as good, if not better. I consider it better.

34. Has any expense been spared which you consider necessary to be incurred in the interests of safety?—Never.

35. Do you know whether there has been as great a percentage of cars going through the repair shops per annum during your time as previously?—I think, just about the same.

36. Has the number of your carriages and trucks increased?—Yes.

37. Are stocks of spares kept up in this district?—Yes, the Car Inspector keeps a stock; the shops have a small stock, and the Stores Department keeps a stock.

38. Is there a big stock kept?—No.

39. Whence, then, do you draw your supplies from time to time?—From Wellington.

40. Are you in a position to give the Commission any information as to whether the stores and stocks of spares have been kept up during the last few years?—All I can say is that we have experienced no difficulty in getting stores.

41. You do not mean, of course, that you always get what you want in stock at Newmarket?—No. I mean that I can get it by wiring Wellington. If anything is getting short it is brought under my notice.

42. Now, coming to the question of springs, both on carriages and wagons, these have both bearing-springs and draw-bar springs?—Yes.

43. Do not the bearing-springs affect the safety of the stock and of the public?—Yes.

44. Do the draw-bar springs affect the safety of the public?—No.

45. As regards bearing-springs, do you find that they break?—Very rarely.

46. Supposing a carriage or a wagon is found with a bearing-spring broken, what would be done with that carriage?—It would be stopped at once.

47. Would it be dangerous to run a carriage or a wagon with a broken spring?—It would, because of the unequal weight on the different wheels. There would be danger of derailment.

48. Does that apply equally to a wagon and to a carriage?—Particularly to a wagon, but it would also apply to a carriage.

49. Have you ever known a carriage or a wagon run with a broken bearing-spring under any circumstances whatever?—No.

50. Would it be safe, or would it be possible to piece together two pieces of a bearing-spring and to insert those under a carriage in lieu of a new bearing-spring where a spring is broken?—It would be possible, but it would not be safe, because it would be liable to get out of place.

51. The spring is in a vertical position, is it not?—Yes.

52. Have you ever known, under any circumstances whatever, two pieces of a bearing-spring to be pieced together and used as one spring?—Never.

53. Have you ever known that course adopted in respect to the draw-bar spring?—Yes.

54. Is that a practice which has originated during the last three years?—No.

55. How long have you known it?—For many years.

56. Is the practice adopted in respect of carriages?—No, only in wagons.

57. Are many of these draw-bar springs broken?—A good number.

58. How and in what way generally are they broken?—Generally through rough shunting in the yards.

59. Have you actually seen two pieces put together and used in a wagon?—Yes.

60. Is it a practice that you yourself have authorized?—I never issued any instructions on the subject, but I have told my men to do it.

61. Then it is a practice which you have authorized?—Yes.

62. Does it in any way affect the safety of the train or the people travelling on it?—Not in the slightest.

63. It is a horizontal spring, is it not?—Yes.

64. Can you tell the Commission the approximate weight of one of these draw-bar springs?—I do not quite know. I agree that 19 lb. would be about the weight.

65. What length of space does one of these springs occupy?—Seven inches.

66. There are two of them, are there not?—Yes.

67. Have you even known any accident, either to a member of the public or to a member of the Railway service, arise from the practice of fitting together two pieces of draw-bar springs to form one spring?—No.

68. Where you use two pieces of a draw-bar spring to form one spring, what is the difference between using two pieces like that and using one complete spring?—Practically no difference, because we pick out pieces that join together so as to make a spring of the same length—that is, 7 in.

69. Is anything done to tighten these two pieces up in any way?—They are always tightened up about $\frac{3}{8}$ in. or $\frac{1}{2}$ in.

70. Do you get the same extent of resiliency as with one complete spring?—Practically the same.

71. It has been said that when you have two pieces of a draw-bar spring used in this way they form a solid mass of metal and have no resiliency at all?—I cannot understand that.

72. Is it a correct statement?—No.

73. Does the practice of using two pieces of a draw-bar spring in this way increase the wear-and-tear?—Not in the slightest.

74. Is there any tendency for that practice to damage the undergear in any way?—No.

75. Would you tell the Commission, then, if you say that the draw-bar spring is not a matter of safety, why you do not adopt it in the case of carriages—that is, to use two pieces to form one spring?—The two pieces are probably not quite so elastic as the one spring, and we always reckon to have the very best in the carriages, although I am quite sure nobody would notice any difference.

76. The draw-bar spring, then, affects comfort more than safety?—Yes.

77. But you do not think a person travelling in the carriage would notice any difference?—No; but in the case of carriages we use the best.

78. Have you any carriages or wagons in Auckland without draw-bar springs?—No.

79. Do you know of any carriages or wagons which are used upon the New Zealand railways without draw-bar springs?—The only ones I can think of are some coal-wagons used in Wellington on the wharf.

80. Are they perfectly safe to run?—Quite safe, but not very comfortable.

81. I suppose you have in Auckland a considerable quantity of rolling-stock which the members of the Commission could examine?—Yes, there is always a quantity of rolling-stock here.

82. I suppose you always have a certain amount of rolling-stock in the shops at Newmarket?—Yes.

83. I apprehend that you can only speak of the condition of the stock in your own district during the time you have been up here? You have not been away from the district?—No, only casually.

84. You say, as far as this section is concerned, the condition of the rolling-stock has not in any way deteriorated?—I am quite confident that it has not.

85. I suppose a good deal of the stock is interchangeable—you may get Wellington stock here?—Yes; all the wagon stock is interchangeable, and some of the carriages are interchangeable.

86. Then you have seen a certain amount of rolling-stock from other parts of the North Island?—Yes, certainly; it is continually coming here.

87. Is that examined in any way?—It is just treated the same as our own.

88. Does your answer that the condition of the rolling-stock has not deteriorated apply equally to the stock that has come from other parts of the Island to Auckland as to the Auckland stock?—Most certainly.

89. Have you had any suggestions made at all that accidents have arisen during the last three years through the defective or inefficient state of any of the rolling-stock?—No.

90. Do you yourself, as the result of your inspections in the yards or elsewhere, find it necessary at times to send carriages or wagons into the shops for repairs?—Very rarely. Of course, if I saw anything wrong I would write to the Car and Wagon Inspector.

91. Do you yourself, as a result of your inspection, ever find it necessary to send a car into the wagon-shops?—Very rarely; in fact, I do not remember ever having to do so.

92. I suppose the sending of wagons and cars into the shops is a matter, speaking generally, for the Car and Wagon Inspector?—Yes.

93. Can train-examiners do that on their own responsibility?—Yes.

94. Are repairs done at places other than the shops at Newmarket in your section?—Yes; light repairs are done at Auckland and Frankton—those are the chief places; but the other places where train-examiners are stationed do a certain quantity of light repairs.

95. And if any repairs are required which they cannot do?—It is sent to the shops.

96. Once a car or wagon has gone into the shops, by whom has it to be passed before it comes out again?—By the Car and Wagon Inspector, not by me.

97. The work has to be done and the repairs effected to his satisfaction?—Yes.

98. Does the work come under the notice also of the Workshops Manager or Foreman?—Yes.

99. Has the work to be inspected by both, or one?—They both inspect it in addition to the Car and Wagon Inspector.

100. Has there been any alteration in the design of underframes during the last three years that you can think of?—I cannot think of any alterations.

101. Reverting to the question of draw-bar springs, you have told us of a practice that has subsisted: is that a practice which has arisen merely because draw-bar springs may be at times short, or is it a practice that has arisen for any other reason?—It has been used at several times, even when we have new springs, because it is equally efficient, and it is a matter of economy.

102. Would it be possible to have a wagon, or a carriage for that matter, running with broken draw-bar springs without the break being noticed?—Yes.

103. Would any danger arise from that?—No.
104. *The Chairman.*] How long have you been in the Railway service?—Thirty-two years.
105. Do you remember during that time any occasion on which there has been a shortage of wagon buffer-springs?—Yes; the matter was brought under my notice in August, 1915.
106. But in previous years do you remember anything?—Yes, we have been short at times.
107. Going back for a long time?—Yes.
108. What steps were taken to remedy the shortage?—We would use the old pieces if they were suitable.
109. Have any other methods come under your notice?—I cannot remember any.
110. With regard to this piecing of the springs, how many pieces is the maximum which it is the custom to use?—Not more than two.
111. Is there any special preparation of the broken end of the springs to enable them to bed properly?—No; we pick out good pieces.
112. But the spring when it is whole has two flat ends: do you prepare the end of the broken spring in any way to butt against its fellow?—No; we pick out pieces with good ends.
113. Do you introduce any washer between them?—No. We put the two broken parts together; they join quite well. I could exhibit some such actually repaired spring.
114. And this practice has been carried on for a number of years, and has not been entirely due to shortage?—No.
115. In past years did the practice only obtain when there was a shortage, or was it adopted for economy?—For economy or shortage as the case might be. For economy when there was no shortage.
116. Do you find that the springs so pieced have a shorter life than the whole springs?—No.
117. You have not found there is an abnormal breakage among these springs?—No.
118. Have you any record of the mileage run by each wagon?—No.
119. Have you any record of the mileage run by each axle?—No.
120. Have you any system of replacing the axles after a certain period?—Yes. It is in the Locomotive Code.
121. With regard to the condition of the tires, is the car stopped for condition of tires by the Car and Wagon Inspector from general observation of the tire, or has he some fixed standard to adhere to?—He has fixed standards.
122. I take it there is some limit to the thickness of tires?—Most certainly.
123. That system is adhered to rigidly?—Yes.
124. *Mr. Marchbanks.*] Have you had any broken axles during the time you have been in charge up here?—I do not think so.
125. They are renewed after so-many years?—After fifteen. They are renewed according to Locomotive Code.
126. Have you had any cases of broken tires?—Yes; I can only remember one during the last three years. We may have had two or three, but my memory only takes me back to one.
127. Have you had many breakages of draw-bars?—No.
128. I notice you have a number of steel hooks in use: are they giving better service than iron hooks?—The hooks we use are wrought iron, stamped, and are stronger than the old flat hooks.
129. So far as the draw-bar springs go, is the number of breakages increasing compared with three or four years ago?—Just about the same.
130. Of course, the weight of the trains is increasing, and they get heavier shocks due to shunting, &c.?—The heavier weight does not come on to the draw-bar springs when hauling a train.
131. But it would in shunting?—Yes, there is a bigger shock then.
132. The spring is, I believe, the same style of draw-bar spring as used for a number of years?—No; we increased the size of it about seven years ago, and about a year ago it was still further increased.
133. Are there any round draw-bar springs in use?—Yes; the latest spring is a round section, one coil inside the other.
134. Have you known any derailment due to broken bearing-springs?—No.
135. Have you any trouble with elliptic springs?—No.
136. With regard to the Westinghouse brake, is there any trouble in keeping it maintained in good order?—The brake is maintained in thoroughly efficient working-order without any trouble at all.
137. The instructions in accordance with Locomotive Code are carried out?—The instructions in connection with Westinghouse brake are in a separate book. The triples are overhauled and tested once a year. It is kept in thoroughly good order. We are most particular about the brake.
138. Are many wagons run cut-out?—Very rarely.

DAVID ARTHUR MOORE sworn and examined. (No. 2.)

1. *Mr. Myers.*] You are a Car and Wagon Inspector in the Railway Department?—Yes.
2. How long have you been in the Department?—About twenty-five years.
3. What positions have you held?—From 1892 to 1902 I was fitter; in 1902 I was appointed leading fitter; in 1908 I was appointed Brake Inspector; in 1910 I was appointed Car and Wagon Inspector, which position I at present hold.
4. In different parts of New Zealand?—Both in Wellington and Auckland.
5. How long have you held the position in Auckland?—Two years.

6. Did anything particular strike you as to the condition of the rolling-stock on this section when you came up to Auckland?—No, nothing out of the ordinary.

7. What was the condition of the rolling-stock?—It was good.

8. That is two years ago?—Yes.

9. You had been Car and Wagon Inspector in Wellington for some years?—Yes.

10. How did it compare with the condition of the stock down there?—It was as good as the Wellington stock.

11. What do you say as to the condition of the rolling-stock here now?—I reckon it is in first-class condition.

12. Would you say that there is any difference between the condition two years ago when you came here and the present condition?—Yes, it has improved. We have put many improvements on the rolling-stock in the way of safety appliances, steps, grab-irons, strengthening the undergear, &c.

13. Are those improvements which have been made in all the rolling-stock throughout New Zealand?—Yes.

14. Do you know of any respect in which the cars or wagons here have deteriorated?—No, they have not deteriorated.

15. As Car and Wagon Inspector are you away from Auckland a good deal?—Yes; I travel the district frequently.

16. When you are in Auckland do your duties keep you constantly about the yards?—Yes; there is a certain amount of office-work to be attended to, too; I go to Newmarket mostly on Fridays and Saturdays for inspection of stock.

17. You have a number of train-examiners who are directly under you?—Yes.

18. How do they perform their duties?—In a most efficient manner.

19. Are they competent men?—Yes, every one of them.

20. You do not yourself, I suppose, effect any repairs?—At times, if there were no train-examiner about, and I was on the train myself, I would effect the repairs.

21. But, primarily, that is not your duty?—No.

22. You have train-examiners in Auckland, for instance, to do the work in connection with any car that either they or you may notice, and which could be repaired by them?—Yes, we have a special class of lifters for that class of work.

23. For what class of repair is rolling-stock sent into the shops?—Wagons may be due for lifting, and cars may be due for lifting, or broken headstocks, or broken undergear, damaged through rough shunting, &c.

24. Then I suppose they are sent into the shops for any repairs that cannot be quickly done by the train-examiners in Auckland or elsewhere?—Yes.

25. You say you go out to the shops on Fridays and Saturdays?—Yes, those are the principal days.

26. Are those the only days they send out rolling-stock that has been repaired?—No; the shops may be congested, and I will go out on any other day required.

27. Do they ever send out a vehicle that has not been examined by you?—Not unless I am out of the district, unless they get special permission from the Locomotive Inspector; if I was away he would be called in.

28. Any vehicle which has gone in there for repairs, whether sent in by you or a train-examiner, cannot come out without your approval, unless you should happen to be away, when they would refer to the Locomotive Engineer?—Yes; all vehicles receive my personal inspection before they leave the shops. That applies to new vehicles as well as repaired ones.

29. Have you a copy of the Locomotive Code?—Yes.

30. Is it your duty to know the contents of that code so far as they affect your duties?—Yes.

31. Do you keep any stock of spares yourself?—Yes. Spare springs and buffers—anything that may be required to repair and maintain a train is stocked.

32. Where do you keep that stock?—At all the stations. We keep it in Auckland in the repair-shops. We might carry a stock of five hundred spare springs in Auckland. The out-stations do not apply to Newmarket; they apply to Auckland. We also keep a stock of these things at all train-examining stations.

33. If you run out to whom do you apply?—To the Workshops Manager at Newmarket. If he cannot supply I apply to the Locomotive Engineer to procure them.

34. Have you found any difficulty in procuring supplies?—No; we sometimes run out because the stores have not forwarded the material on.

35. Have you ever found any abnormal delay in getting supplies required?—No.

36. Have you ever found breakages in the bearing-springs of carriages or wagons?—No, I do not think I have ever run across a broken coil bearing-spring; I have laminated springs, but not coil bearing-springs. I have not personally seen them, although I know they have been broken.

37. What has been done with the vehicles?—Immediately stopped, when under a load or empty, and retained where it was until a new spring was put in.

38. It would not be put into the shops?—No, that would be done by a train-examiner.

39. Have you ever known of a vehicle being allowed to run with a broken bearing?—No. My point is to keep the bearing-springs in good order.

40. Do you know of vehicles having been allowed to run with pieced draw-bar springs?—Yes.

41. To what class of vehicles does that answer apply?—Principally to the four-wheeled stock.

42. To carriages, vans, or what?—Only wagons.

43. Have you known of the same practice being adopted elsewhere than in Auckland?—Yes, they adopted it in the Petone shops.

44. Have you found any difference between the pieced draw-bar spring and the new draw-bar spring?—No, the pieced one is just as good for that particular purpose.

45. Of course, you must get the whole space filled?—Yes, it must be the correct length.

46. But so long as the two pieces are of the same length it is as good as one complete spring?—Yes.

47. And they work efficiently?—Yes. We have had no trouble or complaints about their not giving satisfaction since we started putting them in.

48. Have you yourself ever used or seen used more than two pieces?—No, the general practice is to use two pieces.

49. Do many of these draw-bar springs break?—Not on the road under running conditions. They are broken mostly through rough shunting. Under running conditions we very rarely break a spring.

50. Do you have them broken more often in wagons than in carriages?—Yes; they are subject to more rough handling.

51. You have, too, what is called a vehicle “not to run” ticket and also a “repair” ticket?—Yes, we have a system when a train-examiner examines a train coming in and comes across a defective vehicle he puts a repair ticket on it. The shunting staff notice the danger ticket on it and put it in the siding. I do the same if I run across a wagon like that.

52. Does the train-examiner have to report to you in every case when he sends a vehicle into the shops?—In Auckland they have a book where they enter up the wagons they have ticketed for repairs and the nature of repairs wanted. That book is handed into the leading lifter. Every Saturday that book is handed up to my office for inspection to see the number of vehicles that go into the shop.

53. You do not necessarily see the vehicle before it goes in?—No, not unless there is something special that requires my personal examination.

54. Then the train-examiner sends a report through your office here at the station. Supposing the train-examiner at Helensville sends one in?—He reports it to me, then I make out an order on the shops to have this vehicle repaired.

55. When you speak of a book, and of entries being made in the book as to vehicles sent to the shops, then you are speaking of local train-examiners?—Any wagon sent to the shops by the train-examiners in Auckland the list is sent in to me, and I make out the order on the shops to repair these wagons.

56. When a train-examiner repairs a vehicle, does he report that to you?—Yes.

57. Do you inspect that vehicle?—No.

58. Your train-examiner is quite competent?—Yes, it is only a light repair.

59. But in the case of everything except light repairs the vehicle has to go through your hands?—Yes.

60. You do not always see it before it is repaired, but you see it after?—Yes.

61. I suppose you can easily find wagons now in the station with pieced draw-bar springs?—Yes.

62. *The Chairman.*] When do you first remember this piecing of draw-bar springs being carried on?—It will be three or four years since the first time I noticed it.

63. Previous to that time do you remember any shortage of springs?—Yes, we would frequently run short.

64. What did you do then?—I am not quite sure what we did. My memory only carries me back three or four years with regard to broken springs.

65. Surely you must remember what was done? Does not your memory carry you back further than four years?—Yes, but not on that particular point.

66. Absolutely you cannot remember what was done when there was a shortage of wagon-springs previous to three or four years ago?—No, I really could not say.

67. With regard to inspection of vehicles coming out of shops, are those vehicles inspected by any one prior to you?—Yes, the leading hand makes an inspection, and I believe also the Workshops Foreman.

68. You are not quite certain about the Foreman?—No.

69. Have you ever had to stop vehicles going out of the shops?—Yes, I have frequently. If they are not to my satisfaction I stop them.

70. Have you stopped them for serious defects?—No, for trivial defects only.

71. *Mr. Marchbanks.*] Have you had any case of draw-bars being broken in service on the train?—Yes.

72. Many?—No, not many; now and again we have had a broken draw-bar.

73. Any damage to head-stocks?—Yes; not on the train, but on sidings where shunting takes place. Most of the damage is caused by shunting.

74. I understand you said that the use of draw-bar pieced springs applies to 15 ft. stock: is it not used on bogie stock?—It may be used on wagon bogie stock, but very rarely.

75. *Mr. Maxwell.*] How many years have you been Car and Wagon Inspector?—About five years.

76. *Mr. Myers.*] I think you said before that when you were using pieces of a draw-bar spring you used them in such a way as to fill up the whole space of 7 in.?—Yes.

77. Where do you get the pieces from?—We get them from the workshops. They have what they call a steel-heap they put their scraps on, and it is from that heap we select our springs.

78. Do you bring them down to the station?—They send them down to the station for the express purpose of being used.

79. And if you find two pieces that will fit you use them?—Yes.

80. And if you find two pieces that do not fit?—We send them back to the scrap-heap again.

81. You use a new spring, I suppose, if you cannot find pieces that will fit?—Sometimes we do when we cannot find pieces that will fit.

JOHN FRANCIS MCCARTHY sworn and examined. (No. 3.)

1. *Mr. Myers.*] What is your position in the Department?—I am Workshops Manager at the Newmarket Railway Workshops.

2. How long have you been in that position?—Nine years in my present position; prior to that I was seven years at the Government shops at Addington, and Workshops Foreman at Newmarket.

3. How long altogether have you been in the service of the Department?—Approximately thirty-three years.

4. Having been about nine years Manager you can tell us whether there has been during the last three years any change in the methods so far as the work connected with the rolling-stock is concerned?—It is practically the same now as when I took charge nine years ago—absolutely the same.

5. You construct vehicles there, do you?—Yes, we construct carriages, wagons, and brake-vans, and also do repairs.

6. Do you find that you have been kept as busy during the last three years in the repairing-shops as previously?—Undoubtedly.

7. And with regard to new vehicles?—We keep a special staff for new vehicles.

8. You are in charge of the shops: who comes next to you?—The Foreman. We have several Foremen and a Foreman Fitter.

9. What is Mr. Holder's position?—Foreman Carpenter; he has charge of the rolling-stock.

10. We have been told by the Car and Wagon Inspector that he sometimes sends vehicles into the shops for repairs, and sometimes the train-examiners send them?—Yes.

11. When the vehicles are sent into the shops do you always see them before any repairs are effected?—I do not always see them before the repairs, but I see them during the course of repairs.

12. I suppose there is always somebody there to take charge?—Yes, the Foreman takes charge, and he has two leading carpenters with him.

13. You say you always see the vehicles during the progress of repairs?—Yes.

14. I suppose you carry out a general superintendence of the work being done?—Yes, I satisfy myself it is being properly done.

15. When the repairs are effected do you see the vehicle before it is sent out?—I see them casually; I do not make any inspection of them, but I insist on the leading hands and Foreman Carpenter making an inspection before the Car Inspector sees them.

16. They are all tested, then, by a competent hand in your works before the Car and Wagon Inspector sees them?—Yes.

17. Do you ever make an inspection yourself?—Yes; when they are lined up I generally have a look over them—not very minutely, just a casual inspection of them.

18. Do you find the men employed under you are men competent to effect repairs?—Yes, absolutely first-class men.

19. You have told us already that the methods employed have not varied substantially?—They have not gone back in any way; they are better if anything at the present time—we have better methods of testing brakes and that sort of thing.

20. You only see the vehicles that are brought into the shops for repairs: have you nothing to do with the vehicles outside?—Nothing whatever.

21. So that you can only speak of the condition of the rolling-stock which comes before you?—Yes, what passes through the workshops; over a hundred wagons a month pass through.

22. What about carriages?—I suppose about six, eight, or ten a week, sometimes less, according to the repairs connected with them. I think about three hundred cars went through last year.

23. Do you keep any stock of spares out there?—Yes. We have plenty of timber; we make our own castings instead of keeping a stock of them; we keep anything in the way of imported spares—axles, tires, springs, &c.

24. Who looks after that stock: is it under your jurisdiction?—I have to approve all orders before they are passed into stores. My Foreman makes out the orders.

25. Are you speaking of the stores kept by the Storekeeper?—No, the stores we keep at our own shops.

26. We have been told there is also a Storekeeper: is that at Newmarket?—Yes, separate from the shops altogether.

27. Do you draw on him or his stores?—I draw on his stores for everything except timber and castings, which we make in the shops; we hold the timber in stock and make the castings.

28. Have you during the last three years experienced any difficulty in obtaining supplies of spares required?—Not in the slightest. There was a shortage of springs in 1915 for a few months, that is all.

29. What springs are you referring to?—Draw-bar and bearing springs.

30. How did you manage?—We had a pretty good stock; we did not run short to any great extent in the shops, but on the Locomotive Engineer's instructions I loaned some to the Inspector—280 springs.

31. Did you take them from new stock?—Yes; I had a large quantity of stores and lent them 280.

32. Did you have any difficulty in supplying bearing-springs where they were required?—No, we were never short of bearing-springs.

33. [Spring produced.] Did this spring come from your shops?—Yes.

34. What is it?—It is a draw-bar spring.

35. Is that one of the type you have been using?—Yes, that is one of the latest type.

36. We have been told that frequently where a draw-bar spring is required, instead of putting in a new spring you put pieces together: is that so?—Yes, on occasion, when our stocks are getting down a bit we might do it, not to a great extent, in the workshops. Out of a hundred broken springs you might only find half a dozen that would match.

37. Do these two pieces produced match?—Yes; they are level on the top and bottom.

38. Do you keep all the pieces of these springs that come in from broken springs?—Yes, if they are likely to come in for use.

39. Would you have any hesitation in using those two pieces?—Not the slightest for a draw-bar.

40. What kind of vehicle would you use them on?—Anything except carriages; I would put them on wagons.

41. How long has that practice obtained?—For many years; in the South I was in charge at Addington some years ago, and we did it there occasionally.

42. And the practice has also obtained here?—Yes; not to any great extent here—we do not get very many of them.

43. Can any harm come from using pieces like that?—No, I do not see that it could. If it broke in half a dozen pieces it would stay on the draw-bar.

44. Is the fact of using two pieces like that any different from using a whole spring in one piece?—It is practically the same. Of course, I would put a new spring from choice if I had any amount of new springs; although it is almost as good it is not quite so good.

45. Do you get many broken bearing-springs come into the workshops?—It is a very rare thing to see a broken bearing-spring.

46. Do you see many broken draw-bar springs?—Yes, forty or fifty a month, I should say.

47. In wagons or carriages?—Wagons particularly; you very rarely see one in carriages.

48. I suppose you would expect to find broken draw-bar springs in trucks rather than carriages?—Yes, they get rougher handling.

49. As far as you can see is the inspection of cars as rigid as it has been in the past?—Yes; it is impossible to get a car through without having it up to date in every respect.

50. You are speaking of both cars and wagons?—Yes.

51. Are you also supplied with a copy of the Loco. Code?—Yes.

52. Are your duties prescribed in that code?—Yes.

53. Has Mr. Murison his office in your yards?—Yes.

54. Do you have much inspection from Head Office?—Yes; we have the different Brake Inspectors round once or twice a year, the Boiler Inspectors round continually every three or four months, and oftener if required. The Chief Mechanical Engineer also comes round two or three times a year.

55. Does he come round as frequently as his predecessor?—Yes, oftener.

56. Do you find the various Inspectors fairly keen?—Yes; it is almost impossible to get a vehicle through unless it is right in every way.

57. I suppose your men all know that?—Yes, I insist on the Foreman Carpenter and leading carpenter being very strict and examining every point: that is done with a view to expediting the work.

58. Have you ever known any car or wagon sent out on the road in anything but an absolutely safe condition?—Certainly not.

59. Have you ever known a bearing-spring to be pieced together in two parts?—No, we would not tolerate it.

60. Why not?—We would not consider it safe; a draw-bar spring is carried on a draw-bar; the bearing-spring is simply caught top and bottom.

61. *The Chairman.*] When wagons come into the shops with pieced draw-bar springs, in what condition do you usually find those springs?—It is hard to tell if they have been pieced; they may be broken for the first time in the vehicle. Some are broken in several pieces, but there is no guarantee that they were the ones that had been pieced together.

62. When do you first remember this practice being carried out?—About twelve years ago, in Addington, when I was there they were using it.

63. Was that due to shortage or economy?—I think it was because they considered it safe to use, but they used them more frequently when there was a shortage.

64. Was there a frequent shortage of springs?—Not until this last time I spoke of in Auckland.

65. And when that shortage occurred the practice was adopted of piecing the springs?—Yes, only for draw-bars.

66. *Mr. Marchbanks.*] Has there been more repairing required during the last three or four years than previously?—Do you refer to draw-gear?

67. Yes?—Not since we have used the heavier springs; there has been less.

68. Is there more damage than previously to draw-bars?—No, it is not a very frequent thing to get a draw-bar damaged; it is generally a foul shunt that breaks it.

69. And hooks?—We have quite a number of hooks broken, but not more than usual.

70. Axles?—The same as usual. We very rarely break an axle.

71. In drawing springs for maintenance I suppose they are all drawn originally from the local Storekeeper?—Yes. I only draw for the shop.

72. Then the local Storekeeper has a record of all springs used for maintenance purposes?—Yes.

73. *Mr. Maxwell.*] What do you mean by “piecing” a spring?—It is the wrong term; what is meant is that they use the two pieces.

74. You do not mean you weld them together?—No, not in any way.

75. They are merely put one on top of the other?—Yes.

76. How much is the spring thereby shortened?—It is not shortened at all; we do not put the same spring together; we get a piece that will make up the 7 in.

77. You have been thirty-three years in the Department: do you remember the old rubber springs?—Yes.

78. How long have they been done away with?—About fifteen years. But the old rubber springs were not all dispensed with at once—they disappeared gradually. I could not say when they all disappeared; they were used on horse-boxes the last I saw of them.

79. Then the experience with the present draw-gear came about gradually; and was the method of using these broken springs started all at once?—No.

80. Can you give any idea as to how it came to be adopted?—I think, on the score of economy in the first instance. I remember they tested them a great many years ago under the steam-hammer.

81. *Mr. Marchbanks.*] You notice more of the broken draw-bar springs in the wagon stock than is in the bogie stock?—Yes.

82. Is there any reason for that?—It is not a higher proportion.

83. The bogie wagons are a good deal heavier than the four-wheelers; you would expect to get more?—Yes, but they carry a different class of goods.

84. Is there any instruction in the Loco. Code for bent axles? Do you have many bent axles?—Perhaps half a dozen in the year.

85. Do you know the causes of the bending?—Generally derailments.

86. And you straighten about half a dozen a year?—Yes.

HENRY FRANCIS HOLDER sworn and examined. (No. 4.)

1. *Mr. Myers.*] What is your position?—Workshops Foreman in the car-shop at Newmarket.

2. How long have you held that position?—About three years.

3. Where did you come from to take that position?—I was acting in that capacity at Hillside for five years; previous to that I was leading hand in the Newmarket Workshops for nine years up to 1908; I was a carpenter prior to that.

4. How long have you been in the Railway service altogether?—About thirty-three years. I joined in 1883 as an apprentice.

5. *Mr. McCarthy*, of course, is your superior officer?—Yes.

6. What are your duties in regard to the repair of vehicles?—To take over the rolling-stock under repair, and all new rolling-stock under construction, under *Mr. McCarthy's* direction; then I have a leading hand under me in the new rolling-stock department, and a leading hand in the repair-shop.

7. When a vehicle comes in who takes charge of it?—The leading hand on repairs and myself; in my absence, the leading hand. All the orders go through me in the shape of a "Loco. 43" with the number of vehicles and nature of repairs required.

8. You get a schedule of repairs required from the Car and Wagon Inspector, and very often straight from the train-examiner to the Manager from out-stations?—Yes.

9. Can you say whether there has been any alteration in the methods adopted in that part of the work which you control between the time you arrived and the present time?—I do not think so; I do not see much difference from the time I was here prior to the last appointment. In 1908 I was here as a leading hand.

10. You have charge of this repairing work?—Yes.

11. Do you direct the repairs to be done?—Yes, most of them.

12. And the nature of the repairs?—Mostly.

13. And who makes the tests of the vehicle after the repairs have been done?—They are put on a rake for the Inspector; they are marshalled, the brake is coupled, the Westinghouse is examined; nine out of ten times I would go round and see they are all right; in the fitting department they test the brake. The leading hand has a look at the vehicle after it is put on the rake.

14. Do you inspect the undergear yourself?—Yes; I do not make a set practice of examining every underframe. In my rounds of the shop each day there are hardly any vehicles going out which I have not seen at some time.

15. Then when these vehicles are marshalled for the Car and Wagon Inspector he comes round, does he?—Yes; but before he comes round we are careful to see everything is right, as the Manager has given us a good shaking up now and again owing to the Inspector having discovered a bolt loose or something similar, and he has taken it up very severely with us once or twice for not having everything perfect before the Inspector comes along.

16. How have you found the Car and Wagon Inspector?—He is pretty rigid—I think, over-rigid in many things. We have an argument now and again about standardization; there are lots of things we standardize as opportunity offers when there is nothing unsafe about the thing, and we leave it until the vehicle is in for heavier repairs, and the Inspector and I sometimes have a few words over it.

17. Then he is a pretty careful man?—Yes, I think he is overrigid.

18. Have you got a pretty good lot of men under you?—Yes, I consider so. We have the same men on the repairs all the year round. When the work gets a little ahead of us we have to draw men from the new work and put them on the repairs. They are not strange to the work; they are there week in and week out.

19. Do you ever see *Mr. Jackson* round the shops?—Oh, yes; I suppose we might see him there at intervals of two or three months. He goes right through all the shops if he notices anything there is any doubt about; he then asks for blue prints.

20. Speaking generally of the undergear on these vehicles, what would you say as to whether or not they are kept in good order and repair?—I reckon they are kept in good order; it would not do for us to let anything go out that was not in good order. The Manager often comes through the shop twice a day, also the Engineer. Everything is clear—they can see the underframe of a vehicle; if we tried to get anything past them we would have to keep it covered over.

21. Is there any reason why you or the other men should?—No, not a particle. I do not see how he could get anything shoddy off, because so many come round.

22. You know what I mean by the term “false economy”?—I know what false economy is.

23. Do you think there is any false economy practised?—No, the Manager will not have any false economy. He says he will not have a “brum” job; that is his idea of false economy. When you have a vehicle on the stocks it is better to repair it properly than to get it back in about six months.

24. Do you have to put many new bearing-springs in carriages or wagons?—Not very many. We might get one now and again with the end knocked off or not sitting properly—we replace those; or if they are not the same height we might take them out and put two of the same height in, but we do not put them back with a piece broken off the top, where they mostly break.

25. Have you ever seen a bearing-spring put in in two pieces?—No, you could not put it in; it would not stop there until they got the vehicle out of the yard.

26. We have been told that in the case of these draw-bar springs you put them in in two pieces?—Yes, we have put those in, but it is only when our stock might be getting a bit low that we bother with a broken spring.

27. You have known that practice adopted here in Auckland: have you known it adopted elsewhere?—Yes; I have seen them used at Hillside, and Newmarket prior to my going to Hillside.

28. Have you ever had any objection raised to the practice on the ground that it is unsafe or any other ground?—No, not a particle.

29. Do you ever find vehicles sent into the shops for repairs which you thought could have been done by the examiners?—We would not question that at all. Something may be stopped at Newmarket Station that it would not be worth sending on to town. We do not question it at all.

30. Of course, you know that when it is a question of minor repairs they are frequently effected by the train-examiners?—Yes; sometimes in the latter part of the week Mr. Moore sends his minor repairs out to us when he has too many, and we have to deal with them.

31. *The Chairman.*] What is your practice when a wagon is sent into the shop for repairs by the Car and Wagon Inspector?—We very often examine it, and sometimes we have the lighter repairs done before we get the Loco. 43.

32. Who examines it?—Either the leading hand or myself. I would probably examine half myself, and perhaps he examines the other half. I have one leading hand on the repairs and one leading lifter.

33. And the responsibility of examination is divided between you and the leading hand?—Yes; it is my duty to go round them. I cannot always be on the repairs, but anything the leading hand is in doubt about he refers to me. I very often go round, and the Manager has a set programme that on a certain day we are to work on particular vehicles.

34. Then you give general inspection to the repairs while they are going on?—Yes.

35. On a wagon going out of the shop on completion who inspects it?—The leading hand mostly. He is supposed to see that it is right before it is put on the rake and if it is due for Westinghouse—the fitting-shop repairs—he draws the attention of the leading fitter, and if the lifting is due the leading lifter looks it over.

36. You do not personally inspect every wagon that comes in?—Not every one. I suppose I would see 75 per cent. of them.

37. With regard to the draw-bar springs, when do you remember them first being put in in two pieces?—I do not think we have put any in in Newmarket since I was there this last time until last August or September, when we were getting low with the new ones.

38. Going back, what is the earliest date of your connection with the Railway service that you remember them being used?—About fifteen years ago—a spring with a bit smaller bearing that was in use at that time.

39. Was that due to shortage or desire for economy?—I think it was more for economy than anything else.

40. About what proportion do you think you have been putting in at Newmarket since you have been there?—I do not think more than one hundred or one hundred and twenty altogether.

41. How many wagons have you put out during that time you have been Foreman at Newmarket?—I suppose about 3,600 during the last three years.

42. How many of those wagons went out with pieced springs?—Not more than a hundred.

43. Then out of 3,600 wagons you have only turned out about a hundred with pieced springs?—That is about all.

44. *Mr. Marchbanks.*] I understood you to say that you knew the pieced springs were used about fifteen years ago?—Yes.

45. And that they were used at Newmarket before you went to Hillside?—Yes; at different periods, just when there was a shortage of the solid spring. I have known of them being used fifteen years ago, but the only time they were used under me as Foreman was in August, 1915, when we were short of new springs.

46. Did you see them when you were a leading hand prior to that?—Yes, fifteen years ago; and I have known them used at Hillside, but not in large quantities. Of course, we never thought of using them on anything but wagons, either bogie or 15 ft. stock. We kept the good springs for passenger-carrying vehicles. We always saved the broken springs in the scrap-heap.

47. Have you known any bad effects from the use of them?—No.

48. You would not be able to tell if a pieced spring failed later on, would you?—No, but we have never noticed any of the wagons that have had pieced springs put back for damage.

JOHN FRANCIS MCCARTHY re-examined. (No. 5.)

1. *The Chairman.*] A statement has been made that of late years painting of vehicles has been seriously affected: has there been any different practice in painting during the last three years?—No.
2. Have you done as much painting during the last three years as previously?—Yes.
3. You have had no instructions to reduce the amount of painting?—No, we have not.
4. Practically the painting is in your discretion?—Yes.

JAMES FORRESTER MACKLEY sworn and examined. (No. 6.)

1. *Mr. Myers.*] What is your position in the Department?—I am Brake Inspector.
2. That is the air-brake?—Yes.
3. How long have you been in the service of the Department?—About twenty-seven years.
4. How long in your present position?—About four years.
5. Have you done any car and wagon inspection work?—Yes. I have relieved the Car and Wagon Inspectors throughout both Islands.
6. Over what period of years?—Over the last three years and a half.
7. On what sections?—On all sections.
8. What had you been prior to the last four years?—I was leading fitter in shops on the West Coast and also in Addington.
9. Had you been employed in the repair work?—Yes, repair work particularly.
10. From your inspection over all sections during the last three years and a half you can perhaps say as to whether there has been any change in the methods of the work of the supervision from the time when you started?—No, I do not think there has been any material change; if there has been, I think there has been a distinct improvement from my first experience up to the present time.
11. When you are acting as Car and Wagon Inspector do you see every vehicle that comes out of the shops?—Every one.
12. What is your method of inspection?—The usual practice is to inspect the whole of the undergear as to its general condition, and also the top gear—that is, including the gates, and also the insides of wagons and cars. The vehicles are inspected thoroughly both inside and outside, on top and underneath; the height of the vehicle is also taken, the wheels are gauged, and the condition of the vehicle generally noted. The Westinghouse brake is also tested in stock before it is sent out of the shop.
13. Can you say whether any, and if so what, safeguards in the direction of inspection have been relaxed during the last three years and a half?—There has been no relaxation in the inspection of vehicles at all.
14. What condition have you found the rolling-stock in generally in the sections over which you have inspected?—In very excellent condition.
15. When you have been on these different sections inspecting you have had to perform all the duties of Inspector, I take it—not merely inspection of the vehicles that have gone into shops for repairs?—No, I take up the work of the Car and Wagon Inspector.
16. I suppose, then, you have a pretty good general knowledge of the rolling-stock right through New Zealand?—Yes; I think I have as good a knowledge of the rolling-stock in New Zealand as perhaps any man in the service.
17. Through having inspected it on each section?—Yes.
18. You know it has been suggested that the condition of the rolling-stock, and particularly the undergear, has deteriorated of late years?—I have heard remarks to that effect, but it is quite untrue.
19. Have you discovered from your inspections any foundation for any such statements?—None whatever.
20. You know, do you not, that a good deal has been made by way of criticism of the practice adopted of using a pieced draw-bar spring?—Yes; I think they have been used for a very short period.
21. What do you mean by a “very short period”?—Over a period extending for a month or two.
22. In any particular section or over various sections?—No, I think it was fairly general.
23. Do you know of your own knowledge whether the practice dates back, and, if so, for how long?—I can only speak within my own experience as a Railway officer—that is, within the last four years. Prior to that I had little or nothing to do with rolling-stock, but since that practically the whole of my work has been centred in the rolling-stock.
24. Can you say when you first knew that pieced draw-bar springs were used?—I think it was some time in the year 1915. We were short of springs, and we made a practice of putting in two halves instead of the whole spring wherever we found it was practicable and not unsuitable for the job.
25. Do you see any objection to that?—None whatever.
26. Did you refer the question to your superior officers at all?—No, I do not think I have done so. I presume that they were conversant with the practice.

27. But you never thought it necessary to stop it or report it?—No.

28. Did you pass many wagons with pieced draw-bar springs that you can recollect?—No, not very many.

29. But when they came with pieced draw-bar springs you passed them?—Providing that the draw-bar springs were good pieces they were passed.

30. Do you see any loss of efficiency by using pieced draw-bar springs?—None whatever.

31. Or anything unsafe?—No.

32. *The Chairman.*] You say the inspection has not been in any way relaxed during the period you have been an officer of the Railway service. In the instructions for inspection you will find that the older instruction stated, with regard to the examination of car and wagon axle-boxes (Locomotive Code, clause 345), "All wagons not exceeding two years." This has been replaced by a statement to the effect that "Cars and brake vans on branch lines or local trains, also wagons Classes G, H, J, S, T, V, Vb, and W, at intervals not exceeding two years. All other classes of wagons at intervals not exceeding three years." What is the effect of that alteration?—The effect generally, I think, is to allow more work to be done to vehicles: that is, we find that many of these vehicles are not perhaps used very largely, and it is totally unnecessary to lift a vehicle that is not doing a very great deal of work. All our main-line stock on our main expresses throughout both Islands is attended to every six months; but if we have cars and wagons that are stationed at out-stations and are used only in an emergency, it is unnecessary to lift them each year or six months.

33. It has had the effect, then, of making the period between inspections longer?—Only so far as the shops inspection is concerned. But although these vehicles are not going into the shop, it does not necessarily follow they are not being inspected, because the Inspectors inspect the cars regularly.

34. Do the regulations, then, only apply to inspections in the shops?—Yes.

35. And have no bearing on inspection on the road?—None at all.

36. Have you read these instructions, that for dropping the axle-boxes the cars must be put into the shops?—Yes.

37. You do not drop them on the road on sidings?—Not unless it is necessary. We do not lift the car on the road.

38. You have interpreted these instructions in such a way that it would necessitate sending the cars and wagons into the shops for axle-box dropping?—Yes, that is the usual practice.

39. *Mr. Maxwell.*] You described just now how you inspected stock. Do you usually apply the gauge to the wheels and tires?—Yes; we have a fixed gauge showing the standard height of all vehicles, and that is applied to every car before it goes out of the shops. We have also our standard wheel-gauges, and they are applied to all wheels before they are passed out.

40. That is almost invariable?—That is at all times, whether they are new tires or old tires.

41. Just now you told us that when piecing of springs is done the spring is never shortened, because you select two pieces to make up the length?—Yes; these springs must be kept to our standard length.

42. *The Chairman.*] In gauging the tires you say there is a gauge which takes the two tires simultaneously: is that applied to two points or three?—It is applied to two points.

43. *Mr. Marchbanks.*] I understand that at times there has been a shortage of draw-bar springs: has there been a shortage of any other springs or any other material?—Not any in my experience. We have been able to get any spare parts required; we have an ample supply of Westinghouse gear. The draw-bar springs is the only shortage in my experience.

44. *The Chairman.*] In regard to this gauging of the tires and wheels, do you know whether this practice has been in any way relaxed or increased?—No; it has been the recognized practice for a great many years, and is still followed. I may say that although the Car and Wagon Inspectors make a practice of gauging the wheels at two points, these wheels are also gauged before they are put in by the lifter, but to make doubly sure that no bent axles get into service the Car and Wagon Inspectors gauge these wheels from two points. It is quite impracticable to gauge them from three points, as it would make the work too lengthy.

THOMAS LLOYD MILLS sworn and examined. (No. 7.)

1. *Mr. Myers.*] You are in the employ of the Railway Department as a train-examiner?—As a lifter.

2. At what station are you employed?—Auckland.

3. You have been through the shops. I suppose?—Yes.

4. How long have you been employed as a lifter?—About eighteen years, as junior lifter and lifter.

5. Do you do any train-examination work?—I was train-examiner for twelve years and a half.

6. Do you have anything to do with the train-examination now?—No; now it is all repair work at the repair siding in the station-yard.

7. From whom do you take your instructions—from the train-examiners or the leading lifter? The leading lifter is really the man in charge.

8. How many lifters are there employed at the Auckland Station?—The full staff is seven.

9. Do the train-examiners assist you in your repair work?—No; they are down at the station and we are at the siding.

10. They do the examination and send the vehicles to you that require repairs?—Yes.
11. How do you know what repairs are to be effected: do you decide that or does the examiner?—The examiner tickets the vehicle and enters in a book what repairs are required, and this book is sent to us.
12. Do you have much repair work to do here?—Yes, about three hundred to four hundred vehicles a month—minor repairs—in a busy season; and it might drop to half that.
13. Can you give any indication of what is meant by “minor repairs”?—Any repairs that do not require sending to the shops. They are done at the siding in order to get them into service again—such as reblocking, or replacing a draw-spring, or Westinghouse hose or steam hose wanting renewing.
14. Having so many vehicles as that passing through your hands, have you formed any opinion as to the general condition of the rolling-stock?—All the rolling-stock before leaving the repair siding is fit for traffic; it is ticketed for repairs by the train-examiner, then repaired and examined by the man who does the job, and by the lifter after the job is completed; so that it really has a treble inspection.
15. Is it not seen by an examiner when completed?—Only on an outgoing train.
16. You say that the vehicle is not sent out unless it is fit for traffic: what do you say as to the general condition of the cars?—The general condition of the stock is good.
17. How long have you been at the Auckland Station?—Altogether about thirteen or fourteen years—that is, shops and Auckland Station.
18. How many years at the station?—Twelve years and a half train-examining.
19. How would the condition of the rolling-stock compare with its condition, say, three years ago?—About on a par; I do not see any difference.
20. It is kept in pretty much the same condition?—Yes.
21. Do you ever have to put bearing-springs into a vehicle?—Yes.
22. Often?—Not very often. If there is only one required we would do that; if any more, it would go to the shops.
23. Have you found many bearing-springs broken?—No, they do not often break.
24. Why would new ones be required?—If one corner is broken the spring must be replaced.
25. Do you find many draw-bar springs broken?—Yes, a fair number.
26. On which class of vehicles, as a rule?—More particularly wagons.
27. Then you have a good deal of work to do with draw-bar springs: do you keep any stock of them?—Yes, on the repair siding and at the store.
28. Do you keep any pieces?—Not now; we used to.
29. Why did you do so?—There was a shortage for a while, and we used to put two pieces in and washer them up and make them tight.
30. Where did you get all the pieces from?—We just sorted out the good ones from the broken gear we took out. We had a heap of them there.
31. How does the pieced spring work?—It is just as rigid as if it were all in one piece.
32. That has been your experience?—Yes.
33. Have you ever had any complaint made to you with regard to any draw-bar springs put in pieced like that, as to their not being efficient?—No, we have had no complaints; the leading hand would have told us if there had been.
34. For how many years has that practice been in existence, do you know?—Not very long—I do not suppose it would be more than four or five years. If we were stuck for a spring for a car we would take a good spring off a wagon and put the two pieces on the wagon.
35. How long have you known that done?—It would go back a good long while, because we might not have springs in stock, and would not hang a car up for that.
36. Can you give any idea of the time?—I could not say definitely.
37. Is it a matter of one or two years, or of a number of years?—The train-examiner does not do any repairs, but when I was repairing in the shops we used to do it. That is over fourteen years ago.
38. Then the practice is not confined to lifters or train-examiners, but also adopted in the shops?—Yes, if you are stuck.
39. *The Chairman.*] You say you are a lifter now and were a train-examiner: have you gone on the down grade?—No, they are on an equal grade now.
40. You are employed about the yard in Auckland here?—Yes.
41. From your experience, what is about the proportion of the pieced springs used to completed springs: what percentage of wagons would you say had pieced springs put into them?—I did not keep any record; I should say, a very small proportion.
42. *Mr. Marchbanks.*] Have you ever noticed a draw-bar spring which has been replaced in two parts come back into the yard for repairs?—It might possibly be repaired and sent out and get a bump and come back in ten minutes.
43. Have you found them broken into four?—It depends on the blow they got.
44. Will a pieced spring stand a blow as well as a solid one?—I think so. They are just as flexible as the whole spring.
45. Is there any shortage of any other material as far as you know?—We get all we want without any difficulty.
46. Do you drop boxes down there?—If a wagon comes in marked “Hot box” we drop it down to see whether it ought to go to the shops or not.
47. Has there been much in the way of damage to draw-bars that you have noticed of late years?—Nothing more than ordinary wear-and-tear.

HENRY WILLIAM BRIGHT sworn and examined. (No. 8.)

1. *Mr. Myers.*] You are a train-examiner at the Auckland Station?—Yes.
2. How long have you held that position there?—Three years and a half.
3. Were you a train-examiner before that?—Yes, at Morrinsville, for about six years and a half.
4. Were you a train-examiner before that?—No; I have only had ten years' service, and have been an examiner all that time.
5. What were you before that?—I was a seed-merchant.
6. Will you tell us are the duties of an examiner at a station like Auckland the same as at Morrinsville?—The only difference is that if any repairs have to be done at Morrinsville the train-examiner would have to do them himself.
7. In a station like Auckland a train-examiner does not do any repairs himself, but in the smaller examining stations the train-examiner has to do the work?—Yes.
8. What are the train-examiner's duties in a place like Auckland?—To thoroughly examine a train coming in, and also going out.
9. What about rolling-stock in the yards?—We do not attend to any rolling-stock in the yards.
10. You have to examine every train that comes in and goes out?—Yes.
11. Anything else?—No, our time is fully occupied with that.
12. Do you find that you have to send many vehicles to the siding?—Yes, a good number are sent for repairs.
13. Do you ever find vehicles that you have to send direct into the shops?—We never have instructions to send vehicles direct to the shops; we never do it.
14. You have a Car and Wagon Inspector here?—Yes.
15. What do you do when repairs cannot be done on the siding?—I notify the leading lifter, and he uses his own discretion.
16. You do not, apparently, examine a vehicle that you have sent to the siding after it has been lifted?—A wagon that has been at the siding for repairs and goes back on the train, of course, is examined again.
17. Yes, but you do not examine it at the siding?—No.
18. Is any sort of supervision exercised over you by the Car and Wagon Inspector?—Yes, the Car and Wagon Inspector often informs us about cars coming in or going out.
19. Do you see him about the station and yards at all?—Yes.
20. What is he doing down there?—I see him coming down the yard; he is generally walking about the station looking round if there is anything that could be done by the train-examiner.
21. How does the rolling-stock compare now in condition with what it was when you came here?—It is very good as far as I can see.
22. Do you find that there are more cars requiring to be repaired now than then?—No, I do not think so.
23. Do you examine the draw-bars when you are examining vehicles?—Yes.
24. Supposing you saw a draw-bar spring like this one [pieced spring produced] would you take any exception to it?—No, not if it was on a wagon.
25. Have you seen many of them on wagons?—Yes, I have seen a number.
26. Have you seen them come from the shops like that?—I cannot quite say that I have seen them come from the shops. I have seen them come in from the country.
27. Have you seen them going out like that from the station here?—Yes, I have.
28. Do you send a wagon in for repairs when you see it like that?—Yes, I have done.
29. When it has simply had the two pieces like that—why?—Yes, I always made it a rule until I was informed they were a bit short of springs, and I never did it after that.
30. When was that, do you remember?—About five or six months ago.
31. Have you frequently found wagons with draw-bar springs like that?—Yes, I have done so.
32. When you examine a train, what sort of examination do you make of the undergear of the vehicles?—We examine all the undergear, buffer-springs or brake-rods, cradle-rods, and the nuts on the buffers, and also see if there is any leak in the Westinghouse brake.
33. You say you joined the service ten years ago: were you a train-examiner right away?—No, I was in the lifting-shop.
34. How long were you in the lifting-shop?—About two years at Newmarket.
35. What did you do after that?—I was then transferred to Morrinsville as assistant train-examiner in charge of oil and steam engine.
36. How long were you doing that?—I was in Morrinsville five years and a half.
37. Then when you came to Auckland what were you first?—Train-examiner.
38. *The Chairman.*] You say you joined the services ten years ago and went into the lifting-shop?—Yes.
39. You were a seed-merchant before that: had you any experience of machinery previously?—I had as regards oil-engines.
40. Had you been running an oil-engine when you were a seed-merchant?—Yes.
41. Then you went into the lifting-shop as a junior lifter?—Yes.
42. Then you became assistant train-examiner and then examiner?—Yes.

Exhibit A put in—Schedule of Repairing Staff at Auckland and Out-stations.
The Commission adjourned at 4.15 p.m. for inspection of stock.

AUCKLAND, TUESDAY, 6TH FEBRUARY, 1917

FRANCIS EVANS PEPPERELL SWORN and examined. (No. 9.)

1. *To Mr. Myers.*] I am leading lifter at Frankton Junction, which position I have held for four years; prior to that I was gasman and train-examiner at Palmerston North for fourteen years; my total length of service in the Department is twenty-four years.

2. At Frankton I see most of the Main Trunk rolling-stock.

3. There are three train-examiners and two lifters at Frankton besides myself. I perform the duties of a train-examiner. I examine all stock that goes on to the repairing-siding. I examine all trains that arrive at Frankton during the day from 8 to 5.

4. All repairs to the stock done on the repairing-siding are done under my supervision. I examine trains and superintend the repairs, but I do not do any of the actual repairs myself. I examine all rolling-stock when it leaves the siding before it goes into service.

5. Trains arrive at Frankton at all hours, day and night, and they are all examined by one or other of the examiners; there is an examiner constantly on duty, day and night.

6. *Mr. Myers.*] Would you mind now giving us any information you can as to what you think is the general condition of the rolling-stock that comes under your notice at Frankton?—I think myself, personally, that it is right up to date; I cannot find anything the matter with it—that is, in the way of ordinary repairs. I know that if rolling-stock is not kept in repair it will deteriorate.

7. Will you tell the Commission whether, as far as you know and as far as you can see, all the rolling-stock that passes under your jurisdiction has been effectively repaired and the stock maintained?—As far as I know, everything is kept up to date. Any wagons that require repairs are put on the repair siding and repaired.

8. Will you tell the Commission how the stock now compares with the condition of the stock when you went to Frankton four years ago?—If anything it is better than when I went there first, on account of the use of more improved methods and extra staff. Having an extra man enables us to effect more repairs. For heavy repairs that we cannot effect ourselves we have to send vehicles from Frankton to the workshops.

9. *To Mr. Myers.*] They are now putting standard axle-boxes on all vehicles that go to the shops; new boxes are fitted to vehicles that have not already got them when they go to the shops. These boxes facilitate examination. The standard box has been fitted to wagons for this last ten years; it has been going on all the time, including the last three years, and is still going on.

10. I think at present that the undergear of the vehicles is as good as ever it was—in fact, better.

11. *Mr. Myers.*] It comes to this: you say, by increase of stock and improvements the trains are kept well examined, and all repairs are effected as required?—That is correct.

12. *To Mr. Myers.*] The bearing-springs in carriages and wagons are very seldom broken. When bearing-springs are discovered broken the car is stopped and the bearing-springs renewed right away. By "renewed" I mean a bearing-spring in one piece and not two pieces pieced together—the springs are always new.

13. We have a good few buffer-springs broken on wagons, but very few on carriages. When one of these springs is broken on a carriage the carriage is stopped and the spring renewed. In renewing these springs we put in absolutely new springs if we have them in stock on hand. If we have not got them and we know they are not to be got we do the best we can; but to my knowledge we never put in more than two pieces in one buffer-spring. The two pieces need not necessarily be of equal length—so long as we get the full length of 7 in. it does not matter whether they are equal or unequal. I find springs so pieced are as good as new springs.

14. I was in Palmerston fourteen years. For about ten years I was in the gasworks. I was engaged in the class of work I am now doing towards the end of my stay there. As far back as my knowledge goes the practice of using pieces for buffer-springs at Palmerston obtained five years ago—that is, when we could not get the new spring; we prefer using a new spring. The two-piece spring is not much easier to put in—you have to go through the same routine to put in two pieces as one. I never found any difficulty arise through using two pieces that way.

15. *Mr. Myers.*] Has it ever been suggested to you that that practice affects the safety of a vehicle or anybody on the train?—No, never.

16. *To Mr. Myers.*] With the old type of axle-box you had to get the bolts out, and you could not examine so quickly as with the standard boxes, where it was only a matter of opening the door.

17. *The Chairman* asked what proportion of wagons had two-piece springs, but witness was unable to state a proportion.

18. Suppose he went down a siding where twenty wagons were standing, how many do you think we would find with pieced springs?—Probably none.

19. *To the Chairman.*] It is only a short time during my experience that we have been short of good springs; our practice has been not to put in a pieced spring when we could get a good one.

20. *Mr. Maxwell.*] As far as you are concerned, in the districts you have been in during the last three years, do you consider proper provision has been made for the proper upkeep of the rolling-stock—proper tools, shelter, appliances, and stores to do the work?—We get everything we want. In the matter of springs that we were talking about just now, when we are short of springs it is because we cannot get them.

21. *Mr. Marchbanks.*] Do you think you have reasonable accommodation and reasonable tools?—Yes.

22. Do you have many cases of vehicles on a train arriving with broken bearing-springs—wagons or carriages?—No, very seldom.

23. Have you had many cases of vehicles arriving with broken draw-bars?—Yes, now and again, but very seldom.

24. Do you have any vehicles with broken axle-boxes?—No, very seldom.

DANIEL THOMAS MCINTOSH sworn and examined. (No. 10.)

1. *To Mr. Marchbanks.*] I am District Railway Engineer, Auckland Section.
2. I do not know of any accidents due to broken tires; there have been with broken axles—engine-axles. I have been ten years here; I do not know of any such accidents within the last three or four years. There was one—I do not remember where. I remember one at Wanganui when the axle broke. I do not know of any accident due to an axle-spring being broken.
3. We have derailments sometimes; during the last few years I should say the percentage of derailments is lower than previously; of course, the records will show whether this is so or not. All derailments are reported.
4. *The Chairman.*] Your opinion is that there has certainly been no more derailments during the last three years than in the previous periods?—No; I am only giving you my opinion; I have never looked up the returns. We are running more trains and long trains; there has not been a derailment for some months. Sometimes we get one or two close together, and then none for months; but it is very difficult to account for these derailments—they have happened on a straight line very often with loaded wagons.
5. *Mr. Myers.*] The accident on the Wanganui Section to which I referred happened about fifteen years ago. The other accident to which I referred I do not think happened during the last three years.

CLIFFORD JAMES DICK sworn and examined. (No. 11.)

1. *To Mr. Myers.*] I am a train-examiner at Morrinsville. I have an assistant train-examiner; we do the lifting between us; myself and assistant do the repair work.
2. All trains are examined that pass through Morrinsville, with the exception of one train, which is an empty train, running between Paeroa and Frankton.
3. We do a certain amount of repairing work at Morrinsville, but nothing like what is done at Frankton.
4. I have been just thirteen years in my present position; I have been in the service of the Department just on seventeen years.
5. *Mr. Myers.*] You are in a position, no doubt, to express an opinion as to the present condition of the rolling-stock, or at all events as much of it as passes through Morrinsville Station?—I consider it is in better condition now than ever in every respect. The axle-boxes, the under-frames, and all that sort of thing, in the wagons and cars, I think, are much heavier and stronger-looking than they were. The axle-boxes are handier.
6. No matter how good your appliances may be, I suppose they soon deteriorate if not well maintained and kept in repair?—I am sure they are well looked after.
7. You think, then, that not only have you improved appliances, but that the stock is kept in better repair and is well maintained?—Yes.
8. *To Mr. Myers.*] All the stock is not equipped with the new type of axle-box, but it is being done as fast as it can be done.
9. As far as I can say, during the past three years the work of equipping the rolling-stock with these new axle-boxes is going on as at great a rate as before.
10. It is a great improvement, because it facilitates and simplifies the examiner's work; it enables a more effective examination to be made, because you can see your bearings and everything, which was not the case with the old type; you had to take out the bolts, and it was almost impossible to do that in the course of an ordinary examination—you could not examine the bearings.
11. *Mr. Myers.*] What do you say as to the maintenance generally of the undergear of the stock?—It is well maintained and thoroughly looked after.
12. *To Mr. Myers.*] We only do light repairs at Morrinsville; we find it necessary to send one or two vehicles to the workshops now and again for repairs.
13. You might get a vehicle arriving at the station (Morrinsville) with broken bearing-springs once in twelve months, and you might not; you never see it on a car, but on wagons. If we find a wagon with a broken bearing-spring we take it off the train immediately and replace it with a new one: this is our invariable practice. We find vehicles at times with broken draw-bar springs—principally ordinary wagons. It is very rare to find carriages with broken draw-bar springs.
14. In the case of a carriage with a broken draw-bar spring, if the carriage is on an express train, and if examination shows that it would not cause any roughness in running or inconvenience to passengers, we let it go on, after marking it to be sent on to Auckland. If broken in such a way as to cause discomfort to passengers I would consider it my place to take the carriage off and fit it with a new spring.
15. *Mr. Myers.*] Do you often find the draw-bar spring of wagons broken?—It is always wagons, not cars.
16. Do you find many instances of broken draw-bar springs?—No, very few. You might strike a very heavy train with two, but it is very rare. In such a case, if the wagon is loaded with perishable goods and she is safe we allow her to go on to her destination, ticketed to be returned to us, and it is afterwards put on the repairing-siding and fitted with a new spring. If, however, it is considered unsafe, perishable goods are unloaded into another vehicle and the wagon put on the repair siding.

17. What spring would you put in to replace the one you took out—what would you do in order to repair the wagon?—If I had a new spring handy I would put it in; if not I would put it in in two pieces. We nearly always have pieces in the yard for the purpose.

18. Have you heard any objection to using a draw-bar spring in two pieces in the manner you describe?—None whatever.

19. How far does your knowledge of that practice go back?—I have seen it done at Clutha before I came up here, going on for fourteen years. I do not know of anywhere else; that is the only station where I was doing repairs: it has been done on two or three occasions at Morrinsville when short of good springs, because we could not get any other.

20. You would have to wait some days for a supply of springs: is it necessary to wait, or is it quite good enough to put together two pieces so long as you get 7 in. I would not keep a wagon waiting so long as I had two pieces to make up the required length.

21. Have you ever heard it suggested that it was in any way dangerous or improper to use two pieces in that way?—I cannot see where any danger comes in—not the slightest; nothing could go wrong.

22. So far as you know, is the use of two pieces like those on the table effective—do they make an effective draw-bar spring?—Just as good as a complete spring.

23. You keep a stock of pieces in Morrinsville to enable you to effect such light repairs as from time to time may be necessary?—Yes.

24. Whence do you draw your supplies?—We send a requisition at the end of every period of four weeks. If we run short in the meantime we send in a memo. to ask for the stuff to be sent out. We make our requisition to the Car and Wagon Inspector at Auckland.

25. Are your requisitions—whether at the end of the period or during the period—complied with promptly or otherwise?—Promptly, always.

26. Have you complaint of any sort or kind to make with regard to the question of obtaining supplies for the work you have to do?—None whatever. We get everything we ask for.

THOMAS PRESCOTT sworn and examined. (No. 12.)

1. *To Mr. Myers.*] I am leading lifter. I have held that position since leading lifters were appointed, about five years ago; before that I was train-examiner and engaged in repair work for about thirty-five or thirty-six years. I have been in the Auckland District all that time.

2. *Mr. Myers.*] We have been told that at times, when a draw-bar spring is required on a wagon, instead of a new spring being put in two pieces are put in, making the length of a new spring?—Yes, we have done that.

3. Do you do it now at times?—We have not done it since 1916 at the Auckland Station.

4. *To Mr. Myers.*] They are all new springs; we always have plenty of new springs to go on with. We were short of springs in 1914 and we put a few in. We have put springs in ever since I have been on the line.

5. I have known the practice resorted to at times of putting in two pieces instead of new springs. I think a two-piece spring is better than a new spring, because it stands the bumping of the trucks. These seem to come through—I have watched them.

6. *Mr. Myers.*] However, that is your view, right or wrong?—Yes.

7. Has it ever occurred to you that it is in any way unsafe to use two pieces like that on a wagon?—No, of course it is not.

8. As far as you know, do two-piece draw-bar springs work all right?—They work just as well as new springs.

9. You say that has been done at times during the whole time you have been in the service?—Yes.

10. You are the leading lifter in Auckland—does that mean you do any train-examination work at the station?—No, I do not do any train-examination at all. I have done in the past.

11. You work, then, at the repair siding?—Yes.

12. You do not see the vehicles requiring repair until they are on the siding?—I go round the yard; I do not see them until they are sent in by the train-examiner.

13. Can you tell us whether there is a train-examiner in the yard?—Yes; he examines wagons going out on loaded trains; he goes round and examines things, and puts tickets on them for the repairing-siding, and does not allow anything to go out unless in good condition.

14. Has this stock already been examined by other train-examiners who sent them in?—Yes.

15. So that he is a sort of additional check?—Yes.

16. *To Mr. Myers.*] The repairs on the repair siding are done under my supervision. I have a very good staff; I am quite satisfied with them and they do their work well. Besides my supervision there is the supervision of the Car and Wagon Inspector.

17. *Mr. Myers.*] Is that a real supervision or a casual supervision?—A real supervision; he supervises the whole lot of us, and we are under his instructions.

18. Does he see much of what is going on in the repair siding?—Yes, when he comes round.

19. Is he often round?—He gives us a look up now and again; he cannot always be there.

20. Is he what you would call a strict man or not?—I think he is a man with tact.

21. Does he see that the work is done?—Yes; if it is not done he wants to know why it is not done.

22. When the vehicles have been repaired at the repair siding are they examined by anybody before they go into service?—Yes; I examine them when they go in, and after they have been repaired to see that the work has been done properly.

23. You ought to know something of the rolling-stock here by now; speaking generally, what condition is it in?—I am sure the rolling-stock is in better condition now than ever it was, because the axle-boxes have been improved, the running-gear is better, and everything is improved all through. They have got to do it on account of the big trains and the big engines.

24. How do you find the condition of the stock compares with the condition three or four years ago?—It has improved.

25. You keep a stock of supplies at the repair siding?—Yes; it is requisitioned from Newmarket through the storeman, who sends his requisition through the Car and Wagon Inspector to Newmarket.

26. Do you find any difficulty in obtaining supplies when you want them?—No, the supplies are well kept up.

27. Have you found any cheeseparings or anything of that sort?—No; I have not noticed cheeseparings; the stock must be kept up.

28. And do you say it is kept up?—Yes.

29. *To Mr. Marchbanks.*] We have used pieced springs when there has been a shortage, but not when there is plenty. I prefer new springs, because they are easier to put in.

30. *Mr. Marchbanks.*] When those wagons come back for other defects have you noticed anything about the two-piece springs in such cases?—No.

31. *To Mr. Marchbanks.*] It is not common for draw-bar springs to get broken. There might be a flaw. On the big trains a few draw-hooks get broken. I think the new hooks stand better than the old ones. Much of the damage is attributable to shunting in the yards, and big trains outside.

32. *To the Chairman.*] I have put two-piece springs in wagons, and the wagons have come back to me for repairs. I have found new springs broken, but the two-piece springs come back in the same condition as when I put them in.

33. *The Chairman.*] I understand you to say that you made up your mind that if you saw that wagon again you would see how the two-piece spring was standing the test?—Yes; I have noticed a good many.

34. Have you ever had a wagon with a single-piece spring at one end and a two-piece spring at the other?—I have not done that.

35. It is a general idea on your part without any distinct experiment?—Yes; it is my general impression; I could not prove it.

36. *Mr. Maxwell.*] You think two short pieces are less liable to be broken again than one new one?—Yes, because of the wear-and-tear; if a spring is bad it breaks in three or four places.

37. *To the Chairman.*] A brittle spring will break in two or three places, but a spring that breaks in only one place will withstand hard usage. In a spring that fractures in three or four places you cannot use the pieces again.

AUCKLAND, WEDNESDAY, 7TH FEBRUARY, 1917.

JAMES RODGERSON SWORN and examined. (No. 13.)

1. *Mr. Jackson, Chief Mechanical Engineer.*] What position do you hold in the Department?—Workshops Foreman at Whangarei.

2. How long have you been in the service?—Thirty-two years.

3. How long have you been in your present position?—Sixteen months. Before that I was leading fitter for eight years in the Dunedin running-shed, and for the balance of my period of service I was a fitter.

4. Who is responsible for the maintenance of rolling-stock on the Whangarei Section?—I am.

5. How many examining stations are there on that section?—Only Whangarei.

6. Have you a proper staff for effecting repairs there?—Yes.

7. Who is responsible for seeing that no vehicle unfit for service remains in traffic?—I am.

8. Have you ever had any shortage of material for effecting car and wagon repairs?—No, not since I have been there.

9. Do you ever find broken bearing-springs in carriages or wagons?—No, not since I have been there.

10. Do you ever find broken draw-bar springs?—Yes, now and again, under the coal-wagons—not very often.

11. What do you do when you find broken draw-bar springs?—Replace them with new ones; and sometimes, but very seldom, put two pieces together. We usually put in new ones.

12. Have you ever known this practice of putting in two broken pieces to be used elsewhere?—I never had anything to do with carriage or wagon stock before I went to Whangarei.

13. Is the stock under your charge in good and efficient order?—Yes.

14. Is it in better or worse condition than when you went to Whangarei?—I think it is better.

15. Have you had any broken axles on your section?—No, never.

16. Any broken tires?—No.

17. *The Chairman.*] What staff have you under you who are concerned with the inspection of carriages and wagons?—Seven.

18. What are their ratings?—Three carpenters, three lifters, and a smith.

19. Have you any train-examiners?—One; but the lifters do that work as well.

20. Whangarei is the only station at which you examine?—Yes.
21. What proportion of the wagons on the Whangarei Section have pieced draw-bar springs under them?—Perhaps five out of four hundred.
22. You do not think there are more than that?—No.
23. Since you have been at Whangarei have you experienced any difficulty in getting draw-bar springs?—No.
24. How was it, then, you came to put in these pieced springs: were they put in in your time or previously?—Some were put in in my time.
25. Have you received any instructions since you have been there to practise greater economy in the use of springs?—No.
26. Have you received any instructions to put in pieced springs?—No.
27. Are there any pieced springs in the carriage stock?—No.
28. Do you consider it safe or desirable to use pieced springs in the draw-bars of wagons?—Yes.
29. Do you notice any difference in the behaviour of wagons with pieced springs as compared with whole springs?—No.
30. With regard to tires, have you appliances for re-turning the tires at Whangarei?—Yes.
31. How do you decide when it is desirable to turn a tire?—I try the gauges on it.
32. You work entirely by gauges?—I use my judgment and then apply the gauges.
33. *Mr. Marchbanks.*] Have you had any cases of broken draw-bars—not draw-bar springs?—There has been one case since I have been there.
34. Do you know how it was broken?—No.
35. What part of the draw-bar was broken?—Close to the round shank where it goes into the square.
36. Do you get many broken draw-hooks?—Not many.
37. Do you get very much damage done to the headstocks of wagons?—No.
38. Is most of your stock the four-wheeled type?—Yes, nearly all; we have only a small number of bogies.
39. Have you noticed wagons with pieced springs come back for repairs?—Yes, I have seen them come back.
40. Have you noticed cases where those pieced springs have been broken again?—No, they have stood all right.
41. They are put in under tension, are they?—Yes.
42. Screwed up to what?— $6\frac{1}{2}$ in.
43. That allows $\frac{1}{2}$ in. for compression?—Yes.
44. How is the brake gear maintained—have you the air-brake?—Yes.
45. Who attends to the repair of the air-brake?—We have an air-brake fitter.
46. Is the brake maintained in good order?—Yes.
47. Have you had occasion to run many wagons with the brake cut out?—No; we have occasionally.
48. When the brake is cut out the wagon is removed right away?—Yes.
49. *Mr. Maxwell.*] Did you say that you did not know whether the one draw-bar broken was broken in shunting or in running?—It was broken in starting away.
50. *The Chairman.*] Did you notice any flaw in the draw-bar that was broken?—Yes, there was a flaw.
51. How far did that flaw extend?—A quarter of an inch.
52. Was this on an old or new wagon?—It had been in service some time.
53. With regard to painting, how do you manage about painting stock?—We have a painter there for wagons. We get a painter up for cars.
54. Is the painting well kept up?—Yes.
55. Have you received instructions to reduce the amount of painting?—No.
56. That is left to your own discretion?—Yes.
- The Commission adjourned at 10.20 a.m. for purposes of inspection.

WANGANUI, MONDAY, 12TH FEBRUARY, 1917.

The Commission met at 10 a.m.

The Chairman: The Commission appointed to inquire into the condition of the rolling-stock of the New Zealand railways will now open, and as this is the first sitting in Wanganui I will ask the Secretary to read the warrant.

Warrant read.

Mr. Myers: The Commission will remember that in Auckland I put in a list of the persons constituting the repairing staffs at the various stations in the district. I propose to adopt the same course here, and I now put in a list showing the names of the persons constituting the repairing staff at the various stations from Wellington to New Plymouth, from Marton to Taumarunui, and also from Palmerston North to Napier. [Exhibit D.] My reason for doing that is this: that, though the Department may call certain persons in this list as witnesses, either here or in Wellington, we desire that the Commission should have the opportunity of itself looking through the list and asking that any persons taken promiscuously from the list should be called, either here

or in Wellington. We desire to give the fullest information to the Commission, and we will call any persons whom the Commissioners desire. Plainly, of course, it would be useless expense for us to call all those persons, because we believe it would simply be an iteration and reiteration of the same class of evidence. Therefore, the course that we have adopted and propose to adopt is to call one or two typical men, and to call any other persons whom the Commissioners may require. The Commissioners will find on the second page of the list those persons who are under the authority of Mr. Valentine, who is the Car and Wagon Inspector stationed at Wanganui. I propose to call Mr. Valentine himself, Mr. Kydd, the Workshops Manager at East Town, and Mr. Turner, the Workshops Foreman at East Town. Mr. Evans, the Locomotive Engineer for the district, is also in attendance, but whether I shall call him here or in Wellington I do not at present know. Then there is the list of the repairing staff at the out-stations, but I have not seen any of them, and have not decided whom I shall call. I suggest that if the Commissioners see no objection they should themselves indicate whom they would like, and I will have those men in attendance.

JOHN VALENTINE sworn and examined. (No. 14.)

1. *Mr. Myers.*] What is your position in the Railway Department?—Car and Wagon Inspector, stationed at Wanganui.

2. Your headquarters, I take it, are at Wanganui?—Yes.

3. And what is the extent of your district?—Taumarunui on the one side, New Plymouth, and down to Palmerston North. Of course, I have no control at Palmerston North, but I have to go there.

4. But it is really outside your sphere of authority?—Yes.

5. Do you inspect for the whole of that district?—I do.

6. How often do you inspect?—Once a month at least.

7. What proportion of your time would you say is spent on these inspectorial visits away from Wanganui?—Taking the whole lot, about half of my time.

8. About half of your time is spent at headquarters and about half the time on inspectorial visits?—Yes.

9. Now, when you are at headquarters is most of your time spent at Wanganui itself, or at East Town, or where?—Two days, or one and a half days, of the week are spent at the workshops, and the balance of the time in the office and in the yard at Wanganui and Aramoho.

10. What are the days on which you visit East Town?—Friday and Saturday in each week.

11. For what purpose?—Passing out stock that has been repaired in the workshops.

12. Do you mean inspecting when you say "passing out"?—Yes, inspecting.

13. You have a fairly considerable staff under you, have you not?—Sixteen men.

14. Their names are set out in the list [Exhibit D] I have just put in before the Commission?—Yes. There are really nineteen with the carpenter.

15. Is it a staff with which you are satisfied, or can you make any comments in regard to their improvement?—I consider the conduct and work of the staff are excellent. The best relations exist.

16. You have a good deal to do with the shops at East Town?—Yes.

17. Have you any comments to make in regard to the works or the staff at East Town?—No, none whatever—no adverse comments.

18. We invite any comments, whether favourable or adverse?—Yes.

19. Would you mind saying how long you have held your present position of Car and Wagon Inspector?—Two years and ten months. I was appointed on the 23rd March, 1914.

20. Had you been Car and Wagon Inspector previously?—Not for any length of time. I had filled the position of relieving officer.

21. What previous positions have you held in the service?—Prior to my coming to Wanganui I held the position of Workshops Foreman at Whangarei for two and a half or three years.

22. Without going into details, what other positions had you held?—I have held the position of journeyman fitter and leading fitter, and at Whangarei I also filled the position of acting locomotive-driver.

23. And have you been a train-examiner?—No.

24. What is the total length of your service with the Department?—Thirty years.

25. You have been here for nearly three years?—Yes.

26. You say you have no adverse comments to make in regard to the shops at East Town. I would like to ask you whether during the whole of that two years and ten months you have found reason to comment adversely in regard to the work at East Town?—No, I have never had any occasion to report to my superior officers any dereliction of duty in regard to the work at the workshops.

27. How does the work done at East Town now compare with the work done at the time you came here?—There is little or no change. The work since I came here has always been in fair order.

28. The point we want to ascertain is whether there has been any deterioration?—None whatever.

29. That applies to the work done at East Town?—Yes.

30. What have you to say with regard to the condition of the rolling-stock generally now as compared with what it was when you came here nearly three years ago?—The condition of the rolling-stock at the present time is as good as it was when I came here, and I am inclined to think it is better, because slight improvements have been made since.

31. You are not comparing your work with that of your predecessor?—No.

32. But you say there have been improvements—in the methods?—There have been improvements in the stock.

33. You told us that you make an inspection monthly of your district. Do you from time to time report to your superior officer?—I send in a report each month showing that I visited the various stations, giving the date of the visit, and fill in the column according to whether I find things satisfactory or unsatisfactory.

34. You have a number of men under you at the various stations, and train-examination work is done at a number of those stations, is it not?—Do you mean repair work?

35. I mean, first of all, train-examination?—Yes, train-examination is made at all stations mentioned in the list.

36. And is repair work done at every one of those stations?—Yes, but not heavy repairs.

37. Who decides whether vehicles are to be sent to the shops?—The train-examiner.

38. And after he sends a vehicle into the shop what does he do in the way of reporting?—He makes out a waybill, sending a duplicate copy to my office, stating the repairs that are necessary to be effected to the vehicles. Then we send a Loco. 43 in the regular order on to the work: that is an order on the Workshops Manager to perform the necessary work.

39. When minor repairs are effected on the repair sidings at the examination stations, you, of course, do not see them?—I may see them at the time of my visit, but otherwise it would be impossible.

40. But when vehicles go into the workshops you do see them before they are sent out again?—Yes, I have to inspect them previous to their leaving the shops.

41. Is that the invariable practice?—Yes, that is the general rule.

42. And have you ever known a vehicle of any kind leave the workshops and be put into service which was not in a safe condition for traffic?—No, I have no knowledge of any such thing occurring, and it has not been done, either.

43. Do they construct new vehicles at East Town?—Yes; they have built a number, in 1915.

44. Not carriages, I think?—No, wagons and brake-vans.

45. Who examines them and passes them, if anybody, before they leave the shops?—Myself. They are not allowed to leave till I have seen them or passed them out.

46. I want to now leave the new work out of consideration and I want to revert to the repair work. Will you tell the Commission whether the repair work is increasing or decreasing, or is apparently stationary?—The repair work is increasing. The number of vehicles that pass through the shops is considerably in advance of the number that passed through in 1915.

47. Would you say that the 1915 repairs were in excess of the 1914?—I have not looked closely into that. I will say that the increase in 1916 over 1915 is very substantial indeed.

48. What I want to find out is whether the tendency, not merely in one year but from year to year, is in the direction of an increase?—I have given you two years. 1914 was a broken year with me because I came in 1914.

49. Well, can you tell the Commission whether the number of vehicles in use on this section is increasing or decreasing, or is stationary?—The number is increasing in all classes.

50. Would you say that there is an increase year by year?—In connection with the wagons and carriages passing through the district, yes—that is, there is more stock handled.

51. So that in the natural course of things you would expect more repair work?—Yes.

52. Would you mind telling the Commission what in your experience is the most damage to vehicles attributable to—is it mostly attributable to actual running, or to work in the yards, or to shunting, or what?—A very large percentage of it is undoubtedly due to the rough shunting in the various stations right along the road.

53. Does that apply to wagons or to carriages, or to both?—Well, it applies to wagons more so than it does to cars, because at the wayside stations the cars do not stop there, but go right through. Of course, all along the lines there are timber-mills, and at various other places the wagons are put into sidings and subjected to various shunts.

54. I gather from you that by far the larger portion of the repair work is referable to the wagons—is that so?—Yes, considerably in excess.

55. Have you had many derailments in your time?—Three since I have been appointed Car and Wagon Inspector at Wanganui.

56. Have those derailments been derailments of cars or wagons?—Wagons.

57. Have you had any derailments of carriages?—No.

58. I apprehend you mean on the main lines?—Yes, three main-line derailments.

59. That is over the whole of your district?—Yes, the whole of my district.

60. And are those derailments inquired into by the Board?—Yes, by a Board set up by the Department.

61. Has each one of those three been inquired into?—Yes.

62. Do you know what was the cause in any of the cases?—No; I merely go there to give evidence and to give particulars of the truck. I am subpoenaed as a witness. I give my evidence according to what I find the condition of the wagon, and various other particulars in connection with the derailment, but with regard to the finding I am not present.

63. When there is a derailment are the vehicles that may have been derailed kept in the same condition for inspection by the Board set up by the Department?—Yes. At first the particular wagon is inspected. I should like to be clear upon this—that is, assuming the wagon would possibly be towed. Assuming it had been derailed on the main line and impeded the traffic, we would tow that wagon and get it to the nearest station, but it would not be put in commission again until it had been examined.

64. Have you had during your time as Car and Wagon Inspector any, and if so how many, broken axles?—No, none in my time.

65. Have you had any, and if so how many, broken tires?—None.

66. You must, I assume, see during the course of your inspection quite a considerable quantity of the rolling-stock of the North Island?—Yes, I see a very big percentage of it.

67. Now I come to the question of springs. Do you find many cases of broken bearing-springs?—I have never come across a broken bearing-spring in any vehicle except after a derailment; none that has been actually in service on a train.

68. You used the word "vehicle." I want you to be precise about this: does your observation apply to carriages, wagons, or both?—It applies to both, because invariably I may come to a mixed train which contains cars as well as wagons.

69. You have not on any vehicle, carriage, or wagon found any broken bearing-spring in your time here?—No.

70. Except after a derailment?—Yes.

71. You say there have been only three derailments on the main line here. I apprehend there have been derailments in shunting operations to which you have not referred?—Yes. They are not gone into so minutely as derailments on the main line. There is really no danger.

72. But may we take it that you have found broken bearing-springs after derailments in the yards?—No. One was a broken bearing-spring as the result of a derailment on the main line.

73. If you do find a broken bearing-spring what would you do?—Assuming I found it at an outside station where there was no train-examiner I should wire at once to the examining station to tell the examiner to look out for the vehicle, and stop the vehicle until a new bearing-spring was put in.

74. Where would it be put in—at the examining station or sent to the shop?—It would be sent to the shop.

75. And you say a new bearing-spring would be put in?—Yes.

76. Would it be possible to pack a bearing-spring by putting in a couple of pieces?—Not a bearing-spring.

77. I come now to the draw-bar springs. Do you find in the course of your duties many broken draw-bar springs?—Not when the wagons are in use—while the wagons are in transit. I have found one or two, but not a great number.

78. Does that observation apply to all vehicles, or to carriages or wagons?—It applies to all.

79. You say you have not found many broken draw-bar springs; but are there not a great many draw-bar springs used during each year?—Yes, a considerable number.

80. What are they used for?—I do not find them: my train-examiner finds them. Probably I may detect one on my journeys.

81. But do you know as a fact that a great many broken draw-bar springs are found?—Yes, I know that.

82. And I suppose it is part of your business to know how those things happen and what is done in order to put things right?—Yes.

83. Can you say whether the bulk of the draw-bar springs that are broken are broken in carriages or wagons?—Wagons.

84. And are they broken, speaking generally, in transit, or, if not, where and how?—They may be broken on the road or they may be broken at shunting.

85. Speaking generally, where does it mostly happen—during what operations?—There is a number broken upon the road—I suppose a percentage of them.

86. And I suppose a number of them would be broken necessarily in shunting operations?—Yes, a percentage in shunting operations.

87. When draw-bar springs are found broken in your district where is the necessary repair effected—at the examining station or in the shops?—It may be effected at the shops or stations. If it is only a draw-bar failure, a spring only, or a broken buffer, it is done at the examining station.

88. Have you known of a pieced draw-bar spring being used instead of a new draw-bar spring where the draw-bar spring has been broken?—Yes, I know they have been put in.

89. What is the greatest number of pieces you have known put in?—Not more than two.

90. I think you yourself sent out an instruction to your staff in consequence of an instruction which you yourself had received from Mr. Richardson, who was then Locomotive Engineer for the district?—That is so.

91. Did you then see any objection to this practice?—No, I saw no objection to it whatever.

92. Do you as a result of your experience see any objection now to the practice?—I see no objection whatever to it if applied to wagons.

93. Have you yourself used or at any time seen used a pieced draw-bar spring upon a carriage?—I have never authorized any to be put in, nor have I noticed any that have been put in, a carriage.

94. I want you to listen to this: would it be proper or correct to say that the instruction issued by you was to the effect that broken springs may be duplicated and put into *all* vehicles?—No, that was not the wording of my instruction.

95. Is it or is it not a fact that in your instructions carriages were expressly excluded?—Yes, they were excluded.

96. So that if the statement were made that an instruction had been issued by the Locomotive Department to the effect that broken springs might be duplicated and put into all vehicles, and if that instruction refers to the instruction issued by you, it is not correct?—No; my instruction is the correct one as received by me, and refers to four-wheeled stock wagons and not to any cars.

97. Have you found the use of pieced draw-bar springs on wagons satisfactory?—Yes; there is no detriment to the wagon whatever.

98. Does a broken draw-bar spring, as far as your experience goes, in any way affect the safety of the train?—No.

99. A bearnig-spring, of course, does?—Yes, that is another matter.

100. Assuming, of course, that you have got the whole length properly packed, does the use of a pieced draw-bar spring instead of a new draw-bar spring affect the wear-and-tear of a train or undergear?—No, not provided it is kept the proper length and the compression is there.

101. I have here two pieces of draw-bar spring which were produced in Auckland: would you see any objection to using those two pieces as they are?—None whatever.

102. You notice the length as compared with this new spring?—Yes.

103. How do they compare?—They are practically the same.

104. Well, if you used those two pieces that are on the table, you would have to bolt them, would you not, just the same as you bolt a new spring?—Yes; we would have to make it tight—we must have compression.

105. Would those two pieces bolted be kept in position in the same way as a new spring would be?—Yes, if there was a fair compression.

106. It has been suggested that if you used two pieces like those the result would be that a jerk of the train would form those two pieces into a solid compact mass, leaving several inches of slack connection between each of the vehicles in the train, if you had a number of vehicles that had similar draw-bar springs?—It is not possible.

107. Have you yourself ever had occasion to think or to suggest that the rolling-stock is in such a condition that you would decline to carry the responsibility on your own shoulders?—No, at no time. That question has never appealed to me, nor have I thought it desirable to make such a recommendation.

108. Have you had the slightest reason for thinking such a thing?—None whatever.

109. I think, as far as your knowledge goes, you have no knowledge except of the last three years as to pieced draw-bar springs?—No.

110. Your work did not bring you into contact with that kind of thing?—Yes, it did, in Whangarei.

111. But prior to that?—No, not prior to that. It did not bring me into contact with them.

112. Do you remember when this notice [Exhibit C] was issued by you with regard to draw-bar springs—I mean after Mr. Richardson's communication to you—it was in June, 1914, was it not?—Yes.

113. That was shortly before the war started?—Yes.

114. Did you take any steps yourself at that time to instruct your subordinate officers as to what was to be done apart from the actual notification to them?—Yes; during my visits to out-stations I got the men together and gave them illustrations of the way in which I required the spring to be put in.

115. Do you keep, or are there kept, any stocks of spares in your district?—Yes.

116. Where are those stocks kept?—We keep them here, and then distribute them to the respective stations as they require them.

117. Are you requisitioned in the first place from the different stations, or what happens?—Yes, I am requisitioned—the examiners requisition me.

118. And if you have spares in stock you send them out yourself?—Yes, they are sent out at once.

119. And then you requisition from time to time—to whom?—To the Locomotive Engineer, Mr. Evans.

120. Have you experienced any difficulty in obtaining supplies as you require them?—I have experienced no difficulty whatever in obtaining supplies other than the draw-bar springs during the period we have been speaking of.

121. You say you did have a difficulty in obtaining a supply of draw-bar springs during a particular period?—Yes.

122. Why was that?—I could only attribute it to a shortage of material and the difficulty in procuring them.

123. Did that go on for long?—It ebbed and flowed pretty well till 1915.

124. During 1914 it ebbed and flowed, and for a portion of 1915?—Yes.

125. Apart from that, have you ever had any difficulty in obtaining supplies?—No, I have never had any difficulty.

126. Do you find them sent to you promptly on your requisition?—Yes; they might cut the number down, but otherwise I get enough to go on with.

127. If there is a shortage they have to distribute, and you might not get as much as you order?—Yes.

128. And when your out-stations requisition you, have they any difficulty in obtaining supplies?—No; supplies are at once sent, and we do the same with them; if we have not got the quantity they require we cut them down.

129. You have no shortage of draw-bar springs now?—No.

130. Do you occasionally used pieced springs?—No, we are not using them now.

131. But have you during the last few months used them?—No, not during the last two months. We have used pieces up to a couple or three months ago, probably.

132. As a matter of fact, which is really the more troublesome, apart from which is the better to use—a new draw-bar spring or to look round and match a couple of pieces for a spring?—The train-examiner has certain work to do, and by the time he goes to the scrap-heap and selects two suitable pieces and measures them I think the time is pretty well the same as putting in a new spring.

133. It is quicker to use a new spring if you have it?—Yes, undoubtedly, and less trouble for the man.

134. You have told us of your inspection: do you have any inspection by the Locomotive Engineer?—Yes, by Mr. Evans.

135. How often does he come along and see you?—Every month perhaps, or every six weeks.

136. Does he see you when he comes?—Yes. He generally has a look round and inspects without me, and satisfies himself.

137. Do you know whether he goes to the shops?—Yes, he does.

138. In addition to that, have you any other inspection from the Head Office?—Yes, Mr. Jackson, the Chief Mechanical Engineer, comes up.

139. *The Chairman.*] How much time do you devote to office-work per week?—A matter of, say, twenty hours, but not each week.

140. What would the average amount to?—For a fortnight of the time I am really not there at all, but during the month I put in from twenty to thirty hours in the office. Of course, I have a clerk.

141. You do not find your office-work ties you down—you are not overburdened with it?—No, not with clerical work.

142. You say the only cases of broken bearing-springs you know of have been cases found after derailments—broken by the derailment?—The derailment was the cause of the spring being broken.

143. You say there was a shortage of draw-bar springs during 1914 and 1915: was that very marked?—Yes, the position was rather acute at one stage.

144. And you carried on the work by the use of pieced springs?—Yes.

145. Were any springs put in which were pieced in more than one place?—No.

146. Are you quite certain about that?—Yes, I am positive about it.

147. Were any broken springs that were only broken in one place allowed to run as they were after inspection?—That is a thing I do not know, unless it was very pronounced. One may be broken, but not broken sufficiently to make any perceptible difference—for instance, the same as that exhibit produced here.

148. You say that some broken springs which were known to be broken were allowed to run?—No, I do not know they were known to be broken.

149. Were any springs allowed to run which had been discovered to be broken—two pieces allowed to remain in?—They were allowed to run providing they made no difference to the draw-bar.

150. Then some were allowed to run?—Not if they made any difference to the draw-bar. If it allowed the draw-bar to pull out, or anything of that sort, then the spring was taken out and built up in a similar way to that spring produced.

151. You say you have discontinued using pieced springs now: why have you done so?—Because the others came to hand.

152. Did you receive any verbal or written instructions to discontinue the use of pieced springs?—No.

153. Previously you only used pieced springs when you could not get whole springs?—Yes.

154. What was the condition of the stock here when you took over?—In good order.

155. What was the condition of the stock last July?—Still in very good order.

156. Have you received any instructions since last July to expedite repairs to stock?—No. I may have received a memo. to say that an improvement was to be carried out or there was to be standardizing, or to make every effort to get the work done as soon as possible.

157. Have you received any memo. in respect of draw-bar springs since last July?—No.

158. There has been no special effort made since last July to expedite the removal of broken draw-bar springs?—No, because they have been found to be satisfactory, and then we do not take them out.

159. Has there been any special effort on your part or on the part of the officers to remove the broken draw-bar springs and to improve the draw-gear since July, 1916?—The only thing I can say is that if it had been noticed in a train the wagon has been stopped and the broken spring taken out and replaced by a new one.

160. You are not answering my question: Has the attention paid to draw-bar springs been greater since last July than previously?—No, I do not think there has been any more special attention paid at any particular time.

161. We have a report here of a statement you made on the 20th July, 1916: whom did you make that statement before?—Mr. Gillon, Relieving Locomotive Engineer.

162. Did you make that statement freely?—Yes.

163. Did that statement contain all you wished to say on the subject?—Yes, it contained all I had to say.

164. And all you desired to say on the subject?—Yes.

165. We may take that statement as absolutely correct, and you desire to add nothing to it?—Yes.

166. Coming back to the question of draw-bar springs, there is a very large number of failures of draw-bar springs, is there not?—Yes, that is so.

167. The only necessary spares you have been short of during the period you have been in charge here have been the draw-bar springs?—Yes, that is all.

168. *Mr. Marchbanks.*] You mentioned that you knew of three derailments since you have been here: do you know how many vehicles came off at each—were there a number of wagons or a single wagon?—As far as my memory serves me, at Mangaweka I think five or six came off. That was just at the mouth of the tunnel, on a slight curve.

169. Do you know the cause?—No.
170. You were not told what the finding of the Board was?—No. I examined the wagons carefully and supplied the Board with all particulars in connection with them, and gave my evidence at the inquiry, but I was not present at the finding of the Board.
171. Did you form any opinion as to the cause of the derailment?—No, I was not asked.
172. But had you any opinion?—I was not asked.
173. I think you noticed that there were some broken springs as a result of the derailment?—Not at that derailment.
174. Was there any damage to anything by that derailment—to any of the undergear?—The running-gear was twisted about—the draw-bars were twisted.
175. There were no broken bearing-springs, were there?—No.
176. In what other derailment did you notice broken bearing-springs?—At Okehu. It was the result of a derailment, and it was so plain, and broke the axle-boxes.
177. But how could you tell whether the broken spring was the result of the derailment and not the cause of the derailment?—The wagon had come such a considerable distance.
178. But if the bearing-spring had broken suddenly it may have caused the wagon to be derailed?—I do not think so.
179. Was it a spiral spring on that particular wagon?—Yes.
180. Where was the other case of derailment?—At Maewa, near Feilding.
181. Was any damage done?—One of the wagons turned turtle entering the yard at the points.
182. At the Marton Station you have a lifter and a car-examiner, have you not?—Yes, I have three of a staff.
183. Would those men replace any broken draw-bar springs if they were found there?—Yes, if they thought they would be detrimental to the running of the train.
184. I think you said you have never known of a spring pieced in more than two pieces?—No, that is so.
185. Have you not seen them in a wagon?—No, I have seen them when taken out.
186. Have you ever seen three pieces put in?—No.
187. Have you had any failures of draw-bars?—Yes, a fair percentage of draw-bar failures.
188. On running trains?—Yes.
189. What happens?—The end of the draw-bar in some cases has been sheered off the screw end.
190. And in other cases what has happened?—Sometimes the shank is broken.
191. Have you had any failures with draw-hooks on running trains?—Yes, they have been fairly heavy, but I do not know that any have occurred during the running of a train.
192. Do you consider you have sufficient accommodation to enable you to execute all car and wagon repairs at the shop and other stations?—Yes, the accommodation is quite sufficient for the work generally carried out at the various stations.
193. *Mr. Maxwell.*] I did not quite catch what you said at the beginning. Your district extends to where?—To New Plymouth on the one side and Taumarunui on the other, and to Palmerston North down.
194. The rolling-stock that comes under your view in your position would travel between Wanganui and New Plymouth, and Taumarunui and Auckland, Wanganui and Napier, Wanganui and Wairarapa, and via Manawatu to Wellington?—Yes.
195. You get passing through here backwards and forwards practically the whole of the rolling-stock of the North Island?—Yes.
196. Consequently you see a large number of trucks that have been repaired not only here but at the workshops all over the country?—Yes.
197. And if you come across a pieced spring have you any means of telling whether you had that pieced in your district or whether it was done elsewhere?—The only guide we have is the tablet-board on the end of the wagon, and there is a distinctive brand of the shop it passes through.
198. I want to know whether, in regard to piecing springs, you have any particular means of knowing whether the spring was pieced in this district or in another?—No, I have not.

WILLIAM KYDD sworn and examined. (No. 15.)

1. *Mr. Myers.*] What is your official position in the Railway service?—I am Workshops Manager at East Town.
2. How long have you held that position?—About twelve years. I was appointed Manager two years ago.
3. But you have been in charge of East Town for twelve years?—Yes.
4. Of that period for ten years your official designation was Foreman, but you were appointed Manager two years ago?—That is so.
5. What is your total length of service in the Department?—Thirty-three years last month.
6. What other positions have you held during the last twelve years?—I was Workshops Foreman at Addington for about eighteen months, at Napier for three years and a half, and the rest of my time was spent at Hillside as fitter and leading hand.
7. I suppose the East Town shops are bigger now than they were when you came on the scene first twelve years ago?—Yes, the works have increased a little.

8. What do you mean by "a little"?—The repairs have increased, and we have been building a lot of new stock, such as wagons, &c.

9. What is the nature of your duties?—I supervise the whole of the work. I give the work out to the Foreman Carpenter and Foreman Fitter, and I am always moving about myself amongst the work.

10. How many men have you altogether under you at East Town?—About two hundred at the present time.

11. And you have to superintend the work generally of all those men?—Well, I do. Of course, there is the Foreman and leading hand, but I go round amongst the work myself and keep a very strict eye on it.

12. Do you desire to say anything with regard to the capacity of your men there, speaking generally?—Well, in regard to the lifters, I have a lot of good, first-class lifters and men I have every confidence in.

13. Do you find that their work justifies that confidence?—I do. I impress upon them that I must have good work, and they know that. I am always going about and inspecting their work, and I find they do good work.

14. What direction is there over your own work: you have superior officers, of course?—Yes, Mr. Evans.

15. Do you see much of him?—About every four or five weeks.

16. And what are his visits—visits of inspection?—Yes. He takes walks round the shop and asks how the work is going on, and gives me instructions if necessary.

17. Are you restricted at all in the work that is done there: what freedom of action have you?—I have got a very free hand.

18. What do you mean precisely?—If work comes in I have a free hand to use my own judgment how I turn it out, and I believe in turning out good work. I am away from headquarters, and I am here to assist the Locomotive Engineer, and I do so as far as I can.

19. You say you have a free hand. Supposing you think that repairs, no matter how extensive, may be required, is there any interference with the exercise of your judgment?—No, none whatever.

20. You do, I suppose, quite a considerable amount of repair work out there?—Yes.

21. Do you see much of Mr. Valentine?—Yes, he is out there every Friday and Saturday, and he may come out on some other day of the week.

22. But Fridays and Saturdays are his regular days?—Yes.

23. He has to inspect the work before it is placed upon the rail for service?—Yes.

24. Is he a man who is particular, or otherwise?—He is very particular.

25. So that you have Mr. Evans on the one hand and Mr. Valentine on the other, and you have to satisfy them both?—Yes.

26. Do you see anything of Mr. Jackson?—Yes.

27. Has he made any personal inspection of your works?—Yes.

28. And I take it that you have to satisfy him too?—Yes.

29. Do you keep stocks of spares?—Yes, we keep a stock of spares at East Town.

30. Whence do you obtain those spares?—From the stores at Petone.

31. And whom do you requisition for them?—Mr. Evans.

32. Do you keep a large stock here?—Yes, pretty fair.

33. Does it take very long to satisfy your requisitions from Petone?—No, I got them in a very reasonable time.

34. Have you had any reason to complain of supplies not being sent to you?—Not any further than in connection with the draw-bar springs.

35. And what have you to say in connection with draw-bar springs?—We simply notified the Engineer that we were short of them and were wanting them, and we got instructions to put two pieces into wagons.

36. How long ago is that?—About two years ago, I should think.

37. The only instruction I have seen is two years and a half ago?—That may be it: it may be that long ago.

38. Can you tell the Commission whether you had known the practice to exist before that of using pieced draw-bar springs?—I did hear of it, but I cannot give any definite information on the point.

39. Are you speaking of something you heard lately or something you heard previously?—Years ago, in Dunedin.

40. Have you, say, during the last twelve months used many of those pieced draw-bar springs?—No, not many; perhaps a couple of dozens wagons have been done with them.

41. Do you mean that that may be twenty-four or forty-eight?—I could not say whether both ends were done or not.

42. Could you tell us how many draw-bar springs you have used altogether during the last twelve months?—Well, I am not clear on that point.

43. Cannot you give us any idea?—I suppose we put in about fourteen or sixteen in a period of four weeks—new ones.

44. That makes about 195 in the twelve months, taking fifteen in the four weeks?—Yes.

45. You have used during the last twelve months draw-bar springs on something like twenty-four wagons, but whether you have put pieced draw-bar springs on both ends you cannot say?—I am not in a position to say.

46. Have you used pieced draw-bar springs on carriages?—No, only on wagons.

47. What do you say as to the efficiency of a pieced draw-bar spring?—Well, I consider it is almost equal to the whole one.

48. Would you have any hesitation at all in putting pieced draw-bar springs in a much greater proportion of wagons than you have done?—I would have no hesitation at all as far as the safety of the wagon is concerned. It has no detrimental effect on the wagon or on its running, in my opinion.

49. Is it any detriment to the safety or the running of a train of which the wagon forms part?—No.

50. Can you say whether the use of a pieced draw-bar spring has any detrimental effect so far as the wear-and-tear of the undergear is concerned?—No, not any effect at all.

51. Can you give us any idea of the number of vehicles that you get in a year for repairs?—We turn out anything from twenty to thirty wagons in a week, and then there are cars besides.

52. Of course you may have a particular wagon more than once during the period?—Yes, quite so.

53. Your ability to speak as to the condition of the stock is, of course, limited to the stock that actually passes through your hands?—Quite correct.

54. But do you consider that by reason of the quantity of stock you see that you are in a position to express an opinion as to the condition of the stock generally?—Yes.

55. What do you say as to the general condition of the stock?—It is as good as ever it was—it is in good condition.

56. Do you think you could carry your mind back to a period, say, three years ago and compare the present condition with the condition then?—Well, even then, as far as I can remember, the stock was in good condition. I never knew it to be in bad condition.

57. Could you say, comparing the condition now with the condition, say, three years ago, whether it is about the same, or better, or worse?—Well, I should say it is better, because there are always alterations going on.

58. What do you mean by “alterations”?—Putting new axle-boxes on, and improvements in equipment, and renewing axles.

59. Do you do much painting at your works?—Yes.

60. Can you say whether or not that is being kept up?—Yes, it has been kept up.

61. I suppose you have to work, as everybody else has to work, with some regard to economy?—That is correct. I always study that.

62. Of course you know that might be carried to excess and become cheeseparing?—That is correct.

63. Is there anything of that kind at the shops at East Town?—No.

64. Can you give us generally some idea of the principle you work on: first of all, do you get many “Please explains”?—I get very few of them. I try to avoid them all I can by turning out good work, and my work will stand inspection.

65. When you say “my work” you are not referring to your personal work?—No, the work of the shops which is done under my control. It was always my main point to turn out good work and have the stock in good safe running-order.

66. And you have impressed that upon your men?—Yes, they know that.

67. Do you ever find when you receive a vehicle into the shops for repairs that it is necessary to effect greater repairs than are indicated in Loco. 43?—Yes, very often. We are not guided by that altogether. If we see anything wants doing it is done.

68. You carry out the requirements of Loco. 43, but if on examination you find anything else is required you do it?—That is correct.

69. *The Chairman.*] I find it is suggested that you might be able to give some information as to the deterioration of the rolling-stock on the New Zealand railways. Have you any idea why such a suggestion has been made?—No, I cannot understand it.

70. You cannot call to mind any chance remarks of yours which might have been misinterpreted?—No, none.

71. In your statement you say there was a shortage of draw-bar springs, and that you received instructions to use pieced springs. Were those instructions in writing?—Yes, if I remember rightly.

72. Whom did they come from?—From the Locomotive Engineer at Petone.

73. I presume this is the instruction to which you refer. It is dated from the Locomotive Engineer's Office, Petone, 10th June, 1914, and states, “The practice of throwing draw-bar springs on the scrap-heap when one or two coils are broken off is to be stopped, as it is quite unnecessary to do this on any vehicle *except cars*. In future, when draw-bar springs are found with one, two, or three coils broken, the space is to be made up by using suitable pieces of springs. When springs are being put together care must be taken to see that they fit flat into one another, and make up the required length. If this is attended to properly a large sum of money will be saved each year. Please see that your train-examiners and lifters receive proper instruction in this matter” [Exhibit B]?—Yes.

74. The inference is that more than two pieces of spring may be used. Have you ever put in more than two pieces?—Never more than two.

75. As far as you know, has the practice ever obtained in this district of putting in more than two?—No.

76. What did you consider the condition of the rolling-stock generally last July?—In good order.

77. Since last July have you made any special effort as compared with previous periods of improving the condition of the stock?—I do my utmost at all times to keep the stock up to date.

78. I ask you whether there has been any special speeding-up in the repair work between July and the present time?—I cannot say there has been any special speeding-up.

79. The work has gone on at the usual rate of repair?—Yes. I cannot say there has been any special speeding-up, but we have put on extra carpenters to help us along.

80. Have you received any instructions to speed up repair work since that date?—I cannot remember.

81. How have the repairs been kept up during the past year or so as compared with previous years?—Very favourably—they have kept up well.

82. The statement has been made that repairs have been neglected during the last three years up to the beginning of July last. What is your experience in regard to whether there was a period during which the repairs were not kept up, and as to whether there has subsequently been a period of rush: has anything of that kind existed?—I can only speak with regard to my own shop and the stock that goes through there, and that has always been kept up to time. Anything that comes for repairs is repaired satisfactorily and then sent out.

83. There has been no slackening?—No, none whatever.

84. And you have obtained all the spares and material necessary for carrying on the work?—That is a fact.

85. You have not been held up for want of material?—No, except in the case of buffer-springs. I get my supplies pretty regularly and have nothing to complain of.

86. And you have been able to carry on the work efficiently?—Yes.

87. And you maintain the gear and rolling-stock on this section in efficient order?—Yes.

88. *Mr. Marchbanks.*] Have you known of wagons coming in with the draw-bar springs broken and to be repaired with pieced springs?—Yes.

89. You gave a rough estimate of the number of draw-bar springs that may be used in a year—195?—Yes.

90. That would be the number of draw-bar springs used in your own shops?—Yes.

91. In addition to that the Car and Wagon Inspector would be sending for draw-bar springs to distribute along the road?—Yes.

92. How many would be drawn at a time from Petone?—Fifty or sixty at a time.

93. In connection with the Westinghouse brake, all repairs to the brake will go through the shop, I take it?—Yes.

94. Is there a great deal of repair necessary?—No, not a great deal.

95. Do you get many wagons or vehicles with the brake cut out?—Very, very few. I do not remember seeing one for some time.

96. Have you noticed a great deal of repair necessary in connection with draw-bars?—Of late in the head-stocks and transoms there have been a lot knocked about by rough shunting.

97. Shunting in the yard?—I presume in the station-yard.

98. Is there much damage to the draw-bars—are many broken?—Very few.

99. And a good many hooks?—Not so many of them either. Some of them are strained up a little.

100. You have made a number of sheep-wagons—J's?—Yes.

101. Have you any difficulty in keeping the underframes in decent order?—No, I cannot say I have.

102. There is a good deal of rusting goes on with the underframes?—Yes, but when I see it I have the floors lifted and painted.

103. In connection with bearing-springs a good number of them are inclined to cant, are they not?—I have not noticed it.

104. Have you any trouble with the castings breaking?—No, I cannot say I have.

105. There is no great expense or work to keep them in good order?—No.

106. *Mr. Maxwell.*] I suppose it is within your knowledge that there is a fair number of wagons with pieced springs in the traffic?—Yes; I say there is a fair number, but I am only going by what has been done in the shops.

107. If a wagon comes into the shop for some small repairs and it has a pieced spring in it, do you take that out and replace it with another?—Well, I cannot say definitely, but they have been taken out.

108. But is it the recognized practice that if a wagon comes into the shop with a pieced spring that that pieced spring is taken out and a new one put in?—No; it is not the recognized practice.

109. In other words, a wagon may come into the shop for repairs, and if the pieced spring is in satisfactory repair the wagon might go out again with the pieced spring?—Yes.

110. *The Chairman.*] This circular from the Locomotive Engineer definitely instructed you to use pieced springs?—Yes.

111. At the present time do you continue to use pieced springs?—Not since we got the new ones.

112. It did not refer to the question of shortage, but with a view to economy. When did you cease to use pieced springs and put in new ones instead?—I cannot say definitely.

113. What brought about the change—because the circular is still existent?—We put new ones in, but did not put pieced ones in. We were to put two-pieced springs in until we were supplied with new ones.

114. You have received no subsequent instructions that new springs were to be reverted to?—No.

115. *Mr. Myers.*] The Chairman of the Commission asked you whether you had received any instructions to discontinue the use of pieced springs. If you had any instruction in writing you would have put it on the file, would you not?—Yes.

116. Would you mind looking up your file to see if there had been any instruction in writing?—I will, certainly.

117. Would you mind also looking up your file to see if you have had any instructions during the last six months or since last July with regard to speeding up repairs or anything of the kind?—Yes, I will.

118. And if you have had any such instructions, will you undertake to transmit them to the Chairman of the Commission?—Yes, I will do that.

[The following letter was subsequently received from the witness: "Memorandum for Loco. Engineer, Wanganui.—As requested I have looked through all my files and cannot find any trace of any letter received from your office *re* speeding-up?—W. KYDD, W.S. Manager" (Exhibit I).]

ROBERT WITHINGTON TURNER sworn and examined. (No. 16.)

1. *Mr. Myers.*] You are Foreman Carpenter at the East Town shops?—Yes.
2. How long have you been there?—Five years altogether as leading carpenter and Workshops Foreman.
3. Have you been Workshops Foreman for five years?—For twelve months.
4. Prior to that you were leading carpenter?—Yes.
5. What is your length of service altogether?—Twenty-eight years.
6. In your position as Foreman Carpenter have you charge of the repair work at East Town?—Yes, under the supervision of Mr. Kydd, the Workshops Manager.
7. You say you have charge of the repairs?—Yes.
8. And, apart from Mr. Kydd, to whose satisfaction have those repairs to be done?—The Car and Wagon Inspector, Mr. Valentine.
9. Have you found him a man who is particular in his requirements, or otherwise?—He is particular in his requirements.
10. How many men have you working under you?—Altogether about eighty-odd.
11. Do you find them a satisfactory lot of men who are attentive to their work, or have you any adverse comments you wish to make?—No; I find them a real good lot—there is no trouble whatever.
12. You see quite a lot of stock waiting at East Town?—Yes.
13. Do you think you are in a position to compare the present condition of the rolling-stock with the condition, say, three years ago in point of efficiency and maintenance?—It is satisfactory.
14. Do you mean it is satisfactory now, or was satisfactory three years ago?—It is in as good condition as it was three years ago. Indeed, it is in better condition, because improvements have been made.
15. Do you mean improvements in method or in equipment, or in what?—Such as standardizing and axle-boxes.
16. You are referring, then, to the standardizing of equipment?—Yes.
17. Does that simplify the work and tend to efficiency?—My opinion is that it enables us to put the stock into better condition.
18. I understand you to say that vehicles which come in for repair are inspected before they take the rails for service: inspected by whom?—By the Car and Wagon Inspector.
19. You know, do you not, that pieced draw-bar springs have been used in wagons or carriages?—In wagons only.
20. Are you able to say whether those pieced draw-bar springs have been tested in any way, and, if so, how?—They have been tested by the press to see what tonnage they would take—they are compressed quite close.
21. And have then been tested by use in the service?—Yes.
22. What has been the result to your personal knowledge of the test in the press?—It is a satisfactory test.
23. Have you compared the result with the result under similar conditions applied to a complete spring?—They compare very favourably one with the other. One would take about a ton less when put in the press—that is, the pieced spring. That is because there is one coil less.
24. You have told us also that they have been tested in actual use?—Yes.
25. How have the pieced springs operated in practice in actual use?—They have been tested with good results.
26. When you send a wagon out with a pieced spring, assuming you have got two good pieces such as those produced here, do you find as much tendency for the pieces to break as there is for a complete spring to break?—No.
27. *The Chairman.*] Do you ever put in pieced springs in the shop?—Yes.
28. How many pieces did you use?—Never more than two.
29. Are you quite certain about that?—Yes.
30. When wagons come into the shop is it a usual thing to find draw-bar springs broken?—Yes.
31. You expect them to be broken?—Yes.
32. *Mr. Marchbanks.*] Have you charge of the painting of your wagons?—Yes.
33. Has the painting been kept up during the last three years the same as previously?—Yes.
34. And the same number of men employed?—Improving.
35. Do you do many carriage repairs in Wanganui?—Yes.
36. Do you find the undergear damaged at all due to heavy shocks from buffing or shunting?—We find the undergear of the carriages in a very satisfactory condition.
37. Take the case of wagons: do you find the buffers injured?—Very seldom. We have no difficulty in keeping them in order.
38. Do you notice many draw-bars broken in the wagons that come in for repairs?—No, not many.

(Witness called by the Commission.)

WILLIAM JOSEPH PIPER sworn and examined. (No. 17.)

1. *Mr. Myers.*] You are employed by the Railway Department?—Yes, as train-examiner at Wanganui.

2. How many of you examine trains here?—Three—Mr. Humphrey, a relieving man named James, and myself; and when Mr. James is away relieving we have another man from East Town.

3. Do you carry out lifter's work as well as examine?—Yes.

4. How long have you been in Wanganui examining trains?—About sixteen years and a half.

5. The period I want to ask you about is the period of three and a half years' back from now. Have you in the course of your train-examination come across, and if so how many, broken axles during that period?—No, I have not. As far as I can remember I think there were about two; in fact, there might have been only one.

6. If you did discover a broken axle what would you do with the vehicle on which the axle was broken?—We would stop it.

7. But what would be done with it—where would it go for repairs?—It might be temporarily repaired by the examiners by putting another wheel in, and the old wheel would be sent to the shops.

8. Would the vehicle be sent to the shops?—Oh, yes.

9. So that you would effect temporary repairs and card the vehicle for the shop?—Yes, consign to the shops to make sure it gets there.

10. Can you say whether during the same period you have met with broken tires?—No, I could not say.

11. If there was a vehicle with a broken tire I suppose it would be sent to the shops?—The wheel would be taken out by the examiner and the vehicle would be sent to the shops.

12. Do you find it necessary to send many vehicles to the shops?—Not necessarily. We send some: we send a good few.

13. And I suppose you repair a good few yourself?—We repair a lot—only small repairs.

14. Will you give the Commission the nature of the minor repairs which you effect on the repair siding?—Draw-bar springs, coupling-pins, bridles, oil-boxes, and hot axle-boxes are repaired.

15. I suppose if there are repairs which are more serious you send the car into the shops?—Certainly.

16. And you report the fact of your having done so to whom?—To the Car and Wagon Inspector.

17. Does the train-examiner act on his own judgment and discretion in deciding whether or not a car should be sent to the shops?—You do to a certain extent, but at Wanganui, where the Car and Wagon Inspector is stationed, we get his advice on it if we think it necessary.

18. He is away quite a lot inspecting?—Not a lot, but a certain portion of his time he is away.

19. You examine, I suppose, only the trains that come into Wanganui and those that go out of Wanganui?—Yes.

20. Is every train that comes in and goes out of Wanganui examined at the station here?—Yes, either by one of my mates or by myself.

21. What condition do you find the rolling-stock in now, speaking generally?—I find it in good condition.

22. Has there been any alteration in its condition, do you think, during the last few years?—I think it has been on the improve.

23. In what way has it been improved?—Generally. It has been kept more up to date. The gear has been more easy to work, such as draw-bars and draw-gear.

24. Is that because of any improvements in equipment that have been effected?—Yes.

25. You see a good deal of the undergear of the vehicles, I suppose, in the course of your duties?—Yes.

26. When you say the rolling-stock is on the improve in your opinion, are you speaking of the undergear or the superstructure?—The whole lot.

27. Do you come across many broken bearing-springs?—No.

28. Can you state the number of broken bearing-springs you have noticed during the last few years?—I cannot say; we have not had one for years.

29. Do you come across many broken draw-bar springs?—Yes; we come across a good few of them, in both carriages and wagons.

30. In which class of vehicle do you find the more broken draw-bar springs?—In the wagons.

31. And that would be due, in your opinion, to what cause?—I should say, to the heavy traffic and the handling it gets with the heavy trains.

32. When you speak of the heavy handling it gets, do you mean the heavy handling in running or in the yards?—In the yards.

33. When you find broken draw-bar springs, do you find them broken in any particular way or in any particular number of parts—in several places or in one place?—We find they vary.

34. You put in draw-bar springs at the repair siding?—Yes.

35. You see these two pieces of draw-bar spring here?—Yes.

36. You see that these two pieces put together are the same height as the complete spring produced?—Yes.

37. Have you ever put into a wagon or into any vehicle two pieces such as you see here?—Yes.

38. In what class of vehicle have you put two such pieces of spring?—Put them into a car and into wagons.

39. Have you often used them for carriages?—No, not very often—only when we have been short of a good spring.

40. What carriage have you put them into—a short-distance or long-distance?—What would you call long? From here to New Plymouth, on occasions.

41. Can you give us any idea of how many occasions you have done so?—No, I could not.

42. Have you put them more often into wagons than into carriages?—Yes.

43. How do they do their work on a wagon?—They do it as well as a complete spring.

44. Is that your opinion from practical experience?—Yes, that is my practical experience.

45. When you have put in two pieces like that, and you see the wagon again later, have you found the pieces have broken?—No.

46. Which has the greater tendency to break, a complete spring or two pieces that you put in?—I should say the broken spring would have the tendency to break before the complete spring.

47. Have you found the pieces break again after you have put them in?—No; we have never found the broken pieces break.

48. Are there many wagons in use now with draw-bar springs in two pieces like this?—No, I do not think there are; we have been replacing them. When we have had complete springs we have always taken the others out and put in the new one.

49. Do you keep a stock of spares on the repairing siding?—Yes.

50. Where do you get them from?—Mostly from East Town.

51. You requisition through the Car and Wagon Inspector?—Yes.

52. And how do you find the spares come to hand after your requisition—promptly or otherwise?—Promptly. There is no trouble in getting them at all.

53. You see in each year quite a large quantity of stock coming into the workshops?—Yes.

54. Do you see the stock or portions of that stock after it comes back from the repair shops?—Yes, see most of it.

55. And how do you find the work done?—Well done.

56. *The Chairman.*] You have been train-examining in Wanganui for sixteen years and a half?—Yes.

57. What do you consider the condition of the rolling-stock that passes through your hands—say, up to June last—as compared with the condition, say, seven or eight years ago?—My opinion is that it is better.

58. Has any suggestion been made to you of late years that you have been sending too many vehicles into the shops, or doing too extensive repairs?—Not extensive. The repairs have certainly increased.

59. You do not understand my question. Has any suggestion been made by those above you that your examinations were too strict and that you were sending in too many cars and wagons for repair?—No, nothing of the kind.

60. That is to say, you were perfectly free to stop vehicles when you thought they wanted stopping?—Certainly.

61. And your action has not been questioned?—No.

62. You meet with a good many broken draw-bar springs, you say. How many on this section, roughly, of your own work?—It would be hard to say.

63. What do you think would be the average?—Do you mean, what we see broken?

64. Yes, and what you see sufficiently badly broken to require renewal?—It would be hard to say: possibly ten or fifteen per week broken.

65. Does that relate to the other examiner as well as yourself, or simply what you see yourself?—That is what I see myself.

66. When you have to renew those broken springs have you ever put in more than two pieces?—No.

67. Have you ever allowed a spring broken into more than two pieces to go on running?—No.

68. When you see a spring broken into more than two pieces you take it out?—Yes.

69. Do you remember how many years ago this practice started of putting in broken pieces?—Roughly, I should say about twelve months ago.

70. You do not remember it in past years at all?—No.

71. And what was the reason that the broken springs were put in?—There was a shortage, I believe, at the time of the good springs.

72. *Mr. Maxwell.*] There is a difference between a broken spring and a pieced spring. As I understand, a broken spring is a whole spring which has been broken in travelling and is still in, not having been altered in any way, but a pieced spring is made up of two pieces of broken spring to make it the 7 in. exactly. If a complete spring is broken in travelling it is no longer a 7 in. spring. A pieced spring is in two pieces, but it is still 7 in. Do you treat this latter spring differently?—If they break again we do.

73. You do not take them out?—We take them out if we have good springs on hand, especially on a car. That is my personal practice.

74. But if you find a pieced spring in a wagon and you have a new spring by, you take out the pieced spring and put in the new one?—Yes, but we would not do so in a wagon, but in a carriage we would, certainly.

75. That would imply that pieced springs are used in carriages frequently?—No, not frequently.

76. How often do you see pieced springs put into carriages?—We have only been doing it for a few months.

77. Have you had any instructions to put pieced springs into carriages?—Yes, two pieces.

78. Is that a written instruction or a verbal one?—I really forget. I think it was in writing, but I would not be sure.

79. At any rate, you have had instructions to take out pieced springs?—When we have had good ones, yes.

80. *My Myers.*] You say you had instruction, and you think it was in writing?—I would not be sure.

81. Can you remember ever having had more than one instruction in writing in regard to this question?—No.

82. From whom would you get your instruction in writing?—From the Car and Wagon Inspector.

83. Would you mind reading this instruction and seeing whether you recognize it [Instruction, 10th June, 1914, handed to witness, Exhibit B]?—I could not say whether I received it in writing or not—it may have been verbal.

84. The reason I am asking you is this, that Mr. Valentine states that he did issue an instruction in writing and that that is a copy of it, and he says that is the only instruction he has given; but you would not like to say whether that is the instruction or not?—No, I would not.

85. Supposing you get an instruction of that sort in writing, do you keep it?—Yes, we keep it if we can. They are not destroyed, but very often in the shop the door is opened and the whole thing blows away.

86. *Mr. Marchbanks.*] During the examinations of stock you are in Wanganui?—Yes.

87. Have you never seen a spring pieced in three places?—Only what has been broken.

88. I mean, made up to the necessary length?—No, I have never seen that.

89. Roughly, how many wagons may be in the Wanganui yard usually—one hundred, two hundred, or one hundred and fifty?—One hundred or two hundred, or even three hundred.

90. How many broken draw-bar springs would you expect to find amongst those wagons?—I could not say—I have no idea.

91. If you were to take the wagons in the yard to-day, how many would you expect to find?—They might be broken in the meantime in shunting.

(Witness called by the Commission.)

WILLIAM TAYLOR LANDELLS sworn and examined. (No. 18.)

1. *Mr. Myers.*] You are in the employ of the Railway Department?—Yes.

2. What is your official position?—Westinghouse-brake fitter at the Wanganui Station.

3. Would you mind telling the Commission what your duties are?—Well, to thoroughly overhaul the Westinghouse brake right from one end to the other, and see that the vehicle and everything is in good order and condition before it leaves me, in so far as the brake is concerned.

4. Do you conduct any examination yourself, or is it some other officer who informs you that anything requires to be done?—A vehicle is stopped by the train-examiners, and when they see a vehicle is due for a Westinghouse-brake overhaul it is stopped by them and comes into my siding.

5. You do not see any vehicle at all till it is brought on to your siding?—Only what is brought to my siding for me.

6. Do you have many vehicles brought to your siding?—Yes, the number varies.

7. They would average how many a week?—Sometimes I might get twelve or fifteen a week.

8. And is your time fully occupied with the brakes alone?—Yes.

9. How long have you been doing the particular work which you are doing now?—I suppose since 1904—about thirteen years.

10. And in Wanganui all the time?—No, in Christchurch also. I have been in Wanganui six years next April.

11. What do you say as to the condition of the brake equipment now?—It is very good at the present time.

12. How does it compare with the condition which existed, say, six months ago?—Well, it is much of an average, taking such a short period.

13. Take it over a period of, say, three years and a half ago, how would the condition compare with it then?—As far as I can say the brake equipment is in better condition now than when I came here.

14. Supposing it were suggested to you that there had been any deterioration in the condition, what would you say to that?—I would not agree with it.

15. I assume it does not lie in your work to be able to give any information as to the condition of the rolling-stock apart from the brake equipment?—No, only what I happen to see when going across the pit in connection with my own work, and then I inform the train-examiners and they rectify it.

16. *The Chairman.*] You are a fitter?—Yes.

17. You have been fitting for how long in the Railways and before?—In 1900 I joined the service, and before that I was with my father mostly in Christchurch.

18. Your father was at one time working in the Addington Workshops?—Yes.

19. Vehicles pass through your hands in order that you may repair the Westinghouse brake, but I presume you are not able to form an idea as to the general condition in which the vehicle is from the train-examiner's standpoint?—Yes, that is right.

20. You are not connected with the actual repairs to the wagons, and therefore to a certain extent you would be an outside observer. What is your general opinion as to the condition of the rolling-stock, say, six months ago as compared with its condition, say, three years ago: do you think it is any worse or any better?—I think the rolling-stock is very much on the average. I do not see any difference with regard to anything I have had to handle.

21. Have you noticed in working on the vehicles a large number of broken draw-bar springs?—No, I cannot say I have seen many—in fact, I have seen very few.

22. Of course, you have come across pieced springs?—Well, we come across them, but we do not take a great deal of notice. If I go under a vehicle and see a broken spring I draw the train-examiner's attention to it and then I have finished with it.

23. Have you ever come across a spring which is made up of a very large number of broken parts?—No, never.

24. Have you ever come across a spring which has been partially blocked up with angle-bars and timber?—I have not noticed it.

25. The Westinghouse brake is in excellent condition, do you say?—Yes, that is my opinion.

26. *Mr. Marchbanks.*] Have you proper facilities to enable you to do your work?—Everything I require—plenty of room, plenty of ventilation, and plenty of equipment.

27. Do you come across wagons with the brake equipment cut out?—Yes, sometimes I may get two or three a week, and sometimes I do not get any at all.

28. Do you get many with the quick-action triple and with the quick action cut out?—No, there are not many; occasionally you get them. I am not sure whether I had one or two last week; I know I had one.

29. Do you get many wagons in for brake repairs apart from those that are in for periodical cleaning and examination?—No. Of course, the cleaning and repairing I have all to contend with: it all goes through the one process.

30. But apart from that, if the brake is in bad order you would get it in?—If the vehicle is sent in for inspection—if something is cut out.

31. But you do not get many?—No, there would not be any average.

32. Would they average two or three a month?—I could hardly tell. They are simply stopped for repairs and I go through them.

33. If a wagon is in bad order and the brake in bad order, apart from the periodical examination it would be sent here for repairs?—The train-examiners on our section would send it to our pit.

(Witness called by the Commission.)

ERNEST NEPAUL JAMES sworn and examined. (No. 19.)

1. *Mr. Myers.*] You are employed as a lifter in the Railway Department?—Yes.

2. And stationed at Wanganui?—I am relieving between Taumarunui and New Plymouth.

3. Where is most of your time spent?—Between Taumarunui and New Plymouth. I do not spend more time in one place than another. My time is very much divided.

4. Do you perform the duties of train-examiner as well as those of lifter?—Yes.

5. How long have you been performing those duties?—For sixteen years, on various sections. I have been on this section about six years.

6. Has that been continuous?—No, broken time.

7. Over what period on this last occasion have you been working regularly on this section?—About four years and a half on the section.

8. How long have you been doing the relieving work?—Twelve months this month.

9. Prior to that where were you stationed?—In the East Town Workshops, as lifter.

10. During the last twelve months you must have seen quite a large quantity of rolling-stock of the North Island?—Yes, I have.

11. Can you give the Commission an idea of the condition in which the rolling-stock is kept?—Yes, I examine between six hundred and seven hundred wagons every day, and I consider the rolling-stock is in very good order. That includes cars.

12. You mean vehicles of all descriptions?—Yes.

13. If you examine such a large number of cars it does not leave you much time for repair work?—Yes. When I am examining cars I am not repairing.

14. Do you have somebody else who does the repair work when you are examining?—Yes.

15. Three and a half years ago you would have been at East Town?—Yes.

16. You would see a good deal of the stock there?—Yes.

17. How does the condition of the stock now compare with the condition then do you think?—Just about the same, I should think.

18. Have you any reason to suppose that it is not as good as it was then?—No, no reason at all.

19. Do you send many vehicles into the shops as the result of your examinations?—Yes, we send a good few in.

20. Do you find many broken draw-bar springs?—Yes.

21. On what class of vehicles?—On wagons only.

22. Do you find many of them on carriages?—No, very seldom on carriages. If there are any broken we promptly renew them.

23. Where do the breaks occur as a rule to the draw-bar springs on the wagons—in the ordinary running or in the yards?—I should say, in the yards, as a result of shunting operations.

24. What do you do with the draw-bar springs in wagons when you find them broken?—If the draw-gear is tight we let it pass on, and if it is slack we put new springs in if we have got them. If we have not got them we build them up with parts of springs. I only use two parts of springs.

25. You see the two parts of the table [produced]?—Yes, they are something like that.

26. Would you say those two parts are good enough to make up a draw-bar spring?—Yes, I would.

27. How do you find the two parts work, efficiently or otherwise?—They stand a long time.

28. Do you regard them as safe?—Yes, quite safe.

29. Could the safety of a train in your view be affected in any way by the use of two pieces like that so long as you have the whole space filled up in lieu of one complete spring?—Oh, no.

30. How far back does your knowledge go of the practice of using two pieces of draw-bar springs?—About eighteen months.

31. When you find a draw-bar spring and you take out the broken pieces, where do you keep the pieces as a rule?—We keep them in a bin kept for that purpose. They are kept by themselves so that they will not get mixed up with the others.

32. Do you mean they are kept for use afterwards if it is necessary or desirable?—Yes, if necessary.

33. You keep a stock of spare parts at each place where train-examining is done or repairs effected, do you not?—Yes, there are always broken springs at every station.

34. But a stock of spare parts is kept at each repairing siding?—Yes.

35. Have you found any difficulty in getting supplies as required at the repair sidings?—No, none whatever.

36. Whom do you get them from?—From the Car and Wagon Inspector at Wanganui, who is requisitioned for them.

37. Who decides whether or not a vehicle should be sent to the workshops?—The train-examiner.

38. Is there any interference by the superior officer in regard to his judgment?—Absolutely none.

39. We know that the duties of the train-examiners and the Car and Wagon Inspector are contained in the Loco. Code?—Yes, and all the officers are aware of them.

40. Do you know of any instruction which has been given at any time that prevents you and your fellow-examiners from doing what is required in connection with the safety of the rolling-stock?—No.

41. You have told us of pieced draw-bar springs, two pieces being used in wagons: do you know of any instances where the same practice has been followed in regard to carriages?—No, never.

42. *The Chairman.*] You say it is eighteen months since you first saw this practice of using pieced draw-bar springs?—Yes.

43. How did it come about?—The leading fitter at East Town told me to carry out the practice.

44. Did you object at the time to doing it?—No.

45. You thought it was a sensible practice?—I thought it was my duty to obey his orders.

46. What is your opinion with regard to the practice?—I think there is no harm in it. We were short of springs.

47. Have you ever used more than two pieces?—No, never.

48. Would you consider a spring broken in two pieces sufficiently good to be left in?—Yes.

49. But there would be some slack, would there not, if the spring was broken?—Very little slack, if any.

50. Do you believe in the practice of leaving a spring in if broken in two pieces?—Yes, providing the draw-gear is tight.

51. *Mr. Marchbanks.*] You examine sometimes as many as six hundred or seven hundred cars and wagons in a day?—Yes.

52. Do you examine all the draw-bar springs and bearing-springs?—Yes.

53. How many broken draw-bar springs would you expect to find in seven hundred vehicles?—Perhaps forty a day.

54. Have you assisted in getting the carriages on the line after a derailment?—Yes.

55. Have you then noticed any broken bearing-springs?—No, never.

56. None that you thought might have caused the derailment?—No.

57. Have you seen any broken axles?—Yes, I think two, at the Hukatere (now Pariroa Pa) derailment, about fifteen years ago.

58. There have not been any of recent years?—No.

59. *Mr. Maxwell.*] You say you might find forty broken draw-bar springs in seven hundred vehicles?—Yes, similar to the exhibit here, with one break in it.

60. If they were broken springs in two pieces you would not renew them?—No, not if they were tight.

61. *The Chairman.*] Do you ever washer-up the springs?—No.

62. Do you come across many washered?—Yes, there are some washered out. I should say the majority of the cars have a washer between the spring and the transom.

63. It is part of the construction of the carriage, is it not?—Yes.

64. But I mean, are washers put in to make up the length?—No, I have never seen that.

WANGANUI, TUESDAY, 13TH FEBRUARY, 1917.

WILLIAM ANDREW VEITCH, M.P., sworn and examined. (No. 20.)

1. *Mr. Myers.*] You are the member of Parliament representing the Wanganui district?—Yes.

2. The Commission is sitting, as you are aware, to inquire into the condition of the rolling-stock of the New Zealand railways, and the Commission owes its origin to speeches made by the member for Hutt and yourself in Parliament. Have you seen the terms of the Commission?—Yes, I have.

3. Would you mind, first of all, giving the Commission in your own words such information as you can which will enable them to prosecute their inquiries? What I mean is this: that any matters in connection with the rolling-stock that you had in mind at the time when you made your speech it is desirable that the Commissioners should know, so that they may inquire into the condition of the rolling-stock and carry out the terms of their Commission?—I presume, Mr. Chairman, that the inquiry will be made in terms of the Commission, and not in terms of the speeches that were made. Before I reply to Mr. Myers's question may I explain to the Commission that it was my intention to be here yesterday morning without being summoned, but unfortunately I found it impossible to come along, and reading in the papers that the Commission was to sit for two or three days I did not regard it as urgent. I just wanted to explain that as a matter of courtesy to the Commission, because I had a letter asking me to appear.

4. *The Chairman.*] We invited you to appear as soon as counsel representing the Railway Department mentioned your speech in *Hansard*?—Yes, I got the letter some days ago. I might say, to begin with, that I have not followed the evidence that has been given before the Commission up to now. I have seen very little of it. I have been away in the North of Auckland, where I saw very few newspapers, and consequently have not been able to follow the evidence that has been given. Since I came back I have been busy with the unfortunate waterside workers' difficulty here, and I have not been able to give much attention to the evidence that has been given before the Commission. However, I would like to say in reply to what Mr. Myers has asked me that the speech that was delivered by me in Parliament was not a speech in which I made assertions detrimental to the Department or anybody else. I asked the Minister for information which he has not supplied to me so far. I asked the Minister a number of questions with regard to the conditions of the rolling-stock, and the position generally with regard to it. I did make the statement that I knew that an officer of the Department had issued an instruction that pieced springs were to be used in the trucks under certain conditions. I am not quite sure of the terms of the instruction now, but that is not of importance. The instruction certainly authorized members of the staff to put in pieces of broken springs where originally a whole spring was intended to be used. I took that, together with my general observations, as an indication that economy was being allowed to go too far in the matter of the maintenance of the railway stock. I mentioned my own observations, and in connection with that I may say I have been impressed with the appearance of carriages and trucks in a general way in the matter of their having been painted. My opinion is that the painting has not been kept up as it should have been, or as it was hitherto done. I have arrived at that conclusion from general observations when travelling up and down the line. I may say I was in the Railway service for twenty-two years, occupying the positions of cleaner, fireman, and senior driver, and therefore have some knowledge of railway stock. I have also taken notice of the fact that there appears to be a good deal of side play in the axle-boxes and brakes, and I have noticed that the axle-boxes have been lined up with liners. I do not think that was the practice in years gone by. A very much better job could be made by closing the jaws of the truck. Mr. Myers has asked me to give you a general opinion as to the condition of the railway rolling-stock. Well, sir, there are only two methods at my disposal by which I could get any detailed information to give to this Commission: one would be to trespass on the railway premises and examine the trucks myself underneath, and so on, and the other would be to try and get information surreptitiously from members of the Railway staff. I am quite sure you will give me credit that I would not attempt to do either of those things, and I do not intend to do so; and I submit, in answer to Mr. Myers's question, that it is the business of the Commission to find out those things, and not mine.

5. *Mr. Myers.*] We do not suggest that Mr. Veitch has gained information surreptitiously, or that he would do so?—No; but the information I am asked for I could supply only if I adopted either of those two methods, and my opinion of Railway men is that there are very few of them in the service who would give information to anybody who tried to get it improperly, and in any case I would not try. I have a cutting from the *Evening Post* of the 7th February, 1917, wherein one witness is reported as saying, "A good few buffer-springs were broken on wagons, and a few on carriages." Under cross-examination the witness stated that the number of wagons with piece springs were extremely small. Then he further says, "It was very seldom that broken bearing-springs and axle-boxes were found on running trains, and that also applied to draw-bar springs and axle-boxes." Another witness expressed the opinion that two-piece springs were superior to whole springs, in that the spring that had broken into two parts was tempered and was not so liable to break again. Well, I do not think I have ever heard such utter nonsense in all my life. If a man told me that a broken spring was as good as a whole one I would either conclude that the man was a fool or that he mistook me for one. I shall never be convinced that two parts of a broken spring are as good as a whole one. It is not my business to make suggestions to the Commission; I merely make this brief statement to the Commission in reply to what Mr. Myers has asked in order to point out my position in connection with the matter. It is my duty as a public man, if I think I can see indications of extreme economy in the matter of the maintenance of railway stock, to draw public attention to it.

6. Your indications, then, of extreme economy apply to (1) painting and (2) the use of pieced draw-bar springs. Is there anything else?—I mentioned the axle-boxes and the slackness in them.

7. Well, how many axle-boxes have you seen to which you thought exception could be taken?—I could not mention any specific number, but I have seen a number.

8. Is it an isolated case, or is it general?—I do not think it is general. I would not say it is general.

9. You say that the axle-boxes in a few cases you have seen have been lined up with liners?—Yes.

10. Has not that practice been adopted ever since the railway was established in New Zealand?—It may have been; I would not say it has not.

11. With regard to painting, how long is it since you first noticed what you thought was an indication of extreme economy in the matter of painting?—I would say, roughly, a couple of years ago.

12. Well, without in any way admitting that, because it is disputed that that deduction is correct, would you say that it is reasonable to suppose that there might have been difficulty in getting the number of painters since the war started that the Department had before?—There may have been that difficulty—I do not know.

13. Well, even supposing during the present conditions the painting was not kept up quite so well as it was formerly, do you think that any real objection can be taken to that?—Yes, I do.

14. Notwithstanding the war conditions?—Notwithstanding the war conditions. I think the men could be found if the price were paid.

15. You understand there is no admission on the part of the Department of that sort?—Yes.

16. There is evidence to be called on the subject, and I want to see what is in your mind as to the real objections you have?—Yes.

17. You apparently thought when you made your speech in Parliament “that the conditions were such that a careful investigation should be made by some impartial and responsible individual”?—Yes.

18. Do you think the conditions were as bad as that?—I would not have said so unless I thought so, you can be sure of that.

19. Do you think the matters you have referred to—namely, the alleged want of painting and the use of pieced draw-bar springs—would be sufficient to justify “a careful investigation by some impartial and responsible individual” into the whole of the rolling-stock?—Yes, I do. But that was not what I had in my mind. What I had in my mind was that, as I have already said, I have no means of inquiring honestly into the general conditions, and if what I see gives me the impression that there is undue economy being practised in what I see, I am justified in considering it worthy of inquiry as to whether the things I cannot see are also in the same state of deterioration.

20. You said in your speech, as you have said here to-day, that you know of an instruction given by one officer in regard to broken springs?—Yes.

21. Would you mind saying—I think we know, as a matter of fact, but I want to see if we are correct—to what report or instruction you refer?—The thing was mentioned in Parliament.

22. Is it an instruction by Mr. Valentine, the Car and Wagon Inspector, because we know he gave one?—Well, I do not know who it was by—I do not remember. If I saw the instruction I could tell you at once if it was what I am referring to. We all know what the instruction refers to.

23. There are two instructions here [produced], but they are precisely the same. One is by the Engineer and the other by Mr. Valentine. [Instructions handed to witness: Exhibits B and C]?—Yes. I really could not say which of those it was, but they both mean the same thing. It was known to members of the House.

24. It would be one or other of those?—Yes, unquestionably. It was an instruction exactly similar to those, and in all probability it was one or other of those.

25. That is the instruction you had in mind when you made your speech?—Yes, so far as the springs were concerned.

26. When you made your speech were you referring to bearing-springs or to draw-bar springs, or both?—I was referring to draw-bar springs.

27. This is what you said in your speech, according to *Hansard*: “I have not gone closely into the matter of rolling-stock, but I do know that at least one instruction has been issued by the Locomotive Department to the effect that broken springs may be duplicated and put into all vehicles.” I lay emphasis on the word “all.” Did you have in mind at that time that the instruction referred to carriages and wagons alike?—Yes, I did.

28. You see, do you not, from the instruction I have just shown you that your assumption or inference was incorrect?—It was incorrect in that minor detail, but that strengthens my position very much. If it was not considered wise and safe to put them into cars, then there is a difference between a pieced broken spring and an unbroken spring.

29. But at all events you were in error in making the statement that the instruction applied to *all* vehicles?—If I had thought my speech over for half an hour I would not have put the word “all” in.

30. At that time you simply had your memory to go by, and your recollection was that it did apply to all vehicles?—Yes, precisely.

31. Now, do you say the draw-bar spring affects the safety of the vehicle on which it is placed, or the train of which the vehicle forms part?—What I mean is that two pieces of springs are far more liable to break than a whole spring is, and if the spring becomes broken it causes a slackening of the train, and it only requires that slackening to extend to a fair proportion of the stock when the running of the entire train will be bad, inasmuch as there will be too much slack in the train from end to end, and that will bring an increased and unnecessary strain upon the stock generally.

32. You think, rightly or wrongly, that a pieced spring is more liable to break than a whole spring?—I think rightly that it is so.

33. Are you speaking from practical experience in connection with springs, or are you giving your opinion?—I have never handled those springs or worked with them. I have never handled pieced springs, and I am not aware it was ever done before.

34. Then it would surprise you to know that for fifteen years and a good deal more—indeed, one witness in Auckland said the last thirty-six years—the same practice has obtained at times of using pieced draw-bar springs?—It may or may not have been. I am not able to say, but that does not alter the position.

35. But would it surprise you to know that a number of practical men in the service have said in giving evidence before the Commission that a pieced spring in practice is much less likely to break, and does not so often break as a whole spring, and for this reason: that the pieced springs have already stood the test and broken in the weakest part, and that what remains is more likely to be stronger than a new spring?—No, I cannot see it. What that witness says is on the assumption that a broken spring would remain in a truck. I am proposing that a new spring should be put in, and if the springs are good there should be no weak part. The springs that break are the weak ones, and have been badly tempered.

36. What I want you to distinguish between is a broken spring, both parts of which or all parts of which remain in the vehicle, and a pieced spring which is made up of parts like this spring you see on the table here?—Yes, I know what you mean. You are assuming that part of that broken spring is put in with another part of a broken spring.

37. Yes, and that you have got stronger parts in consequence than with a new spring?—There is necessarily a certain length that should be filled up with the new spring. That is the point I want to get at. The new spring should fill up the whole space. That being so, if you put in two parts of springs which are longer than that, they would not fit properly into the position, and therefore you cannot make any distinction between taking one part off and putting another part on. You would have to put on the length, either something longer or shorter.

38. Why could you not get two pieces together to make up the required length?—Those two pieces on the table would make up just the required length, but what is the difference between taking that away and putting another bit in?

39. That is not the point?—That is the whole point.

40. What I want to get from you is how the use of a pieced spring like that in a wagon or carriage affects the safety of the train or of the vehicle in which the pieced spring is placed?—The broken spring will not give the same resistance—the same elasticity as a whole spring. It is impossible that it can. The broken parts are set on each other and are solid, whilst the other is like a cushion. No matter how you piece it up, you can only put in what the bar will hold, and with the two pieces it will give you less elasticity. It means that you have made it partly solid, although not entirely so.

41. If that be so, you will see the extent of the solidity is not very great?—It would be sufficient to make a great difference in the whole train. You cannot take the whole railway-train and compare it with the position of one truck.

42. Do you for a moment suggest that it is a practice which has become general?—I do not know. I cannot say that it has or that it has not. I am not going to crawl under the wagons without authority to find that out.

43. Let us assume for the moment that there is only a very small percentage of wagons with pieced springs, do you still say that is an objectionable practice?—Yes, it is objectionable to the extent that the percentage applies.

44. I still do not understand from you how the safety of a train or the safety of a vehicle is affected by the use of a few pieced springs?—Well, if I am convinced that pieced springs weaken the efficiency of each of those shock-absorbers, then I am convinced that any extension of the practice will to the extent to which it is applied affect the general efficiency of the whole of the trucks in the service. That is what I want to get at.

45. But that still does not answer my question?—But it applies to the question.

46. I am referring now to the safety of the train, and I want to ascertain from you why you think the safety of the train or vehicle is affected prejudicially by the use of a pieced spring?—You speak of “the” train. My point applies to the general practice in the railway service. If you put it this way, and say, “Assuming that a train is fitted with pieced springs throughout, how far does that extend?” Is that what you mean?

47. No. Let us assume for the moment, if you like, that the practice is general, and that you have a train made of vehicles in a number of which there are pieced springs?—Yes.

48. What I want to ascertain from you is how, in your opinion, that affects prejudicially the safety of the train?—I see. If the pieced springs are used in sufficient numbers, or, rather, given a train with a number of trucks and, we will say, some carriages behind them—which is the usual practice in New Zealand—and a large proportion of those trucks are fitted with pieced springs which do not absorb the shock as efficiently as whole springs, the position created then would be that there would be more slack in the train than there ought to be, and the effect of that would be, especially on long trains, that in applying the Westinghouse brake a much more severe strain would be put upon the draw-gear owing to the slack, apart from the efficiency of the springs. The result of that might at any time mean the breaking of the draw-gear altogether in several parts of the train by the sudden shock and concussion caused in that way. Assuming the front trucks were empty and the back ones were loaded, and the Westinghouse coupling comes apart, and the brakes are applied very suddenly throughout the train, the empty trucks have the same brake-power as the loaded ones, but when loaded they have the extra weight to stop. That might cause the back part of the train to press very heavily upon the front part of the train and derail wagons, or bring about any amount of accidents in that way. In addition, passengers might be thrown off the cars. It requires a great deal of skill and practice for a driver to learn to work the Westinghouse brake on a train properly equipped.

49. That is what you had in your mind when you referred to these springs as affecting the safety of the train?—Yes.

50. Have you ever known of accidents to occur in that way?—I have seen a train broken in three parts through a rough stop with the Westinghouse brake.

51. But that might happen whether you have pieced springs or complete springs, might it not?—That could happen if there were no springs at all. The less efficient the springs are the more likely that is to happen.

52. But you may possibly have a driver who stops a train in such a way as to cause the train to break apart no matter what springs you have?—There are very few drivers in that position just now.

53. But such a thing is possible?—Yes; but in any case, even assuming a careless driver, his carelessness will be more likely to bring about disaster if his springs were not properly working.

54. Apparently you think that the use of pieced springs affects the wear-and-tear of the train?—Yes, I do.

55. In what way?—Anything that prevents the shocks being properly absorbed brings a severe strain upon the frames of the vehicles generally. For example, any strain that comes upon the draw-gear is absorbed by this spring, to a great extent, but if the spring is not operating properly the strain will come much more suddenly. The difference is between laying a hammer down upon a sheet of glass and dropping it down.

56. That is an extreme illustration, is it not?—Yes, but it is the same principle.

57. Well, apparently you take exception to the use of pieced springs even in wagons, and even though the train may be only composed of wagons?—Yes.

58. Even if there are no passenger-carriages on the train you still take exception to it?—Yes.

59. Well, you say in your speech, "The distance between the coils of the spring so broken is just about the same as the thickness of the spring, with the result that every jerk brings one half of the spring into the other, and it thus becomes a solid block"?—Yes.

60. Will you state more clearly what is meant by that?—What I meant by that is that two coils of springs such as you have here become a solid block one piece against each other. The two pieces become solid to that extent, and come together at one point instead of standing apart as they ought to.

61. Then you are speaking in that case of a spring similar to that on the table here with two coils?—Two parts of one coil; they have become two coils.

62. You do not mean, as your speech suggests, that the whole spring becomes one solid block?—Not the whole spring. If my speech suggests that it is not what I intended to convey.

63. Your speech suggests to me that what you meant was that the whole of the pieced spring becomes one solid block?—Under pressure it probably would.

64. But so does a new spring?—Yes, but not so easily—there is a difference. That is a solid block already to that extent.

65. Supposing it does become a solid block, so does a new spring, as you say, under compression?—Not under the same amount of compression.

66. No, but under compression?—Under a different amount of compression.

67. But a new spring when the compression is gone becomes released, does it not?—It gets back.

68. Does not the same apply to the pieced spring?—Not to the same extent.

69. It applies to the pieced spring, does it not, to the same extent as it did to the pieced spring at the start?—Yes. I do not go back on anything in that speech.

70. You do not go back on this statement: "With the result that every jerk brings one half of the spring into the other, and it thus becomes a solid block, leaving several inches of slack connection between each of the vehicles of the train"?—No. I say when this spring gets a shock it will take very little pressure to bring the whole lot together, but when a new spring gets a shock it will take a great deal more pressure.

71. But it comes back to the original position when the pressure is released?—Yes, I should think it would, if it does not break.

72. You further say in your speech, "Given a train with two draw-bars on each vehicle, and 100 vehicles, you have 200 draw-bars, in each of which the spring is broken into two parts, as will be the case if the present policy is continued long enough. There will be an extra slackness of 6 in. on each vehicle, and so it will give an extra length of train of 600 in., making an enormous difference." I want you to explain why you say there would be an extra slackness of 6 in. on each vehicle?—Because it would take so much less pressure to bring two pieces of spring to a solid block than in the case of a new spring.

73. But the whole spring is only 7 in. in length, is it not?—Yes, I should say that is about it.

74. Where do you get 6 in. of slack connection from?—There is always some little slack. Those springs are not always solid up to the point. Those figures are only given in a general way and not according to a blue print, but it is the principle that applies all the same.

75. But you would not even accept a blue print as correct?—I have not had a blue print.

76. Was there not a blue print attached to the General Manager's report, and you said that "there is some difference between a spring and the picture of a spring, just the same as there might be some difference between a fact and a departmental report"?—Yes.

77. You did have a diagram of the spring before you when you made the speech?—It was somewhere. I do not think I did have it before me. I saw it, but I do not think I saw it before I made my speech.

78. I still want you to explain to the Commission how it is you make this extra slackness of 6 in. on each vehicle?—I say there will be a great deal of extra slackness owing to the weakness of the broken spring. There may not be the exact amount mentioned there, because that is more or less a supposititious statement.

79. It may be $\frac{1}{2}$ in.—how could there be more?—No, because the moment a weak spring is under pressure it begins to give way sooner. If all the springs are weakened by being brought up then the pressure would pull the spring together more quickly.

80. Well, I am suggesting to you that even on your own showing the extra slackness could not be more than $\frac{1}{2}$ in. in place of 6 in.?—That is at the beginning before the pressure comes; but if the spring is partly solid and is not as it ought to be, it is bound to give way and come up to the solid sooner than it otherwise would.

81. Supposing it does, where do you get the extra slackness there?—There are many cases in which two pieces of spring would come up solid, whereas the other would not come up solid at all, by reason of the fact that one is broken and the other is not. There is that fact in addition to the weakening of the spring.

82. But I suppose you can see that the suggestion of 6 in. of slackness is hardly a correct statement or a fair statement. How could it be so if the total length is only 7 in., half of which is made up of solid coils?—I had not got the exact figures before me at the time.

83. As a matter of fact, the solid coils take up more than half?—Yes, they would.

84. I do not suppose the spaces take up more than $3\frac{3}{4}$ in.?—I will make you the present of the $\frac{1}{2}$ in.

85. You are trying to get 6 in. out of $2\frac{3}{4}$ in.?—No; there are two buffer-springs on each wagon.

86. Are they both in use at the same time?—Unquestionably. There is a buffer at each end, and each spring has a buffer, so that there is a possibility that even a good spring will pull in $2\frac{3}{4}$ in. on one hook and $2\frac{3}{4}$ in. on the other.

87. But that is normal, is it not?—Yes.

88. Where do you get the extra slackness?—Well, if it is abnormal it would make no difference to the exact length if all the pieces were in.

89. I wanted to get at what was in your mind, and it is a matter for the Commissioners to consider whether that is the correct inference or not?—Yes.

90. You also said in your speech, "I would remind the Minister that there is some difference between a spring and the picture of a spring, just the same as there might be some difference between a fact and a departmental report." It is only fair to ask you the question, did those words "just the same as there might be some difference between a fact and a departmental report" have any reference to the reports that were presented in that particular case with regard to the rolling-stock?—No, not necessarily. I was speaking generally of the simple confidence the Ministers have in departmental reports.

91. Then you say, speaking of the use of these pieced springs, "It shows also quite clearly that the new General Manager is not maintaining the rolling-stock in the high state of efficiency in which it was handed over to him." Well, do you think that the use of a pieced draw-bar spring like that is a matter which comes under the cognizance of the General Manager? Is it not a matter that comes solely within the jurisdiction of the Chief Mechanical Engineer and his officers?—No, the General Manager unquestionably is responsible. Supposing the General Manager said to the Chief Mechanical Engineer, "There is only so-much money available for your Department for general repairs during the year—you must cut it down by so-and-so," the Chief Mechanical Engineer as a loyal officer may protest, but he would see that it would be his duty, and he would say, "Very well, I will do the best I can with the money you are giving me," and so he would proceed to economize.

92. You are assuming that may be the case?—Yes. May I be allowed to say this, that the statement does not necessarily apply to springs only, but to my general observations with regard to the outside appearance of the stock as it presented itself to me.

93. But for the moment, dealing with the question of draw-bar springs, do you suggest the General Manager is responsible? You are assuming he has given instructions to the Chief Mechanical Engineer that he has only so-much money available for his branch?—That is one possibility.

94. I am going to ask you to deal with it from another point of view. Supposing there is no such instruction, and the Chief Mechanical Engineer is left with a free hand?—Yes.

95. Do you think it is part of the General Manager's duty to go looking under the carriages and wagons, or that he could be held responsible if pieced draw-bar springs are used under the instructions of the Locomotive Department?—If the General Manager is worth his salt he can walk round the yards and tell whether his stock is deteriorating or not, quite apart from the Chief Mechanical Engineer.

96. That does not answer my question?—That is how I understood your question. That is applying to draw-bar springs only. If the General Manager did not know that the Chief Mechanical Engineer was doing it you cannot hold him responsible for that one particular thing. I should say not.

97. I am restricting my question to that?—Yes.

98. In the House you are referring only to draw-bar springs, and you say, "It shows also quite clearly that the new General Manager is not maintaining the rolling-stock in the high state of efficiency in which it was handed over to him"?—I did not refer only to springs.

99. On the 4th August the Minister moved to lay the report of the General Manager and his officers on the table?—Yes.

100. You spoke on that, and your speech then was limited?—If that is the position, this is what I have to say in reply. It is my business as a member of Parliament to hold the General Manager responsible for the condition of the Railway service generally. It is not my business before making a speech in the House to find out whether the Chief Mechanical Engineer was instructed by the General Manager to do something.

101. On general principles you suggest that the General Manager was responsible?—Yes, but I did not suggest an investigation such as this.

102. But it is much better to have a proper investigation when you are about it?—I think a more practical investigation would have been better.

103. But a practical investigation is being made?—But no legal cross-examination will bring out the information required.

104. The taking of evidence is necessary in order to indicate to the Commissioners any particular matters that they should look at during their investigation?—Yes.

105. They are conducting a personal investigation of the rolling-stock right throughout the Dominion—that is, a general investigation—but if there are any particular matters into which it is suggested by any responsible person that they should inquire, it is the desire of the Department and the desire of the Commissioners to make that inquiry and investigation, so that the investigation you have asked for is being made and thoroughly made, and let it be complete while we are about it?—What I cannot understand is why there should be a solicitor to defend the Department and no solicitor to defend the public.

106. I think you may rely upon this that the counsel representing the Department has the public interests in view?—I am quite sure of that, but I understood Mr. Myers was here to defend the Department.

107. I do not think we need go into that, but I have brought you here in the public interest, so that you may state what grounds there are or what grounds you think there are for the charges, and what particular matters you think the Commission should investigate, so you see we are helping in the public interest?—Yes.

108. I want now to go back to the draw-bar springs. Where do you say the slack comes in seeing that the spring first of all is placed under compression and then goes back to its original length when the pressure is released?—The slack comes in, to begin with, when the spring is broken, and therefore being shorter under normal conditions, unless it is pieced with another piece to make it the exact length. Then there would be very little difference in regard to slackness, but there would be some difference then. The object of those two pieces is to fill the space, but they are two separate coils, and notwithstanding the fact that they are filling the space they are not springing at all. Then when it comes up solid I should say it would take less distance or less pressure to bring it up solid. In any case the weakest spring will go up solid under less pressure than the stronger spring. That being so, the train is being subjected to shocks all day long. If the number of shocks under which the spring goes up solid is increased by the weakness of the spring, then the strain on the frames of the rolling-stock will be increased accordingly in the normal working of the train.

109. I understand you to admit that if a pieced spring fills up the precise length of a new spring the slack, if there is any, is very much reduced?—If you fill up all the slack with a new piece that just fits exactly, that would be slightly better than using two pieces of broken spring, nothing like so good as using a proper new spring.

110. You are not in a position to suggest to the Commission any other particular matters that they should investigate than those you have already indicated?—What I would suggest, if I may be allowed to make suggestions, is that they should make a thorough investigation of every vehicle on the line. That is the only way to find out the condition of the rolling-stock; and, further than that, there is this difficulty in connection with the rolling-stock, that a truck that is in Wanganui to-day may be in Auckland to-morrow, and in New Plymouth later on. It may be loaded in Wanganui soon after it is in Auckland, and by and by it is at some other far-distant point. There are no trucks that must necessarily remain in one particular district. Now, everything to my mind depends upon the faithfulness with which the men do the work in the different workshops. To a great extent it comes down to that. I think the safest investigation to find out exactly where the fault lies, if it lies in any of the workshops, is this: to examine the trucks that have been out of each of the workshops just a few weeks, and then you will find out who is doing the work well and who is doing it badly. The lifting and overhauling of trucks, if well done, involves a good deal of labour. On the other hand, it could be done in a more or less slipshod way, and the result of the neglect may not be apparent for some time, but a thorough investigation of the trucks soon after they come out of the shops—say, take a number at random of the trucks that come out of the different workshops of the Dominion and examine them, and I think you will get a very fair indication of what shops are doing well, assuming that some of them are not doing well.

111. I think you may take it that a pretty thorough practical investigation is being made of the rolling-stock?—I did not intend to refer to that, but you asked me for a suggestion.

112. You have suggested one or two particular matters, and I wanted to see if there were any particular matters, apart from the general appearance and general condition, that you thought investigation might be made into with advantage?—Yes. It is very difficult for me to say anything in that direction. My speech was in the direction of showing that from my personal observation and from the effect that that instruction had upon my mind, I came to the conclusion that there was undue economy being practised, and if that were so, then the proper thing to do was to have the vehicles properly and thoroughly examined from beginning to end, because if the railway rolling-stock of the whole of New Zealand gets into a state of bad repair it will be a very serious thing and very costly to get it back to a proper condition, and I thought it was my duty as a public man to bring that out.

113. The evidence given so far in Auckland and here tends to show that there are really a good lot of competent men in the northern workshops, and also in the workshops here, and that as far as they are concerned the work is well and faithfully done?—Well, East Town is superior to anything in the Dominion.

114. When you speak of an examination into the work done at the shops, have you any reason at all to suggest that in this district, for instance, the work is not well and faithfully done?—No, none whatever. On the contrary, I have been in and out of the East Town Workshops a great deal before I left the service, but since then I have hardly even been in the shop except with the Minister of Railways. I am convinced the work is being thoroughly well done at East Town.

115. *The Chairman.*] The Commissioners have been referred to your speech in the House, and I should like to ask you a few questions with a view to ascertaining how much of the speech is to be taken as the result of deliberate thought, and how much is to be taken as possibly figure of speech. There is one paragraph that I do not quite understand. It reads, "A broken spring is no spring at all; practically it is a piece of solid metal, and when the strain comes upon it there is no spring to relieve the strain"?—That means that when a severe strain comes upon it. What I had in my mind was that a good new spring would be strong enough to absorb all the shocks of normal work, but that a broken spring, owing to its weakness, would very soon become solid, and therefore it would not relieve the vehicle of the final blow which comes upon its frame when the spring becomes solid.

116. You really do not contend that a broken spring is not a spring at all?—No, not so far as that.

117. There is a little matter we had better clear up before we go any further. I think there was some discussion in the House between yourself and the Minister of Railways as to the draw-spring being portion of the running-gear. As far as I can see both parties slipped into an error as far as the term "running-gear" is concerned. I think the best classification would be to consider all below the body of the car as the undergear, and then the undergear to be made up of the underframe and running-gear, which in my opinion, and, I think, universal railway practice at Home, includes the wheels, axles, axle-boxes, and horns?—Yes.

118. And then the draw-gear, which certainly includes the draw-bar spring, and then the brake-gear. I take it that when you insisted that the draw-spring is portion of the running-gear you really meant that the draw-spring was portion of the undergear?—Yes.

119. Now, turning to your speech again, you say, "Given a train with two draw-bars on each vehicle, and 100 vehicles, you have 200 draw-bars, in each of which the spring is broken into two parts, as will be the case if the present policy is continued long enough. There will be an extra slackness of 6 in. on each vehicle, and so it will give an extra length of train of 600 in., making an enormous difference." Now, what had you in your mind at that moment? I think there is some confusion of ideas. Had you the idea of buffing or drawing?—What I had in my mind was this: that owing to the weakness of the springs the normal strain of handling a heavy load would bring those springs up solid, and that when any abnormal shock came along—that is to say, in hauling a large train, because I was thinking of the haulage of trains principally for the moment—these weakened springs would under normal conditions become solid when they should not, and that there should be a whole spring there which should have a little life in it. It is the final shock which brings the spring up solid which has to be met, and therefore, owing to the weaker spring giving way and becoming solid under normal pressure, that from time to time throughout the day's work the train would be very severely strained, and there would be an extra strain on the vehicles.

120. I think you were under a misapprehension if you were considering the haulage of the train, because each spring only pushes the vehicle to which it is attached?—The spring next to the engine hauls the whole train—it has the whole weight of the train on it.

121. No?—Surely it has the weight of the whole train on it?

122. No?—Do you mean to say that the guard's van has the same weight as the buffer of the engines?

123. What I mean to say is this: that the buffing-spring or draw-spring under the brake-van has not the whole weight of the train on it—it is simply in traction pushing the brake-van along?—The spring at the back, yes.

124. And in the case of each carriage during traction the springs are only pushing the single carriage to which they are attached?—But power is transmitted from one to the other. There must be a greater pressure on the draw-gear at the front than at the back. Supposing an engine is hauling a train and exerting certain pressure on the coupling-hook, it takes so much power to pull the whole train, and the spring at the end of the front vehicle has upon it the whole weight that the engine is exerting to pull the entire train.

125. That is what you consider to be the case?—Yes.

I think it would be as well at this stage of the inquiry if that point were cleared up. I think your supposition is an erroneous one.

[The Chairman then produced a model of the draw-gear of a carriage, with which he demonstrated to the witness that in traction the draw-springs on each carriage or wagon had the effect of pushing each carriage or wagon along, and that each spring only carried the load due to the traction of the vehicle of which it formed part, and this irrespective of the position of the vehicle in the train.]

126. Do you now understand the position?—Yes. If the spring is weak it will not do its work as well in buffing.

127. I take it that after your inspection of that model and consideration of what I have put before you, you do not desire the Commission to accept as accurate the statement you made partially under a misapprehension of the construction regarding the 600 in. of slackness in a train?—The model which has been shown to me certainly proves that the position would not be quite as bad as that.

128. Are there any witnesses who would be able to speak as to the condition of the rolling-stock that you desire to be called before the Commission?—No.

129. You made some valuable suggestions in answer to a question which Mr. Myers put to you with regard to our inspection of the stock. We are inspecting the stock at the present time, but your remarks about inspection of stock recently out of the workshops are worthy of consideration, and we are obliged to you for them?—Thank you.

130. As far as we can see, the main points to which your attention has been directed by strolling through the yards or travelling in the trains are with regard to deterioration in the painting, the question of draw-bar springs, and the lining up of axle-boxes?—Yes; it seems to me there is the canting of the axle-boxes, and the putting-in of liners.

131. There is nothing else that occurs to you at the present time?—No. I would like to emphasize what I said before, that I have not gone hunting for information—it would not be right for me to do so—and what was said was said as the result of my observations when travelling about. The axle-boxes and want of painting are things you can see when wandering about the platforms or travelling in the trains, and the reference to the springs was taken from the departmental instruction I have already referred to.

132. *Mr. Marchbanks.*] You travel a good deal on the railways?—Yes, a good deal.

133. Have you noticed or do you think there have been more failures due to the brake equipment or to defects in the rolling-stock during the last three years than previously?—No, I really could not give an opinion on that. I have not formed that opinion.

(Witness called by the Commission.)

WILLIAM SIDNEY MURROW sworn and examined. (No. 21.)

1. *Mr. Myers.*] You are a train-examiner at Marton?—Yes; I have been there for nine years as a train-examiner.

2. Have you any other train-examiners or lifters with you there?—Yes, two—a man named Anderson, and a relieving man named James.

3. And are all the trains that pass through Marton examined?—All except the night express.

4. Do you do repair work at Marton?—Yes.

5. And I suppose the practice is the same with you as at other examining stations?—Yes.

6. You do minor repairs, and if there is anything of a more important character you send the vehicle to the shops?—Yes.

7. The traffic has increased during the last few years at Marton because there are two expresses extra?—Yes, it has increased considerably.

8. What condition do you find the rolling-stock in now?—I find it in very fair condition myself.

9. How does it compare with the condition in the past—say, three or four years ago?—I think a lot of the rolling-stock is improving. I think more new vehicles are being turned out.

10. What do you do with the old vehicles?—They are put into the sheds to be attended to.

11. What have you to say in regard to the painting?—I think it is pretty well up to date so far as my section is concerned. Of course, the vehicles go through a lot of tunnels, and we do not take notice of a bit of black on them. We take the dates on them.

12. Are they painted now as frequently as they used to be painted?—Yes, I think so. I think they are painted a little more often on our run, because they get a bit dirty through passing through the tunnels. They go to the East Town shops to be painted.

13. Have you come across many broken axles or broken tires during the last few years?—No, not broken.

14. How about the axle-boxes: is it part of your duty to examine them?—Yes.

15. What have you to say in regard to the condition of the axle-boxes?—Of course, if the axle-boxes get slack in the horn plates we put liners into them to square them up where they are worn.

16. Is that a new practice or an old practice?—It has been the practice ever since I have been a train-examiner.

17. If there is a good deal of play what do you do?—Send them to the shops to get the horn-plates fixed up.

18. But if there is just a little play you put in a liner?—Yes.

19. Does that often happen?—No, not very frequently.

20. Do you use many draw-bar springs down your way?—Yes.

21. Where do you get your draw-bar springs and any other supplies you require?—From the Car and Wagon Inspector at Wanganui.

22. Do you have any difficulty in getting supplies, or is there any delay?—No.

23. Do you ever use pieced draw-bar springs like the one on the table here?—We did for a time—up till five months back. We have had a very good supply of springs in since then.

24. Over what period were you using pieced springs?—I could not say exactly. We had a circular to the effect that draw-bar springs were just about out—Mr. Valentine's circular.

25. Had you ever known of their being used before at times?—No.

26. Did you use them in cars or wagons, or in both?—Not in cars—only wagons.

27. Has it ever been suggested to you that the pieced springs were not efficient?—No. They seemed to be all right so far as the draw-gear is concerned—they kept tight. Of course, they are cramped up when we put them in.

28. Do you ever put more than two pieces in?—No, only two pieces.

29. *The Chairman.*] Had you any instructions to discontinue the use of pieced springs?—No.
30. You simply discontinued their use when you got sufficient new springs?—Yes.
31. The use of the pieced springs was to carry you over the shortage of the whole springs?—Yes.
32. Have you ever put in springs pieced in more than two parts?—No.
33. Have you ever allowed a spring broken in two places—in three parts—to run?—If a truck is loaded we generally mark it so that the man next to us will get it as soon as it is empty. We call attention to it.
34. But if the truck were empty?—We would stop it.
35. *Mr. Marchbanks.*] How many wagons a day, roughly, do you examine at Marton?—I reckon about nine hundred to one thousand go through our station, but I do not examine them all; I just relieve the men. I do more repairs than examining.
36. Can you say how many draw-bar springs are put in during a week on an average?—It varies—sometimes sixteen or eighteen, and in another week we may only put in five or six.
37. Are there different types of draw-bar springs in use?—Yes.
38. Which stand best?—I have not had any double-coil type broken yet: that is composed of two springs, one inside the other.
39. But those have only been recently issued?—I do not think there is a great lot of them in use so far.

(Witness called by the Commission.)

WILLIAM RICHARD SHAW sworn and examined. (No. 22.)

1. *Mr. Myers.*] You are a train-examiner stationed at Hawera?—Yes.
2. How long have you been train-examining?—About twelve years.
3. And what is your total service in the Department?—About fifteen or sixteen years.
4. How long have you been examining trains at Hawera?—For nine years.
5. I think you have another examiner associated with you there?—Yes, Henry John Seaton.
6. And you are both lifters as well as examiners?—Yes.
7. Do you have much stock passing through Hawera, in a day or a week?—I think we handle about twenty-three or twenty-five trains a day in and out, and they are all examined except the early goods and late goods at night.
8. Would you mind saying what you think of the present condition of the rolling-stock which goes through your hands as far as you have seen it?—Well, I do not think there is much change in it. There appears to be just about the same amount of work as compared with what we used to do to the stock nine years ago. There is not much difference.
9. If there is any difference at all is it for the better or for the worse?—To a certain extent my own idea is that it is a little for the worse.
10. In what respect?—In my opinion I do not think the lifting is done frequently enough—I mean the lifting in the shops, the general overhauling of the wagons.
11. Is it done as frequently now as it used to be?—No; there is a difference of twelve months between each wagon.
12. Does that apply to all wagons or to certain classes?—Only to certain classes.
13. Is there any other difference?—From my observation as a lifter I notice the wagons have been running strongly for two years, and the wear on the brasses and the bearings increases to such an extent that I think it is only right the wagons should be attended to every two years. Another thing is the rough shunting and suchlike. Parts of the boxes that run in the horn-plates have broken away, and a number of the hot axle-boxes I consider are caused through the parts in the boxes being broken. If those wagons were lifted more frequently it would mean there would be less hot boxes.
14. What do you do when you find hot boxes?—We examine the journals and ascertain the damage done inside, and if it is too extensive for us to repair we forward the vehicle to the nearest workshops, which is East Town.
15. At all events, when anything of that sort is noticed it is put right?—Yes, at once.
16. You think the wagons should go more frequently into the shops for lifting?—Yes. The wear on the brasses increases to such an extent on a two-years run that they become very sharp on the edges—in fact, so sharp that they will cut the fingers—and I attribute a lot of the hot axle-boxes to the sharpness of the brass bearings on the journals.
17. What do you say about carriages?—They are in good order, generally.
18. Has the general condition improved or otherwise in the course of the last few years?—I should say it has improved—that is, speaking with regard to my own stock.
19. And when you speak of wagons being lifted more frequently, that only applies to certain classes?—Yes, mostly L wagons and MA wagons.
20. You have spoken of hot boxes: have you found them more frequently during the last twelve months than formerly?—Yes, much more frequently.
21. Is that the only suggestion you can make as to the deterioration of the rolling-stock?—Yes. To a certain extent I think the shunting has a tremendous lot to do with the deterioration of the rolling-stock—the general damage caused through shunting.
22. But that damage is all repaired as it arises, is it not?—Yes, practically, the obvious damage. If the side of a car is torn out, or a wagon derailed, the horn-plates bent, or the buffer bent, that is fixed up; but I notice from my own observation that the men are now handling the stock more roughly than they used to do in shunting. If I may be allowed to say it, I think I

can put my finger on the cause of the men handling the stock in such a rough manner. I have thought over the matter and I have come to the conclusion that it is owing to the poor pay the shunters get. I am not a shunter; but they get very poor pay. I will give you an example: the Stationmaster books a man out on the Monday morning to go on the shunt, and that man has been over on the platform cleaning cars or working in the goods-shed. Nearly all the Traffic men prefer these jobs, and none of them want to do the shunting. They say, "Why should we run our legs off for the same money a man is getting for pushing a barrow in the shed?" and when they are forced to go out on the shunt they make things lively so that the Stationmaster will say, "You are no darn good here in this job, I will put you back in the shed." I know that for a positive fact. They warm the thing up so that if the Stationmaster has any feeling for the cars or trucks he will put them back. I think if the shunters who are doing the work got more pay it would save the Department a tremendous lot of money in repairs, because it would then be a loss to the shunters to be put back on to the platform or into the shed. There would be an incentive for the men to get the extra pay by attending to the shunting properly.

23. There are quite a number of shunters and guards who are all, in a sense, getting the same pay?—No; I mean the *bona fide* shunters who are risking their lives should get more. I think it would be to the Department's interest if they gave those men more pay. I am not a shunter myself, and I do not intend to be one. I think it should be a competitive job, and not a job where the men are forced to go against their will. If they are forced to do it they will not do the work properly, and if they were granted more wages I think the repair bill for the rolling-stock would come down a great deal.

24. From some cause or other you think the wagons are not being handled as they used to be?—Yes. There are also cases of broken axle-boxes and interior damage to the wagons and cars. I sent a car to the shops a short while ago with the whole top body shifting on the frame. I considered it was not safe, and I had it removed from the train and sent to East Town. That would not have occurred if they had used any care, but they do not trouble.

25. Apart from the one point you have mentioned, the rolling-stock, if anything, has improved, apart from the particular wagons you have referred to?—Yes.

26. Have you used any pieced draw-bar springs?—Yes, frequently. I have used them even before the instructions came along. That was in case of necessity when I have been short and not able to get new ones.

27. Has that practice dated back many years as far as you yourself are concerned?—I did it about four or five years ago at Hawera.

28. There was no instruction then one way or the other?—No.

29. You have also used them since the instruction of 1914?—Yes. We had nothing else to use; there was a shortage at that time.

30. How many pieces do you put in?—I never think of using more than two pieces.

31. And do you always have the full extent of 7 in.?—Yes; I always used a washer to make up the deficiency so as to keep the buffers out to the prescribed distance.

32. Is there any question of safety involved in the use of a pieced draw-bar spring in place of a complete spring?—I do not think it affects it in the slightest. In fact, if I had thought that I would never have used them.

33. And have you heard anything lately to alter your view on that point?—Nothing at all. I would use them again if forced rather than that the wagons should run with a lot of slack or no spring at all. They would be slightly deader than a whole spring, but I would use them again if the necessity arose.

34. Speaking generally, do you find any difficulty in getting repair stock for sidings, whether draw-bar springs or other supplies?—No, we have had no difficulty lately—not since Mr. Valentine took charge.

35. The supplies have been delivered promptly?—Yes, they always come to hand, and we have never been short of anything.

36. *The Chairman.*] What was the condition of the rolling-stock you had six months ago as compared with the condition to-day?—It is just about on the same level.

37. Have you received any instruction to make a special effort in repairs during the last six months?—No. I asked Mr. Valentine verbally if we were to be considered to be doing our best or doing enough, and he told me that our work compared favourably with other stations. I said that if he wanted us to get more out I would willingly make an endeavour.

38. What made you ask that question—the fact that some remarks had been made in the House about the rolling-stock?—No, for my own information. I had trouble with the previous Car and Wagon Inspector. He reported me, but could not make good his case, and I therefore asked Mr. Valentine what he thought about the matter.

39. You spoke about the back part of the axle-boxes being broken away: to what did you refer?—The flange of the box that runs in the horn-stays—the inside next to the boss of the wheel.

40. You say that hot boxes are more frequent than formerly?—Yes.

41. You attribute that to the longer period the wagons are kept in work?—Yes.

42. You say you put in a washer with the draw-bar springs. Have you been using two parts of springs and using a washer?—Yes, using a washer and packing out to 15 in. from the head of the buffer to the base.

43. You may look through the scrap-heap and find portions that make up the length?—In all cases you cannot do that. In some cases you have to pack up with washers.

44. *Mr. Marchbanks.*] You say you have not had any difficulty in getting supplies lately?—Not since Mr. Valentine took over; but I had a difficulty in getting supplies before he came here—I had to wait longer.

45. What kind of axle-boxes get hot more frequently?—I think they are all tarred with the same brush. We have a lot of trouble with the round bottom Beuther and E boxes.

46. Do you have any trouble with the bearing-springs?—Sometimes we get a few broken, and sometimes we do not get any for months.

47. Those are single springs?—Yes, and sometimes double. There are hardly any single-coil springs; they are all converted to double-coil springs.

48. I mean there are sometimes bearing-springs supported by a small casting on top of the boxes?—There is sometimes a double spring.

49. Have you ever had the two go?—No, not the two go—only one.

50. Do you get many broken draw-bars?—No, very few. I have had two, I think, in the last six months.

(Witness called by the Commission.)

SIDNEY LOFT sworn and examined. (No. 23.)

1. *Mr. Myers.*] You are employed in the Railway Department in what capacity?—Westinghouse-brake fitter, at New Plymouth.

2. How long have you been in your present position?—Two years next May in New Plymouth.

3. And before that had you occupied a similar position elsewhere?—At East Town Workshops for two years on Westinghouse-brake work, and one year on locomotives.

4. I suppose your observations have been confined mainly to the Westinghouse-brake apparatus?—Quite so.

5. Are you constantly employed in connection with the Westinghouse-brake apparatus?—Yes.

6. What are your duties in that connection?—My duty is to take off the cylinder-head, examine the piston and leather and clean them, and then oil the leather and put it back again; take off the triple, examine it, overhaul and clean it and put it back; test the brake, oil the pins, grease the cocks. That is all my work.

7. Who decides when it is necessary for this work to be done by you?—The train-examiner.

8. And is your work on the repair siding, or have you a separate repair siding?—I have an office and bench in the locomotive-shed.

9. So far as the Westinghouse-brake apparatus is concerned, can you tell the Commission whether that is maintained well and efficiently?—Yes; the rods are always found to be in good order, and the whole work of the Westinghouse brake is in good order.

10. Is it kept up now in as good condition as when you went to New Plymouth?—Yes, in every way.

11. *The Chairman.*] I suppose in dealing with the Westinghouse brake you have the opportunity to view the undergear generally of the cars and wagons?—Yes.

12. What is your opinion generally of the condition of the undergear?—My opinion is that it is in good order. The gear always seemed to be good.

13. Six months ago was it good?—Yes.

14. And two years ago?—Yes, two years ago.

15. And before that?—Yes, since I have been on the Westinghouse brake, nearly three years, I have always found the wagons and cars in good condition.

16. Have you noticed many broken draw-bar springs?—No.

17. Have you noticed any broken bearing-springs?—No.

18. Then, from your own personal experience, being an employee on the road, you would consider the stock is on the whole well kept up?—I would say so.

19. *Mr. Marchbanks.*] Have you sufficient accommodation to enable you to do your work properly?—Yes, quite sufficient.

20. Do you come across many quick-action triples with the quick action cut out?—No.

21. Do you have many wagons with the brake cut out coming in on trains?—No, that is quite infrequent.

22. Is there much damage done to the axle-boxes?—No.

23. Have you seen any broken axle-boxes?—No, not one.

(Witness called by the Commission.)

FREDERICK JOSEPH ROGERS sworn and examined. (No. 24.)

1. *Mr. Myers.*] You are a train-examiner at New Plymouth?—Yes.

2. How long have you been doing that work at New Plymouth?—Since August last. I was at Taumarunui prior to that for about a couple of years, and I was doing relieving work from Taumarunui to New Plymouth for another two years, and I was at the station here for about six months before I went out.

3. What work were you doing there?—Train-examining; and I was about four years at East Town in the shops, lifting.

4. Altogether you have been in the service how long?—A little over nine years.

5. There is another examiner in New Plymouth besides yourself, is there not?—Yes, a Mr. Gore.

6. Are all the trains that come in and go out of New Plymouth examined?—Yes, every one.

7. Do you also do repairs?—Yes, both Mr. Gore and I do. We are examiners and lifters.

8. What condition do you find the rolling-stock in now?—Well, in the pink of condition. It is better now, I should think, than when I came out on the road, and I have been out on the road about five years.

9. Are you speaking of the rolling-stock generally or as to any particular part?—The cars and wagons. There have been a lot of improvements made since I have been out on the road.

10. What about the painting?—Well, we get instructions from the Car Inspector to send so-many per week.

11. How does the present condition as regards painting compare with the past condition of the rolling-stock?—It is kept up to date.

12. Do you find many hot axle-boxes?—Oh, yes, a few.

13. More than usual?—No. That is on the ballast-wagons mostly.

14. Do you find much play in the axle-boxes?—No, none whatever.

15. Do you ever put in liners?—Yes, if they are needed.

16. Is that a new practice or an old practice?—Ever since I have been in the Railway service it has been the practice. Of course, if they are too bad we take the boxes off and put new boxes on. We do that ourselves.

17. Do you put in new draw-bar springs too?—Yes.

18. Do you ever put in pieced springs like that on the table here?—Only if we have not got new ones.

19. How long has that practice been adopted of putting in pieced springs if you have no others available?—I think it is only a little over eighteen months ago.

20. Do you often put them in?—No, we always put in new springs if we have them, but we never put pieced springs on cars—only on wagons.

21. What is the greatest number of pieces you have put in?—Two; that is the instruction we had.

22. How do you find they work, well or otherwise?—As well as the new ones on the wagons—that is, if the buffers are tightened up, as they ought to be.

23. Speaking from your own practical knowledge, does the draw-bar spring have anything to do with the safety of the train?—Well, they both pull together.

24. So far as the safety of the train is concerned, or a vehicle, is there any difference if you have complete draw-bar springs or pieced draw-bar springs such as that on the table?—It does not matter either way—whether it is all in one piece or two pieces—so far as the safety of the train is concerned, because if the spring was to get all hashed it has still got the collar on it.

25. Do you keep spares at New Plymouth?—Yes, we get them from the Car and Wagon Inspector, Mr. Valentine.

26. Do you find any difficulty at all in getting supplies?—No, none whatever. If they have not the supplies on hand at the time they may be delayed, but we do not find that happen often.

27. *The Chairman.*] You find there is no difference now in the condition of the stock as compared with what it was when you first went out on the road?—No, I think it is better.

28. No more hot boxes than there used to be?—No.

29. To what do you attribute the hot boxes?—Overloading, or sometimes dirt causes it.

30. On what class of vehicles do you generally find them?—On ballast-wagons. We very seldom get hot boxes on carriages and ordinary wagons. I have not had any on the cars now for months, and we very seldom have them on wagons. As they pass through our hands we oil them.

31. Roughly speaking, how many do you get a week?—We have not had any for weeks.

32. Do you come across any axle-boxes with the inside flanges against the horn-plates broken off?—Only if they have been off the line.

33. *Mr. Marchbanks.*] Do you examine the draw-bars on every train you examine?—Yes.

34. During your examination have you ever seen a draw-bar spring in three pieces—that is to say, put in in three pieces?—Not put in, only during a rough journey or shunting operations.

35. You mean you have seen them broken into three?—Yes.

36. But you have never seen a spring repaired and put in in three pieces?—No.

37. Do you get many broken draw-bars?—Only when they have been off the road.

38. I do not mean in shunting, but coming in on trains?—No.

At this stage the Commission adjourned to make an inspection of the East Town Workshops and the rolling-stock at Palmerston North and Napier, and to meet for the taking of evidence at Wellington on the 19th February, 1917.

WELLINGTON, MONDAY, 19TH FEBRUARY, 1917.

The Commission met at 10 a.m.

The Chairman: The Commission will now open in Wellington, and I will ask the Secretary to read the Warrant. [Warrant read.]

The Chairman: Mr. Myers, the Commission desires the following returns to be produced:—

(I.) A list of all derailments of vehicles in running trains, together with the cause as found by the Board of Inquiry.

- (2.) A list of broken axles in the periods 1911-12 to 1915-16.
- (3.) A list of broken tires for the same period.
- (4.) A return of the issue of all draw-bar springs used in the maintenance each year from the period 1911-12 to the period 1915-16; also bearing-springs, axles, and tires for the same periods.
- (5.) A return showing the stock on date of stocktaking in each year, and the number of springs on order in each year.

Mr. Wilford: Mr. Chairman, I have no status here, but may I ask that there be added to that list whether any men have been fined, and the fines appear in the black-list, for draw-bar failures?

The Chairman: Yes, the Commission will also ask for that.

Mr. Myers: That shall be prepared. I am informed there is not one, but we shall make absolutely sure.

Mr. Wilford: I want to make sure if there are any.

Mr. Myers: How far back would you like us to go?

Mr. Wilford: As far as you can.

The Chairman: Could you not give a date within a moderate time?

Mr. Wilford: I could not without communicating a good distance from here.

Mr. Myers: Would five or six years back do?

Mr. Wilford: I do not know.

Mr. Myers: The inquiry is over a period of the last three years, and I think if we go back over the last six years that ought to be sufficient.

The Chairman: Yes, I think that ought to be sufficient.

Mr. Wilford: It is for you to say, sir.

Mr. Myers: I understand that Mr. Wilford is present at the invitation of the Commission, and I want to meet his convenience as far as I can in the order of business.

The Chairman: Will you take preference, Mr. Wilford?

Mr. Wilford: I shall be obliged.

Mr. T. M. WILFORD made the following statement:—

Mr. Chairman,—I would like at the outset, sir, to express my indebtedness to you for your invitation to be present. It was quite impossible for me to attend at Auckland. I received a telegram from the Hon. Mr. Herries at five minutes past 6 on the Saturday night at Napier informing me that the Commission was sitting in Auckland on the Monday morning. The telegram I will hand in. It reached Napier at 4.46 on the Saturday afternoon, and I was not at the hotel when the telegram actually came. I wish to explain that in order to show there was no discourtesy on my part. I understand a copy of the Commission was forwarded to my office on the Thursday prior to the Saturday. I left for the Napier Supreme Court on the Thursday morning, but my letters were not forwarded on to me, and I received this telegram from the Hon. Mr. Herries on the Saturday. I desire to put this telegram in, as I wish to have the whole thing on record. It reads,—

I find that letter posted to your office Thursday informing you of appointment Commission inquire into condition rolling-stock, containing also copy order of reference, and intimation that Commission would open at Auckland fifth instant has not been forwarded on from your office. Am therefore telegraphing you the information regarding sitting Commission to enable you to be present at Auckland if you so desire.—W. H. HERRIES.

You notice that telegram was sent to me at 1.40 p.m. on the Saturday, and reached Napier at 4.36 p.m., and I have marked on it, "Received by me at 6.5 p.m. on Saturday, 3rd February, at Napier. Was at Hawke's Bay Club till 6 p.m. talking to Mr. Alexander Campbell, and Mr. Kettle, and Edgar Warrick. Met Mr. Lusk at door of Masonic at a minute or two after 6 p.m.—Correct, E.W., 3/2/17." I put that in to show the Commission that I could not reach Auckland at 10 o'clock on the Monday morning. Now, sir, there are only three things I wish to say, and I do not expect to take more than five minutes. I want to say that I express my extreme gratification that all I said in Parliament has been proved already by the Commission, and that the Engineers admit that broken springs have been used, as I said. I am not an engineer, of course, and Paul Painlevé—who is, I suppose, one of the greatest scientific engineers in the world, and the man who discovered the new explosive in use at Verdun—says that the scientific age is an age which has the measure of its own ignorance. Therefore you will not desire me to discuss the question as to whether a whole spring is as good as half a spring. I know that Mr. Veitch, in giving evidence, has been carried by cross-examination through pages and pages of what ought to be done. I profess absolute ignorance on the subject. I have no technical knowledge, and as to whether one is better than the other or not I do not know. The second point is that I made my statement in the House as a public man as a matter of public duty, and I believe "unless you criticize the Department you will not get perfection." Those are Mr. Herries's words, and I want them to go down. They come from *Hansard* (Vol. 128, p. 806, 1904). I believe in that; it is a kind of spur to effort. I would like to say that nothing would convince me as a layman, although it might convince you because you have a knowledge of the subject and I have none, that two bits of broken spring are as good as one whole spring.

Mr. Myers: I have never heard my friend so modest.

Mr. Wilford: Well, my friend has a lot to learn. I have driven a motor-car for twelve years, and though I know the difference between the sparking-plug and the radiator, and understand how my electricity is generated, I have not even a nodding acquaintance with engineering, nor do I speak as an engineer. I want to say, therefore, that as far as the engineering points of this

Commission are concerned I am personally ignorant of the whole thing. I want, however, to rely upon the statements of men who have already given their evidence, and they make my case for me complete, in my opinion; so complete that I propose to rely on their statements when the matter goes back to Parliament. The men whose evidence I rely on are Mr. Bargh, Manager, Petone Workshops; Mr. Kelly, Car and Wagon Inspector at Wellington; Mr. Kydd; Mr. Valentine; and Mr. Mackley.

Mr. Myers: Mr. Bargh and Mr. Kelly have not given evidence yet.

Mr. Wilford: I am taking their statements from the report, D.-6. I hope they are not going back on their statements, though they are the most parrot-like reports I have ever seen. They are a sort of "ditto" answers all through.

Mr. Myers: What does that matter so long as they are honest?

Mr. Wilford: I do not suggest they are not honest for a minute. I think they have a very capable staff, but they want egging on at times. They mean well feebly, as Mr. Lloyd George put it. That is what I think. I think they are quite honest and able men, but I am not, as I say, an engineer. Now, I rely on Mr. Bargh, Mr. Mackley, Mr. Kelly, Mr. Valentine, and Mr. Paterson to prove my case. A point I wish to make clear here is that when Mr. Veitch's and my speeches were made in Parliament we had not the paper D.-6 before us, or any statement from them.

Mr. Myers: That is not correct, is it?

Mr. Wilford: Yes; I will show you how. The whole of this trial, so far as the Commission is concerned, has been held on the wrong assumption of parliamentary procedure, and I think at least I can claim to have had some experience on that point as to the forms of the House. It is the principle of every Government, in order to burke discussion—I am not saying any particular Government, the old Government that I first knew in Mr. Seddon's time, the Ward Government, the Mackenzie Government, the Reform Government, and the National Government—all hide their reports up their sleeve, so to speak, until they come down to the House. No one was allowed to see the D.-6 for some time. Mr. Herries comes into the House in the afternoon when the House was thin or there were few railway men about, and he produced the report, and moved that it "do lie on the table." He holds it until he finishes his speech, and it is not circulated until it is ordered to be laid on the table.

The Chairman: I think the Commission understands the procedure.

Mr. Wilford: Mr. Herries moves the motion, and if there is no one desirous of getting up to carry on the discussion the motion is immediately carried and the paper goes on the table without debate. It may transpire that a man who knows something about railway matters gets up and makes a speech, and sends a railway man to get hold of the report when Mr. Herries has finished reading it, but my speech was made before Mr. Herries produced the report on this occasion. Therefore any remarks I made were made not after the reading of the report but before.

The Chairman: I think that was referred to in *Hansard*.

Mr. Wilford: May I refer you to Mr. Herries's speech on the 4th August, 1916, at page 792. He says, "I think that when the honourable gentleman reads the reports of the Inspectors and the Workshops Managers he will see. . . ." There is Mr. Herries's admission that we had never seen it. Therefore I do not want this Commission to work on the assumption that when I made my speech I had read these reports. Mr. Herries had them, and that is one point I must make clear.

Mr. Myers: Were they read by the Minister?

Mr. Wilford: Oh, no. To show you the Minister had not read the report, if you will look at the Railways Statement of the same year you will find that Mr. Herries moved the statement there, and I followed him, and as he did not read it I took it from his hand and read it, and put nearly the whole of it into *Hansard*. I said to honourable members that in order to judge of what Mr. Herries had been talking about I would read the report, and I put the report in *Hansard* word for word. That is to say, it is a little political game that is played by all Ministers. I am not blaming the Minister: every one of them have done it.

Mr. Myers: I do not see that this Commission is set up to inquire into political games.

Mr. Wilford: No; but the point is this: that the reports of these managers were not in my possession when I made my speech. That is the point I wish to make. Now let me point out the reports I rely on. Mr. Paterson says at page 3 of D.-6, "A few years ago there was a shortage of buffer-springs, but this was overcome by piecing up, which met the requirements. The question of safety is not concerned thereby." Mr. Valentine says at page 5, "With regard to spares, there has been a shortage of draw-bar springs lately, and I have had to use two pieces on wagon draw-bars. No cars or bogie wagons have been fitted with two pieces of spring or draw-bars, except a few cars on short-distance runs." I take from Mr. Valentine's statement that there is a shortage of spares, a shortage of draw-bar springs, and that they pieced two pieces of draw-bar springs together.

Mr. Myers: Draw-bar springs are an item of spares, and he limits it.

Mr. Wilford: I mean the spares of draw-bars. I do not know anything about anything else. That is all I was informed of. That is what Mr. Valentine says. Then in Mr. Kydd's statement, and I want to claim him too, he says, "So far as spares are concerned, there has occasionally been a shortage of draw-bar springs, but nothing else, and on wagon stock we have had to use two half-springs, which is not in any way unsafe or detrimental to the stock." Then Mr. Bargh, at page 7, says, "The only shortage we have experienced was with draw-bar springs. Wagons have occasionally left the shops with pieced draw-bar springs, but this does not affect its safety." Then I want to refer to Mr. Mackley's statement. He says, "No car or wagon would be allowed to run even if one leaf of the spring was broken." And then Mr. Kelly, at page 8—

The Chairman: I would point out that Mackley is referring there to bearing-springs.

Mr. Wilford: What is the difference? Frankly, I do not know. Will you tell me that?

The Chairman: The bearing-spring is the spring on top of the axle-box which takes the shock of the road. That occupies the same position with reference to the vehicle as the ordinary spring does in the case of the motor-car you were quoting.

Mr. Wilford: Yes, the shock-absorber.

The Chairman: The draw-bar spring is the spring in the underframe of the vehicle which takes up the shocks of buffing and drawing. They are two distinct things altogether.

Mr. Wilford: But the bearing-springs mean any springs holding the carriage?

The Chairman: No; the spring which supports the carriage on the road.

Mr. Wilford: Supposing I had a shock-absorbing spring on the back of my motor-car, would not that be a bearing-spring?

The Chairman: No, it would not be; it would be a shock-absorber attached to the bearing-spring.

Mr. Wilford: That shows my ignorance, then. The last statement of Mr. Kelly was, "Broken draw-bar springs have been pieced up, owing to the shortage; but this in no way affects the safety of the vehicle, and this has been done often in years past." Now, sir, that is the evidence I am relying on to show that my case is proved, and in order to show that broken springs have been pieced together, and that there has been a shortage of spares.

Mr. Myers: You do not quite understand. I will explain to you so that you will not be under a misapprehension.

Mr. Wilford: I am not taking your statement.

Mr. Myers: Mr. Wilford seems to think that spares are one thing and draw-bars another thing.

Mr. Wilford: I mean that there is a shortage of spares for draw-bar springs.

Mr. Myers: That shows that my friend misapprehends the position.

The Chairman: I think the Commission understands the position.

Mr. Wilford: I say that draw-bar springs were pieced together because there was a shortage of them, otherwise they would never have pieced them together. I notice in Mr. Myers's address, which he has been kind enough to allow me to read, he says, "Mr. Wilford must have referred to bearing-springs," but Mr. Kelly says, "When I read Mr. Wilford's question in the House I at once thought he alluded to draw-bar springs, although he mentioned bearing-springs." Now we will turn to Mr. Bargh. He says, "I read Mr. Wilford's question *re* condition of rolling-stock, and I came to the conclusion that he had received some information *re* the use of draw-bar springs." Therefore I want to take those two statements of Mr. Bargh's and Mr. Kelly's and put them against Mr. Myers's opening that I must have meant bearing-springs. Those two gentlemen did not think so, and Mr. Myers did; but Mr. Myers is not altogether unbiased—he is now appearing for the Department. His statement on the tagging of the railway when not appearing for the Department is quite different.

Mr. Myers: Does that refer to this case?

Mr. Wilford: No, it does not.

Mr. Myers: Then why refer to it?

Mr. Wilford: Perhaps it is a little tilt. I shall show now that all the complaints I made in Parliament in regard to springs had been formerly made by the Amalgamated Society of Railway Servants. I do not think the Commission knows that. Has that fact been told to the Commission by Mr. Myers? Or what Mr. Herries says, "I do not approve of the secretive methods of the Railway Department." That is to be found in *Hansard* (Vol. 156, p. 109, 1911). That was said when he was in opposition. I want to know whether the Railway Department has told the Commission that the whole of this question of draw-bar springs and the using of two pieces instead of one whole spring has been solemnly investigated by the executive of the Amalgamated Society of Railway Servants, that after hearing evidence and discussing the matter a deputation was arranged to wait on Mr. McVilly on the matter, and that Mr. McVilly took a note of that evidence. I would ask you to get that evidence, sir, if I may. I cannot get it, and I take it that the Commission will ask Mr. McVilly to produce it. I will give the exact date and the page so that we shall have it by the book, and I take all this information from the *Railway Review* of the 7th May, 1915. On the 8th March, 1915, a remit was received by the council of the Amalgamated Society of Railway Servants, which includes thousands and thousands of men, and at page 211 of the *Railway Review* of the 7th May, 1915, it states, "Building up broken draw-gear springs with broken pieces. Represent to Minister by deputation." Draw-gear and draw-bar are the same, I take it. A discussion took place in the executive council on that date. They considered the remit from one of their branches, and discussed it, and decided to take action in regard to the matter. Now, what did they do? We will follow it up. I will now refer to the *Railway Review* of the 27th August, 1915. In that *Review*, at page 385, it states, "Council met at 9 a.m., Mr. Hampton presiding. Roll called, all the council being present. Council adjourned at 9.50 to meet the General Manager, which interview concluded at 2 p.m." The 14th is the date of the meeting with Mr. McVilly, and if Mr. McVilly cannot provide the notes of the deputation I will ask you to apply to the society. That is when the deputation took place. Then I want you, sir, to get Mr. Hiley's reply, which was given on the 14th September, 1915—three months later to the day. Therefore, sir, I want to make this point: that the representations I have made about broken springs have been made by the Amalgamated Society of Railway Servants after being investigated by their officers, and the executive, after receiving a remit from the officers of their branch, represented to the General Manager their views, and I would ask you to apply for the minutes of the deputation which waited upon Mr. McVilly. I take it he was acting authoritatively. I cannot understand why you were not told this. However, Mr. Myers will explain, no doubt, because he must have known of it, and Mr. McVilly must have known of it.

Mr. Myers: You must remember that none of the head officers have yet been called.

Mr. Wilford: I did not know that. I have not seen the evidence. I do not know who has been called except what has appeared in the papers. The only evidence I have seen is Mr. Veitch's, Mr. Myers's address, and the evidence of another witness who said that broken springs were better than whole springs. I think unless the man was a congenital idiot he would not say that. I do not know who the man was, but his name should be inscribed in the railway books. That is practically the whole of the matter I wish to refer to. I do not take back anything I said. I believe I did the right thing, and I would do it again under the same circumstances, and I hope the result will be that it will do good. Any representations that are made to me by anybody I believe in can rely that I will always bring them before Parliament, and I do not care what the result is. I have the greatest respect for the individual officers of the Railway Department, as they know, but the Hutt Railway has been enough for me.

THOMAS MASON WILFORD sworn and examined. (No. 25.)

1. *Mr. Myers:* You are the member of Parliament representing the Hutt Electorate?—Yes.
2. You say, I think, that on your return from Napier you made a statement to a *Times* reporter with regard to this Commission?—Yes.
3. It reads, "Mr. T. M. Wilford, M.P., stated last evening that on Saturday evening, while he was in Napier, he had received a telegram from the Minister of Railways advising him that a Commission was to sit in Auckland on Monday morning to inquire into complaints concerning the condition of railway rolling-stock. Mr. Wilford said he was an interested party, having criticized the railways some time during last session, but he could not say from memory when, and the Commission had been set up without reference to him. It was obviously impossible for him to attend the Commission's opening sitting, and he feels that he has been treated in a cavalier manner in connection with it, as presumably the object of the inquiry is to investigate charges he is supposed to have made, and he has been robbed of the opportunity of knowing what they are or of appearing to support them or to cross-examine witnesses." Do you suggest that you are prejudiced in any way by evidence having been taken at Auckland and Wanganui without your attending?—After having read the report of D.-6 thoroughly since I came back from Napier I do not think I have been.
4. Because I want to say that if you think you are in any way prejudiced and you desire to cross-examine any of the witnesses who have been called in Auckland or Wanganui, we will arrange to have such witnesses here to enable you to cross-examine them?—No; since I have gone through D.-6 I do not think so.
5. In that statement in the *Times* you referred to a telegram you had received?—Yes.
6. That was after your return to Wellington?—Yes.
7. Had you then received the Minister's letter?—No.
8. When you saw the newspaper reporter?—No.
9. Then you did not receive the Minister's letter till the Monday morning?—The Tuesday morning.
10. That was not the fault of the Department?—No, but I knew nothing of it. I make no complaint whatever against the Commission. Since I have read D.-6 I find that I could not have done anything at all.
11. That is not the point. There was sent to your office on the 1st February a letter from the Minister, which read as follows: "1st February, 1917.—SIR,—I have the honour to inform you that a Commission has been appointed to inquire into the allegations made concerning the upkeep of the railway rolling-stock during the period from August, 1913, to 7th July, 1916. The Commission will open proceedings at Auckland on Monday, 5th instant. I forward herewith, for your information, a copy of the order of reference. The Commission, having been appointed at the instance of the Railway Department, to investigate the allegations made by you during last session of Parliament, I have to request that you will, as you then intimated you were prepared to do, bring before the Commission the evidence from which you made the allegations referred to in the order of reference"—Yes, that letter was sent to me by Mr. Herries on the 1st February. [Letter put in. Exhibit H.]
12. The letter was sent to your office on the 1st February?—Yes, Mr. Herries says so, and I believe him.
13. It was not sent forward by your office?—No, on short trips my correspondence is not sent forward.
14. Then, it having been noticed by one of the departmental officers that you had left for Napier, inquiries were made to see whether you had received the letter, and when it was found that the letter had not been sent on, this telegram was sent by the Minister, which you received?—Yes, the one I put in.
15. Now, Mr. Wilford, your first question in the House was apparently . . . ?—I was not allowed to ask it.
16. Do you say that?—Yes. Mr. Herries asked me to put it on the Order Paper, and I never got leave to ask it.
17. Is this correct, as it appears in *Hansard*: "Mr. Wilford (Hutt) asked the Minister of Railways, without notice, Whether his attention had recently been called to the condition of the rolling-stock on the New Zealand railways," and so on?—Do you understand what it means "without notice?"
18. Yes?—Well, what does it mean?

19. I am not here to be cross-examined or waste time?—I think you are wasting time.

20. At all events, the question was asked the Minister in the House?—I asked Mr. Herries the question in the House, which he refused to answer.

21. The question was asked?—No, the question was not asked. I was told to put it in writing, and then it would be discussed.

22. I will take it in sections: "Mr. Wilford (Hutt) asked the Minister of Railways, without notice, whether his attention had recently been called to the condition of the rolling-stock on the New Zealand railways at the present time." Would you mind saying what it was that you had in mind in respect of the condition of the rolling-stock of the New Zealand railways?—Broken springs being put together causing danger to passengers, believing in my mind that a woman with, say, a child in her arms standing in a back carriage with broken springs might, when the train pulled up suddenly with the Westinghouse brakes, be very easily injured. I was considering the safety of the public in regard to the broken springs. That was at the back of my head.

23. That is the only matter you had in your mind?—Broken springs, that is all.

24. And then you proceeded, "And whether there was a shortage of the necessary equipment for renewals in the Stores Department"?—Yes.

25. Did you still have in mind those springs?—My answer is this: that if they had to put broken springs together I considered there must have been a shortage.

26. Then you further said, "And whether it was a fact that where broken springs had been found under carriages two springs were put into one, as there were not sufficient springs available"?—Yes.

27. You had in mind, then, that there were broken springs under the carriages, or, rather, that pieced springs were put in under the carriages which endangered the safety of the public?—I had in my mind that pieced springs were being put in the cars.

28. Under the carriages?—Somewhere to do with the cars. I do not know where they put them. I suppose that everything that is not over the platform is under the carriage. Am I wrong? I should like to know that. I work on the principle that everything that is not over the platform is under the carriage.

29. *The Chairman.*] Which platform?—Say, the level a man stands on when getting up the steps—when standing on the platform.

30. No; the platforms are varying heights?—If I am standing on the running-board of my own car I consider that anything under that is under the car.

31. *Mr. Myers.*] What you had in mind was that pieced springs were used under the carriages in such a way as to endanger the safety of the public?—No; you are not putting it quite clearly.

32. Will you put it your own way?—Yes, with the greatest of pleasure. I believed that broken springs were being used in connection with the running of carriages, and that there was a shortage of spares of those broken springs, that that is why they pieced two together, and I had in my mind that it was dangerous to the travelling public. I still think so.

33. What kind of springs did you have in mind at the time you put the question?—Before I answer that question let me get my position definite. We have a rule in law that if you call a man as a witness you cannot cross-examine him. I ask, Mr. Chairman, is Mr. Myers appearing for the Commission or for the Railway Department?

34. *The Chairman.*] Mr. Myers is appearing solely for the Railway Department?—Then Mr. Myers cross-examines me on behalf of the Railway Department. Springs was all I knew.

35. *Mr. Myers.*] May I take it, then, that at that time you did not have in mind any difference between bearing-springs and draw-bar springs?—No, springs was all I was told.

36. I think you said to-day frankly enough that you did not know the difference between draw-bar springs and bearing-springs until the Chairman told you the difference?—I cannot see why a draw-bar spring is not a bearing-spring. I may be dull and foolish, but I cannot see why a draw-bar spring is not a bearing-spring.

37. At all events, what you had in mind was springs?—Yes, springs.

38. The use of which endangered the safety of the public?—Yes, patched springs.

39. But you were quite unaware of the difference between draw-bar-springs and bearing-springs?—I had not thought of anything but springs, and let me add that Mr. Bargh and Mr. Kelly in their statements in D.—6, which I have read since I made my speech, say that they believed I referred to draw-bar springs.

40. They had some reason for that, of course?—No doubt.

41. But whatever they may have thought you had no distinction in your mind?—It did not bother me; I was talking about springs.

42. Now, you did not inquire apparently, or, rather, your informant did not give you any distinction between the two classes of springs?—He did not discuss any distinction, but whether he called them draw-bar springs or bearing-springs I do not know. If a man came to me and gave me information about draw-bar springs and bearing-springs and I did not know the difference I would call them springs. Then I am safe.

43. Well, we will see. You have referred in your question to springs under the carriages?—Yes; I always refer to everything under the platform as under the carriage.

44. May we take it that your informant told you that the springs had been used under the carriages?—No; I think those would be my own words.

45. Would it surprise you to know that, at all events, the evidence is that broken springs—and I am referring now to draw-bar springs—have never been used under the carriages at all?—What do you mean by under the carriages?

46. I am speaking of carriages as distinguished from wagons?—What do you mean by under carriage? We are two laymen discussing a thing we do not know anything about.

47. Speak for yourself. I know what I am talking about?—Yes, I know how it is done. We get a smattering of the thing as laymen, but you could not stand cross-examination by the Chairman.

48. Would you be surprised to know that no pieced springs have been used in the carriages at all?—Well, what are the carriages? Mr. Valentine in his report says that on short runs they have been used.

49. He has not said so in his evidence?—I did not know he had given evidence. I have not seen his evidence. I am only quoting from D.—6, and here is what Mr. Valentine says, “No cars or bogie wagons have been fitted with two pieces of spring or draw-bars, except a few cars on short-distance runs.”

50. You are referring to the statement in D.—6?—Yes, that is all I know.

51. You had not that information when you asked the question on the 7th July?—I do not know whether I had or not. This thing has died in my mind from July till I got that telegram, and I will tell you why it died. I refer you to *Hansard*, page 792. May I ask you to look at this, Mr. Chairman, because this is an important point. The matter, I said, so far as the importance of it was concerned died after the speeches were made. Mr. Herries says at page 792, “I think that is the only report that mentions any shortage.” That is Mr. Kydd’s report. He is quite wrong, because there are three others which I have mentioned to-day. “I think that is the only report that mentions any shortage,” says Mr. Herries, and then he proceeds, “So honourable members can see perfectly well that there is no cause to be alarmed. However, during the recess I will take the question into consideration and consult Cabinet as to whether it is advisable to get an outside expert to report. The General Manager, it will be seen from the report, would welcome any investigation.” Mr. Herries left the House, and left me till last Saturday week, on the understanding that if necessary he would consult Cabinet and get an expert to look into the matter; and until I got that wire on Saturday not one word did I receive whether I was to get a reply or not.

52. You say you asked for a report?—Yes.

53. You asked for a Commission, did you not?—Yes, when I did not get that report. I did not ask for a Commission even. I gave notice of motion for it, and the Minister prevented my moving it. On any day when the House is sitting the Minister in charge can at half past 2 say what motions are to be moved. He may select, say, No. 20, 26, or 42, and unless he gives leave the motion may stick on the Order Paper for the whole session and never be moved. Mr. Herries never allowed me to move that motion, and I cannot get leave to move it unless there is a clearance of the whole of the business ahead of it. However, I had no chance. That motion has never been moved. Mr. Herries gave his statement to the House, in which he said, “I will take the question into consideration and consult Cabinet as to whether it is advisable to get an outside expert to report.” That was the last of the matter.

54. I think that rather begs the question I am putting. The first question you put asked that a Commission be set up, did it not?—No; I was not allowed to put the question.

55. Well, I will read it. The first question you asked, without notice, asked that a Commission be set up, did it not?—Yes.

56. You subsequently placed upon the Order Paper a notice of motion?—Yes.

57. You say that notice of motion was not moved?—It was never allowed to be moved.

58. But in that notice of motion also you asked for the setting-up of a Commission, did you not?—Yes.

59. You asked, first . . .?—The motion is there. We do not want three-quarters of an hour over the word “all” as you had with Mr. Veitch—pages and pages over the word “all.”

60. I am the best judge of that. In the notice of motion you asked, first, for an up-to-date report with separate reports from the Inspectors of Rolling-stock?—Well, that came.

61. After that was done you asked that a Commission should be set up, is that not so?—No, I was not allowed to.

62. In the notice of motion which you did not move?—I was not allowed to.

63. Did not your notice of motion ask, firstly, for reports, and then for the setting-up of a Commission?—Yes. I was not allowed to move, and therefore it was not moved.

64. Now, you have said what you had in mind was the question of the safety of the public. You have told us that you know nothing about the distinction between draw-bar springs and bearing-springs. Would you be surprised to know that every witness who has been called has said that the draw-bar springs have nothing to do with the safety of the train or the travelling public?—I know nothing about such subjects. I am not going to express an opinion. I know as much about it as you do about the fourth dimension of space.

65. I can quite understand that from the way you have given your evidence?—Yes, and one can quite understand that you do not know by the way you are putting your questions.

66. You see these two springs on the table [produced]?—They do not look much like springs to me.

67. You see these two things which are supposed to represent springs?—Which you call springs.

68. Were I to ask you which one was a bearing-spring, could you say which was or not?—Which is? I do not know. I decline to commit myself. I am not going to be trapped. Which is which—tell us?

69. You have said in your statement to the Commission that all you said in Parliament has been proved?—Yes, up to the hilt.

70. Proved by the statements in D.—6?—Yes.

71. The report in D.-6 was the report which was being discussed on the 26th July, was it not?—I will have to look up the date. It was only being discussed by Mr. Herries.

72. The report speaks for itself?—Up to the time I saw that report no one had seen it except Mr. Herries.

73. He had read Mr. Hiley's report, had he not?—I presume he had from his remarks.

74. You will find it there in *Hansard*?—That is put in—it is not read. You do not read a paper when you put it on the table.

75. This is not the whole paper; it is a short report by Mr. Hiley embodying the substance of the other reports?—Yes, because Mr. Herries says at the beginning, "I beg, with the leave of the House, to lay on the table a report by the General Manager of Railways."

76. He says this is the General Manager's report?—Yes, but he did not read it.

77. Did he not read it?—No.

78. Well, he says, "This is the General Manager's report"?—I say he did not read D.-6.

79. The question is, did or did he not read the General Manager's report which is set out in *Hansard*?—You mean without the other reports?

80. Yes?—Surely, because otherwise it would not be there.

81. You knew, then, that reports had been made by different officers as you had asked?—Yes, but I did not know how many had made them or who had made them.

82. Did you not then say this: "Sir,—The papers proposed to be laid on the table by the Minister have come to the House through a question raised recently by myself, as is mentioned in the reply. I am not satisfied with the reply, and I propose to give my reason for being dissatisfied. The suggestion that the rolling-stock of the railways is not in the best of order, or the inquiry whether the rolling-stock is in order, is interpreted as a reflection on the Engineer who has charge of the rolling-stock of the railways. What happens? As soon as a member of Parliament makes such a suggestion it is referred to the officer concerned, who immediately sets about preparing a defence. How does he go to work? He first of all brings his mind to bear on the men who are under him, and who are alike responsible with himself for the condition of things, and he says to them, directly or indirectly, 'All you gentlemen are on your trial as much as I am. You have to answer this query, just as I have to answer it. I expect you to report to me immediately, so that I may embody in my reply to Parliament all your subsidiary reports as a defence of myself and, *inter alia*, of yourselves' "?—I believe that is the procedure in every Department.

83. Then, you were not satisfied with the reports that were made?—Because I had not read them. I had only heard Mr. Hiley's. If I had had an opportunity of reading Mr. Bargh's, Mr. Kydd's, Mr. Valentine's, and the others I would at once have got up and said, "Here are my words proved." That is what I am saying, and that is what I am going to say when I go back.

84. You would have said that?—Yes, of course, I would.

85. Then you further say, according to *Hansard*, "Then we have produced to Parliament the report of the officer who is responsible, together with the reports of the subsidiary officers whom he holds responsible, and we are asked to accept that as an answer to the query"?—Yes.

86. That is your view of what happens when an inquiry is made into any departmental matter?—I have not heard in my sixteen years in Parliament an under-officer indict a higher officer.

87. I tell you that the whole of the evidence so far goes to show that the pieced draw-bar springs have nothing whatever to do either with the safety of the vehicle or the travelling public, and the whole of your question and the whole of the complaint has reference to these pieced draw-bar springs?—Springs. I am not going to get away from that. You can keep on for a week.

88. Well, if it be shown that pieced bearing-springs have never been used, and that the only springs that have been used are draw-bar springs, then your complaint must refer to these draw-bar springs?—It strikes me that you are taking up the position that if I said a man had a pair of grey trousers on and he said he had a white coat on you would consider he had answered me. It is quite a different thing.

89. Are you calling any witnesses?—No; I want to put in D.-6.

90. You said in Parliament the following: "Now, I have had it stated to me by a man who was himself concerned with that rolling-stock that he declined to carry the burden of responsibility on his shoulders, and that he made his representation to me for that reason, and asked me to pass it along." That is so?—Yes.

91. Would you mind saying how long you had had this responsibility transferred to you before you asked the question in the House?—The trouble is this: if I told you you may be able to trace the man who gave the information to me, because he may have been off duty on that particular date, but my recollection is—although I am not sure—that I walked straight to Mr. Herries and told him what I had been told. That is my recollection.

92. The Department had no reports of this kind, and has never received any such report?—I understand so.

93. And, of course, you understand it is the duty of any officer in the first place if there is anything wrong to report it so that it can be attended to?—Yes, I think you are right there; and I agree with Mr. McVilly, who told me over the telephone that if an officer of the Department knew of these things and reported them to me and not to the Department he should be booted out of the Department. I think that is right, but I do not think it struck the other members at the time. I think an officer of the Department who has the power of putting a thing right by stating it to the Department has no right to tell it to me.

94. Is that a conversation you had with Mr. McVilly?—Yes. He said that a man who has the opportunity of making a report to the Department but who instead makes it to me should be booted out of the Department. That is a straight statement, but I think it is right now.

95. You think the man committed a dereliction of duty?—Yes.

96. You also said in the House, "One of the gentlemen who made representations to me. . . ." Was there more than one?—There was a discussion with three or four railway men on the subject in the street when I asked them a question.

97. Your speech continues, "But one of the gentlemen who made representations to me on the point has been known to me for twenty-seven years. He has held good positions in this country, though in the Railway Department, and, as he said to me, 'Mr. Wilford, even if I have to go before a Committee of Parliament and give my evidence I am prepared to do so. You can call on me if you want to; and if you get an answer from the Minister stating that no such thing exists I will come to your aid, because I have only a few more years to go as far as my superannuation is concerned, and I am prepared to take any risk there is.' He told me seriously and quietly that he would be ready to come forward and prove his statement. That is why I brought the matter up"—Yes, that is true.

98. And you are not calling him?—No.

99. Have you asked him whether he would attend?—I sent a friend of mine unknown to him last week who jumped into a train and chatted the thing over with him without the man knowing it was coming from me, because I expected he would come to me and say, "I will see the thing through." That is what I would have done. The friend I sent said, "I suppose Mr. Wilford will produce the man who made the statement to him," and the man said, "I hope he won't." I have arrived at my decision in the matter.

100. You told the House when you made your statement, and which I repeat, that this man told you that he declined to carry the burden of responsibility on his shoulders, and that he made his representations to you for that reason, and asked you to pass it along?—Yes.

101. He also said that he was near his superannuation time, and that if the Minister denied what he said he could come to your aid and give evidence and not be in the least afraid?—Yes, that is so. I have never been more surprised in a man.

102. You have not seen him personally as to whether or not he will attend?—No, I would not go near him.

103. The only statement you have had from him is that he would attend?—Yes.

104. Who is he?—I decline to say, and the reason I decline to say is this: I have had to decide between two courses here, whether I will tell the name of the man who told me, and thus get him booted out of the Department, as Mr. McVilly calls it, or refuse to disclose his name and take the consequences. I have thought the matter over, and have decided to take the consequences of refusing to give his name. I trust that he will at least appreciate what I am doing. I know his family well, and thought I knew him thoroughly. I am prepared to take the consequences of not answering, and I will not answer.

105. Although you have not yourself gone to him and asked him whether he will attend or not?—No. I expected he would at least have tendered himself to me.

106. I am instructed by the General Manager of Railways to say that there will be no victimization consequent upon any evidence which any railway servant comes forward and gives?—That is no use to me, because the man who told me the story has, I believe, already given evidence, and to save his own skin has told a different yarn. Therefore he cannot come forward.

107. Therefore you are making a serious charge against that man. You have stated that that man first of all made a statement to you, and you gave it in the House. You now say he has come forward and given his evidence quite differently, so that either he was misleading you or he was misleading the Commission?—I stated it unfortunately perhaps. By stating it differently I will say he has proved his words to me partially, but has not gone to the lengths that he went with me.

108. You see that either he was misleading you or misleading the Commission?—I will never believe he was misleading me—not even now.

109. So far as misleading the Commissioners are concerned, the Commissioners are themselves making a personal and thorough examination of the whole of the rolling-stock from north to south?—I am very glad to hear it.

110. You have made a somewhat serious charge against this man?—I do not think so.

111. I think you have?—I certainly did not desire to.

112. Do you still say you will not call him or give his name?—Yes. You have your remedy under the Act.

113. Of making you a martyr?—No.

114. We do not propose to do that, or shed limelight on you?—That is rude. I could very easily reply to you and say something which would make you squirm, but I have held it back. It is very cheap.

115. Well, that is the position, you as a public man make a statement in the House—an alarming statement?—A very reasonable statement, and since proved to be true.

116. You may say that to try and show you are right, but it is absolutely wrong?—That is your opinion.

117. In the first place, you do not even know what springs you were talking about. You as a public man get up in the House and make a misleading statement which has reference to the rolling-stock and to the safety of the travelling public?—Yes, but about the springs only.

118. You make it upon a statement which you say was made to you by a man in the Department who tells you that he is quite prepared to come forward and substantiate his statement?—Yes.

119. And you have not even communicated with him to ascertain whether or not he will substantiate his statement, and you decline to give his name?—I told you I had communicated with him.

120. Personally, I mean?—No, not personally.

121. Did you get the information in Wellington?—Yes, in my office. He came to my office and sat down and told me the whole story, and I went right up to the House, and was as worried as he was.

122. Did he come to consult you about other business?—No, no business at all. He has been a friend of mine for very many years. How he came to be in my office was that he came to see somebody else in my office, and when there he asked if I was in, and then he came to my office and told me.

123. Had he not had a few drinks when he came to your office?—I have never known him to drink.

124. Perhaps you have not seen him of late years?—I have not seen him of late years, but you surprise me with that suggestion. I never knew of him drinking. I think you are slandering him.

125. I am not slandering him?—I think the suggestion of it slanders him.

126. He must be a beautiful gentleman if he goes and makes an alarming statement like this and then refuses to go into the box?—In regard to what I said, he has proved part of my story.

127. Will you say what district he comes from?—No.

128. He is a First Division man, is he not?—I decline to say.

129. Did you only see him on one occasion at your office?—Yes.

130. You did not get a statement from him in writing?—He was the last man I would have asked for such a thing. I have had the greatest surprise in my life that he has not come forward, and some of my friends who know the man have also had a surprise. It has been one of the greatest surprises of my life. I would not have left him in this way. I say that frankly.

131. You thought it good enough on the statement made by this man, not in writing, to get up and practically challenge the Railway Department, and eventually say—it is my paraphrase—that the reports of all these officers were not to be trusted as against the word of the man who had spoken to you?—Oh, no. If you told me a story in my office of what you thought ought to be done in regard to governmental matters I would not think of asking you to put it in writing any more than this man. I cannot understand this man now. Some day when the Commission is wiped out I will get at the bottom of it.

132. You say you think he has given evidence: do you happen to know?—No; but I know he is in D.-6, so that will give you an indication of the man.

133. We have only taken evidence so far in Auckland and Wanganui, and you think he has given evidence?—D.-6 is in, and he is in that.

134. Do you not see that you are much more likely to do this man more harm by not giving the name than in giving it?—I have taken a week to think it over, together with three of my friends, two of whom are parliamentarians, and I have not decided till to-day. I have never had a harder job to decide, and I have given my decision and will never change.

135. I suppose you will admit this: that a man who first of all makes a statement of this sort to you that the condition of the rolling-stock is so serious as a matter of public safety that he cannot take the responsibility?—He meant what he said.

136. And makes no report to the Department, but goes to a parliamentarian and makes this statement?—To an old friend.

137. And then tells you he will go before a Commission and give evidence to that effect, and then comes before the Commission and gives different evidence?—I do not know that. I have not seen the evidence.

138. I will show you his evidence in a minute—you will admit is not a fit and proper man to be in the Railway Department?—That is for the Department. I say frankly that man ought never to have said a single thing to me about the rolling-stock of the New Zealand railways if he did not back it up with a report to his superior officers on the subject.

139. I will point out that we can trace this man, because we know the statement was given to you in your office on or about a certain date. We have other information on the point which I need not give you. If we find that this man has given you a statement which is untrue, that he has never made a report of anything of the kind to his officers, and that he goes back on the statement which he made to you and gives quite different evidence, you see he is a man that the Department is unable to rely upon?—Yes; but what he told me and what I told the House has been proved.

140. Oh, no. If you say that that is so, why not give his name?—Cannot you see the reason?

141. Why?—Well, I cannot tell you.

142. If you say that what this man told you and what you told the House is proved by the evidence, what harm is there in giving his name? I have told you that even if the name is given so that he may be called before the Commissioners again if he has given evidence there will be no victimization, but if we find he has given evidence and that the evidence is not the same the Department will have to take action?—What he told me about the springs and about their being dangerous to the travelling public has been proved by the witnesses whose names I have mentioned in the statement.

143. You may take it for present purposes, at all events, that the draw-bar springs are not part of the running-gear to begin with, and they have nothing whatever to do with the safety of the vehicle or the travelling public?—I cannot discuss that.

144. I am telling you that is so, and that this man who made the statement to you, if he knows anything about rolling-stock, knows that to be true?—I cannot discuss that.

145. Well, he has said to you, or you told the House he said to you, that the condition of the rolling-stock was such, and he was concerned with it, that he declined to carry the burden of responsibility on his own shoulders. That is a statement that is not at least justified by the use of pieced draw-bar springs. If you say you are right and that your case has been proved, why

not give the name of the man so that he may be examined again if he has already been examined?—You have got my reason.

146. And you will not go any further than that?—No.

147. Well, I am going to ask you this: You know now the kind of man you were dealing with. I ask you whether you would accept the statement of such a man as against the Chief Mechanical Engineer, the Locomotive Engineers, and other Locomotive officers other than your informant himself?—Well, my answer would be this: that I think he told me the truth that pieces of draw-bar springs were being put together instead of the use of one spring, and that that was a danger to the public.

148. Do you know that your informant has told the Commission that it is quite a proper practice, that it in no way affects the safety of the train or the public, and that he would do it himself at any time?—I do not know any such thing.

149. It would surprise you if he did say such a thing on oath?—I do not know what to think, because when a layman who knows nothing of these technical matters is told by a man he has known for many years that there is really trouble, and that when he as a public man tries to put the matter right, and then the man who told him says there is nothing in what he said, I do not know what to think—I honestly do not.

150. You say in your speech that you saw the Minister about it?—Well, the Minister was sitting in his place in the House, and when I went over to him I said that I had had a statement made to me.

151. Let me read Mr. Herries's note and see if it explains the position. "Mr. Wilford in subsequent conversation——" ?—No, it was before; he is wrong. I remember distinctly.

152. "Mr. Wilford, in subsequent conversation with me, alluded specially to the under-carriages" ?—No, not under-carriages. The only things I spoke about were springs.

153. "He has got his information from some of the staff, and said he would be prepared to sustain the charge and bring up witnesses if an inquiry was made" ?—It is substantially correct. I did not say I would bring witnesses—it was a witness; and I did not say the under-carriages, because I know nothing about that. All I said was "springs," and he is also wrong in his statement that it was made after a question, because as if it were yesterday I remember walking to Mr. Herries's seat and telling him about it, and going back to the House and asking the question without notice, because I got no satisfaction. But may I be allowed to say this: I never said I would bring this witness before a Commission. Do not forget that. It was a Committee of Parliament. A Commission is not a Committee of Parliament; and even the *New Zealand Times* which you quote says that Mr. Wilford said he would bring the witness to the bar of the House. In *Hansard* it says I will bring the witness before a Committee of Parliament. I never said I would bring a witness before a Commission.

154. What difference does it make?—Well, you are particular about words, and I am particular about my answer. You adopt infinitives, I will do the same.

155. You do not suggest that he is not being called because this is a Commission and not a parliamentary Committee?—No.

156. I wish to draw your attention to the *Dominion* of the 11th July, which reads, "He suggested that the under-gear of carriages and wagons was wearing out" ?—That is nonsense. I guarantee no other papers say that.

157. Of course, *Hansard* report of a speech is not *ipsissima verba*?—No. In the heat of debate a man says things he does not intend to do, and when he is cooled down and gets the report of his speech he trims it down a bit.

158. And sometimes it is not the same speech?—That is not so. If I said the Department was badly administered I would not be able to alter that and say it was well administered. You may make a grammatical alteration, but you cannot alter the speech. That is what the Supervisor is there for.

159. This is how the *Post* reported you in the House: "In the course of the discussion that followed, Mr. T. M. Wilford criticized the method of obtaining these reports. To his mind, it was a farce if the answer of the departmental officer concerned was to be accepted as the last word. It was not likely that an officer was going to plead guilty to a charge of carelessness or inefficiency" ?—Or murder, you might add.

160. That might have been what you said?—No, I do not think so, because it would have gone into my *Hansard* proof, and I do not think I would have been able to strike that out.

161. You see a statement of that kind, leaving out the question whether you said it or not——?—I never made a more temperate speech in my life than I made at that time. I was held in check all the time I made it under responsibility and worry.

162. After all the inquiry it turns out you need not have worried at all?—I hope not. Nobody wants to see anything like that. I have been sixteen years now helping the Railway Department in all sorts of ways.

163. I wish to put these words to you: "It was not likely that an officer was going to plead guilty to a charge of carelessness and inefficiency," without discussing whether those were the actual words or not. You see the people read the newspapers and not *Hansard*?—I do not think they read much of them, otherwise I would have never been in Parliament.

164. That is a confession?—That is a fact. It is true. I have not been beaten since 1896. You try the public and see how you get on.

165. The Commission is not concerned with your parliamentary career?—My parliamentary career has been most interesting. I have been tried once before over the Royd-Garlick matter, and I came out with flying colours, and I hope to do so here.

166. You can live in hopes, that is all?—Very well.

167. I do not care whether these are your actual words or not, but I put these words: "It was not likely that an officer was going to plead guilty to a charge of carelessness and inefficiency." They convey the suggestion that such charges were made?—Supposing Constable Fitzgerald were asked after the recent assault case whether he had done any harm to Mrs. Henderson—asked by the Superintendent, and he said No, that would have hardly been satisfactory as it turned out, would it?

168. That is not answering my question. Those words do convey to the public the imputation that those charges were made against the officers of the Department?—The French have a good proverb, "He who excuses himself accuses himself."

169. I will put the question once more. Do not those words suggest that charges of carelessness and inefficiency were made against the officers of the Department?—I reply, *Honi soit qui mal y pense*.

170. Now, take the *Times* of the same date?—There was such a difference that you cannot get at what I said.

171. The *Times* says, "They could not expect an officer to plead guilty to inefficiency, callousness, want of thought, or neglect of the public interest?—They have added to it."

172. I suggest to you that words of that kind rather indicate to the public that charges of inefficiency, callousness, want of thought, or neglect of the public interests were meant as against the Railway Department?—That may have been a reply to a member across the chamber, and those are parts of a speech that the papers are so interested in. I would say to the Commission that the difference in the three reports is so marked that no jury could say which is the correct one.

173. The *Hansard* report says, "You cannot expect that any departmental officer who considers a question is being asked about his Department is going to plead guilty to even want of thought or want of consideration for public concerns"?—I still believe that.

174. They may or may not be your exact words in Parliament?—I believe they are. I think so because that is my honest opinion.

175. Well, I suppose you yourself suggested that Mr. Marchbanks should be asked by the Government to make a report?—Yes; but I wanted a report then, not nine months afterwards.

176. What do you suggest by that?—That if Mr. Marchbanks could have been asked immediately then to go round and see how many broken springs were on the vehicles—I am afraid to say bogie carriages, wagons, or cars—but how many were broken, and then report whether it was a dangerous thing or not, then the whole thing would have been cleared up.

177. You asked that Mr. Marchbanks should be asked to make the report?—Yes. I asked for Mr. Marchbanks because I was for ten years on the Wellington Harbour Board and knew his capacity, and I asked that he should go round.

178. You are absolutely quite satisfied with a Commission of three?—Yes, absolutely. I do not raise any question as to the inefficiency of any man in connection with the whole service, but if a man was asked as to his own efficiency he would say his work was excellent.

179. But the Commission can ascertain whether that is correct?—Yes, and that is worth all the evidence. Let the Commissioners make their personal examination.

180. But evidence would have been very important from this gentleman whom you say gave you the statement?—Yes, but I do not think it is of any value. I do not think the Commission is going to have the result of finding out anything at all, but I believe they will make valuable suggestions from what they see but not from what they hear.

181. You do not know whether this man who gave you the information in July last year was on leave?—I do not adopt your dates.

182. You said you went up hot-foot to Mr. Herries to tell him?—I said nothing of the sort. I said I did not want to fix the date, but I believed it was soon after.

183. If you went to see him you do not know whether the man would even admit giving you any information?—No. What do I know about broken springs on railways?

184. But the point I am making is this, which you do not seem to understand: that he may have made a statement to you which, without intending to do so, you perhaps exaggerated?—No, I toned it down.

185. When you spoke of this man declining to carry the burden of responsibility, I suggest that was a figure of speech?—No, it was not. He was very worried. I can see him now sitting down talking to me, and he was in dead earnest, and I knew him well. If a man in the street had told me that I would have said, "Yes, hard luck," and done no more about it. Mr. Chairman, may I have the report of the interview that occurred between Mr. McVilly and the Amalgamated Society of Railway Servants on the question of broken springs? I would like it brought here because I want to complete my evidence. It occurred on the 14th July, 1915, and I should also like the reply of Mr. Hiley.

186. We can have them by 2.30 p.m.?—Yes, very well, that will do.

187. *The Chairman.*] Mr. Wilford, you disclaim any technical knowledge on the subject of springs?—Yes, I do really.

188. And you do not propose to call this witness to whom you alluded?—No, sir.

189. Have you asked him whether he would appear?—No, sir. I have sent a friend of mine to him to meet him in a railway-carriage and discuss this case with him. I got him to find out this man's mind, and he, the man, said he hoped I would not give the name away. I have got that man if it is desired to follow the matter up further to prove that my informant hoped I would not give his name away.

190. Do you not think it would be desirable to make a direct request for the man to appear?—I have thought it out and discussed it with my friends. I know the man and the whole of his family, and I know what is going to be the end of it if he does attend. No, I cannot make the request to him.

191. *Mr. Myers.*] You mean you cannot communicate with the man himself?—I cannot call him.

192. *The Chairman.*] My suggestion was that you could communicate with him and ascertain what his mind was on the subject?—I am not satisfied it could be done except through a third person without it being found out.

193. I think the Commission has no questions to ask you?—Thank you.

194. *Mr. Myers.*] Mr. Wilford is at perfect liberty to cross-examine any of the witnesses called?—I thank you for the opportunity, but I am presuming that every man who is called will say that everything is all right.

195. You are assuming that the men will tell the truth?—Yes.

ERNEST EDWIN GILLON sworn and examined. (No. 26.)

1. *Mr. Myers.*] What is your official position?—Locomotive Engineer in the Chief Mechanical Engineer's Office.

2. What are your duties at the present time?—I relieve all the Locomotive Engineers in turn, and inspect the Gisborne, Nelson, and Picton Sections periodically.

3. There is no resident Engineer there?—No.

4. You go from district to district relieving the Locomotive Engineer in the various districts?—Yes.

5. How long have you been performing those duties?—About two years and a half as Locomotive Engineer in the present position.

6. And before that did you have a district to yourself?—I had the West Coast district for seven years.

7. And how long have you been in the Railway service?—About thirty-two years and a half.

8. How many times during the last two years and a half have you been acting as *locum tenens* in each or any district?—Three times for the South Island main line, twice at Petone, and once at Newmarket.

9. During the last two years and a half we may take it that you have seen most of the rolling-stock of the whole of New Zealand?—A very good proportion of it, yes.

10. And you are in a position to give some evidence, are you, as to the condition of, say, two years and a half ago, or even before that, and the present condition?—Yes.

11. Well, would you mind giving your statement in your own words?—The condition of the rolling-stock at the present time, I think, is better than it was, say, three years ago. The condition is steadily improving by standardization of the rolling-stock, and I honestly think it is better now through being brought thoroughly up to date. Everything that it is possible to do to put it in a good state of repair is being done.

12. You say there have been improvements: can you indicate any special improvement during the last three years?—The completion of the installation of steel axles—that has been completed in the last three years; fitting standard axles and horn-plates; and the overhauling of the Westinghouse brake is far better than is used to be. Then there is the adoption of the steel underframes, and the new cars have steel lining for floors. All those things are going to improve the rolling-stock.

13. You know it has been said there has been a deterioration in the rolling-stock during the last three years?—That is not correct.

14. You say the contrary is the case?—Yes.

15. Well, the complaints that were made were made last July, and the Commission was not set up till some months afterwards. Can you tell the Commission whether there has since July last been anything in the way of increasing repairs or speeding up repairs?—No, nothing like that at all. They have just gone along in the usual way—no speeding up at all.

16. You are attached to the Head Office?—Yes.

17. Are you aware of any instruction coming from the Head Office or otherwise that repairs were to be speeded up?—There is no such instruction. Repairs have not been speeded up.

18. And have new cars been under construction all the time?—Yes, rolling-stock of all descriptions.

19. You are in a position, I believe, to give some evidence as to the inspection of the various districts, whether from the Head Office or from any other office?—Well, in what manner? I do not quite follow you.

20. Of course, we know there is an inspection in each district by the Car and Wagon Inspector periodically?—Yes.

21. What other inspection is there?—We have an inspection by the Chief Mechanical Engineer.

22. And what about the Locomotive Engineer?—Once a month he goes round his district and covers the whole of it, and he is supposed to inspect anything belonging to his branch.

23. Supposing there is anything wrong with the stock in any way affecting the safety of the public, whose duty is it to report it in the first place?—The Car and Wagon Inspector is the man responsible to the Locomotive Engineer, who reports to the Chief Mechanical Engineer; but if there was anything dangerous the train-examiner would stop the vehicle.

24. But my question had reference to the whole of the rolling-stock, and not to a particular vehicle?—The whole matter is referred to the Locomotive Engineer, and by him to the Chief Mechanical Engineer. The Chief Mechanical Engineer pays a visit at times to the various districts.

25. The present Chief Mechanical Engineer has been in office how long?—Three or four years.

26. Without any comparison between the two men, how does the frequency of his inspectorial visits compare with the visits of his predecessors?—We see him four times more often as compared with the previous Engineers. We see him far more frequently.

27. Has that been made possible by the office, or how?—The present Chief Mechanical Engineer has an assistant who remains there when he is away. He was appointed for the express purpose of enabling the Chief Mechanical Engineer to get about more and inspect.

28. Can you say anything as to the keenness or otherwise of the inspection from Head Office?—Well, the inspection from Head Office by Mr. Jackson is carried out in a very keen manner. Very little escapes him, and at the same time his keenness is imparted to the other officers of the Department. The officers in the Department now are very keen to see that there is nothing wrong as far as they are concerned when they are going round the district.

29. How does that act upon the men generally?—It has a very good effect both in the workshops and outside.

30. Do you know if any report has ever been received by any Locomotive Engineer or the Head Office to the effect that there was some one in the service connected with the Locomotive Department who was so concerned about the condition of the rolling-stock that he could not carry the burden of responsibility?—There is no such report, and while I have been going round the Dominion it has never been mentioned to me.

31. Have you ever seen anything that would justify any such report or statement?—No, I never have.

32. Do you come across many broken axles?—I have only seen broken axles in the workshops, but have never been on the line when one has been broken.

33. Do you see many of them about the workshops?—No, very few.

34. Any broken tires?—Well, I have never seen a broken tire come into the shops while I have been there.

35. You are speaking of the last two years and a half?—No, over the whole of my experience in the Railways I have never seen a broken tire brought into the workshops. I have seen broken tires in there which have been broken in taking them off.

36. The painting of the vehicles has been mentioned. Some witness has said that the cars are not painted as they should be, that the maintenance is not kept up so far as the painting is concerned?—The painting is carried out as usual and kept up to date. Of course, the style of the painting is decided by the Head Office—that is a question of policy.

37. Is it as frequent as it used to be?—Quite as frequent; in fact, I think the cars are painted more frequently than they used to be.

38. You heard what Mr. Wilford said this morning, and you know what has been said about draw-bar springs?—Yes.

39. Have the draw-bar springs anything at all to do with the safety of the train or the people on the train?—Nothing whatever with the safety.

40. Of course, the bearing-springs have?—Yes, the bearing-springs certainly have.

41. Have you ever known in the whole history of the Department of a pieced bearing-spring being put into either a carriage or a wagon?—No, I never have, and I do not think any officer would allow it.

42. But as to pieced draw-bar springs, is there any objection to their being used?—None whatever. I used them myself in 1899.

43. Then is it a practice which has been in use from time to time since?—Yes, from time to time.

44. What is the greatest number of pieces you have ever used?—Never more than two.

45. As to efficiency, how does a properly pieced draw-bar spring compare with a new and complete draw-bar spring?—There is very little difference in the efficiency.

46. Is there any appreciable difference?—No.

47. You say that the draw-bar spring has absolutely no connection whatever with the safety of the train or of the passengers?—No, with the comfort it has, but not with the safety.

48. But with regard to comfort, you are speaking of the people in the carriages?—Yes.

49. Have you ever known pieced draw-bar springs put in carriages?—No, never known them used there.

50. What classes of vehicles are they used on?—On ordinary L wagons.

51. Would you see any objection to even the whole of the wagons in New Zealand having pieced draw-bar springs so long as the pieces were put properly together?—No objection so long as they are properly put together.

52. Take, for instance, those two pieces you see on the table here?—There would be no objection to using those so long as they are properly put together.

53. It has been said that the period for lifting L wagons has been increased from two years to three years?—Yes that is so.

54. Is that a real extension or merely an apparent extension?—Only an apparent extension, because as a rule it was about three years before you got your wagon through the shop before, and the instruction now has been altered to three years, which is quite sufficient. It is only an apparent extension.

55. You say it does not mean any difference in actual practice?—Yes.

56. Then Mr. Veitch, I think, told us in Wanganui that he objected to liners being used in the axle-boxes if there was a slight cant?—Yes. I can go back again and say I used liners in 1899 myself, and saw them used before that.

57. I suppose the liner is a piece of steel?—Yes, a piece of steel bent over the top to prevent it falling through.

58. Is that a practice which has been generally in use as long as you can remember?—Yes, in use all over the Dominion.

59. And can you say whether it has been in use in other railways elsewhere?—Yes, I have seen it, I think, in the South African railways. I was looking through a magazine and came across a description of it. It is quite a common practice, and there is nothing objectionable in it.

60. In regard to pieced draw-bar springs, do they affect the wear-and-tear of the undergear at all?—No, I made a trial of that in about 1902 when at Whangarei. I ran a pieced draw-bar spring for a year to see if it made any effect on the draw-bar, but it had no effect at all.

61. On what kind of vehicle did you make your test?—On an L wagon.

62. Did that pieced draw-bar spring remain for a year?—Yes, I left it in, and it may be there now for all I know.

63. And it remained without any further break?—Yes, without any break, and it had no effect on the draw-bar.

64. *The Chairman.*] I understood you to say that the condition of the draw-bar springs had no bearing whatever on the safety of a train. Do you desire to qualify that statement?—What I meant to say was that as far as the train is concerned a broken draw-bar spring would not be unsafe in a train.

65. One broken draw-bar spring?—But if the whole of the draw-bar springs were broken it may possibly have an effect on it.

66. *Mr. Marchbanks.*] How long has the replacement of the steel axles been going on—since when?—To my knowledge, about fifteen years it has been going on. I may be wrong, but it is somewhere about that time.

67. Have you been concerned in connection with any inquiries into derailments?—Yes.

68. Have there been many in the district you have been in charge of?—No, not many.

69. Did you find any due to defective equipment?—No; I have never yet found any derailment due to defective equipment. You can generally trace something else to be the cause of the trouble.

70. Have you found any broken axles?—No, never.

71. Have you found any broken bearing-springs?—I have only seen one broken bearing coil-spring.

72. How did the derailments occur?—Through shunting.

73. But I was referring to running trains?—No, I have never had any derailments with running trains.

74. In connection with pieced springs, have you examined many wagons in which pieced draw-bar springs have been placed after they have been put in service?—From time to time I have examined some.

75. Have you ever found any breakages?—No, I have not.

76. What percentage of broken draw-bar springs would you expect to find in wagons?—It all depends on the shunters at work, and it also depends what yards they are in. Some districts show a heavier percentage than others.

77. Have you noticed any brasses become displaced in the boxes?—Yes.

78. Would not that be apt to cause derailment?—The brasses have become displaced through the derailment, but not on the main line—through shunting.

79. You have never known the brasses become displaced on any vehicle on a running train?—No.

80. One type of bearing-springs rests on the boxes, and the other is carried on a casting?—Yes.

81. Have you formed any opinion as to what give the best results?—I prefer the one on the small casting.

82. Does not that tend to cant the box more?—No. I have watched both, and I never came to the conclusion that it canted the box.

83. *Mr. Maxwell.*] This is a copy of the New Zealand Rules and Regulations, New Zealand Railways, Order in Council, 1907?—Yes.

84. You have one of these books, I suppose [produced]?—Yes, and I am acquainted with it.

85. Do the Workshop Managers generally have a supply of them?—Yes, and all the Foremen as well; also the lifters and all officers have them.

86. Does the wagon-lifter come under the category?—No; I cannot say if the lifters are supplied with them.

87. Do the train-examiners have them?—Yes. If a man is sent out on the line he would get a copy, but a lifter in a workshop is not connected with train-running, and there is an instruction at the beginning of the book which says that all men connected with train-running are to have copies.

88. I wish to know whether the train-examiners have them, and whether the train-lifters who are on the line have them?—Any man connected with train-running would be supplied with a copy.

89. A train-lifter on the line at intermediate stations?—He would also be an acting train-examiner and would be supplied with a copy of this book. If a lifter examines a train, then he is classed as an acting train-examiner.

GEORGE ARTHUR PEARSON sworn and examined. (No. 27.)

1. *Mr. Myers.*] What is your official position in the Railway Department?—Assistant Chief Mechanical Engineer in the New Zealand Railways.

2. You have been in the Railway Department quite a considerable time?—Yes, nearly twenty-nine years.

3. How long have you been Assistant Chief Mechanical Engineer?—Since 7th July, 1915.
4. Was that the date of Mr. Jackson's appointment as Chief?—No, afterwards.
5. What had you been before you became Assistant Chief Mechanical Engineer?—Before 1905 I was Chief Draughtsman in the Locomotive Department, and in 1905 I was appointed Locomotive Engineer for the Wellington District, as far as Taumarunui. In 1913 I took charge of the South Island Main Trunk line and branches until July, 1915, when I returned to Wellington.
6. Since you returned to Wellington has your work been mostly in the office?—Yes.
7. So that you do not see so much of the rolling-stock as you did before 1915?—No, not quite. I have been about a little, but not so much as before when I was Locomotive Engineer.
8. What has been the effect of your appointment as Assistant upon the periodical visits of the Chief Mechanical Engineer throughout New Zealand?—It has allowed him much more freedom as regards the office-work, and he has been able to get round the different districts much more often than he could previously.
9. Was that the object of your appointment?—Yes, that was one of the objects of the appointment.
10. So that since you were appointed Assistant the visits of the Chief Mechanical Engineer around the different districts have been more frequent?—Yes.
11. Do you know of any justification for any statement being made that the condition of the rolling-stock has deteriorated?—No, there is no justification for it.
12. What do you say about the condition of the rolling-stock?—I think personally the rolling-stock is in better condition than ever it has been before. We are standardizing, increasing the wearing-points, I may say, making larger arcs, increasing the width, particularly of the horn-plates, from 1 in. to $2\frac{1}{2}$ in., and the wagons and stock generally are being standardized. We have introduced heavier draw-bar springs and various other improvements.
13. You are not confining your observations to the last three years?—No, not altogether to the last three years.
14. Is it correct to say that the improvements of which you speak have been going on for some time?—Yes.
15. Though some of them may have been commenced before, they have been going on during the last three years?—Yes.
16. I think you are in a position to give some figures about the percentage of wagons that went through the shops. We will take, first, those that went through prior to the 31st March, 1913, and since?—Yes. Well, for the three years ending 31st March, 1913, 104 per cent. of the wagons passed through the shops per annum.
17. That does not mean they were lifted, does it?—That means everything they might go to the shops for, and includes painting.
18. Does that mean that every car has been through the workshops?—It does not follow that every vehicle went through. A wagon may have gone through three or four times, or half a dozen times, and another may not have gone through at all. That is taking the number of wagons that actually pass through the shops.
19. *The Chairman.* I think the matter is not quite clear. What I would like to know is if in one year this number passed through, or is it a period of three years?—Three years.
20. So that in one year the percentage passing through would be one-third of that number?—Practically.
21. *Mr. Myers.* You rather misled me—I understood that was per annum?—No, that is in a period of three years.
22. So that it is really $34\frac{2}{3}$ per cent. per annum of the whole of the wagons?—Yes, that is correct.
23. Now, since then what has been the percentage?—33 per cent. per annum.
24. From the 1st April, 1913, to the 31st March, 1916, the total percentage was, I think, 99 per cent.?—Yes; that is to say, 33 per cent. per annum.
25. That is slightly less than the percentage during previous years. Is there any reason for that?—Yes, because during those years 4,701 new wagons were added to the stock.
26. And you would not expect them to be coming in so often?—No.
27. Now, will you give us the corresponding figures for carriages?—For cars for the three years ending 31st March, 1913, the total was 167 per cent., making practically 56 per cent. per annum.
28. And since then, up to the 31st March, 1916?—It was 159 per cent.
29. There is a reduction there again?—Yes, and that is accounted for by the fact that 312 new carriages were added to the stock.
30. And what percentage is that 312 to the stock existing before?—About 21 per cent. The total for the three years ending 31st March, 1913, was 157 per cent. That is $52\frac{1}{3}$ per cent. per annum, and for the three years ending 1916 176 per cent.
31. That shows an increase?—Yes; and in the meantime seventy-two new trucks were added.
32. And what is that percentage of the total additions to the stock as existing before they were added?—About 17 per cent.
33. So that if the new vehicles be taken into consideration the percentage of repairs is about the same?—Yes, fully maintained.
34. That is during the year ending 31st March, 1916, as during previous years?—Yes, the percentage is fully maintained.
35. While we are on this subject would you give me the cost of repairs per train-mile for the three years ending 31st March, 1913, and then for the three years ending 31st March, 1916?—For the three years ending 31st March, 1913, the cost of repairs was 5·77d. per train-mile.
36. And for the three years ending 31st March, 1916?—It was 5·87d. per train-mile.

37. So that it has been a little more during the last three years?—Yes.

38. What inference is deducible from that?—During the last year we have had to pay a war bonus, and taking everything into consideration I think it will work out practically the same.

39. I want to ascertain whether, by such checks as you are able to give, the maintenance has fallen off or not?—No, it has not. I am quite satisfied it has not fallen off.

(Adjournment till 2.30 p.m. On resuming:)

40. You desire to say something about some averages you mentioned this morning?—Yes; I made a slight mistake this morning in saying the averages extended over three years. They were the averages for each year—that is, the 104 per cent. meant 104 per cent. of the wagons passed through the workshops in the one year. That is, the whole of the wagons and 4 per cent. in addition went through the workshops in the one year.

41. And the same with regard to the figures for the subsequent period?—They are the same—99 per cent. for the year ending 31st March, 1916, and 104 per cent. for the three years ending 31st March, 1913.

42. And your figures with regard to cars and brake-vans have to be treated in the same way?—Yes, 167 per cent. for 1913 and 159 per cent. for 1916 for the cars, and 157 per cent. for brake-vans for 1913, and 176 per cent. for 1916.

43. *The Chairman.*] That is the average for the three-year period?—Yes.

44. *Mr. Myers.*] You have been a great many years in the service of the Department, and you heard what Mr. Gillon said with regard to the use of liners in the axle-boxes?—Yes.

45. Do you agree with what he said as to the practice?—Yes; it is quite a common practice, not only in New Zealand, but I have seen it done in any other railway I have had anything to do with.

46. And I think you know something of the practice of using pieced draw-bar springs on wagons, do you not?—Yes.

47. How long back, to your knowledge, has that practice been carried out?—I think I can say the matter was discussed nearly twenty years ago, in Mr. Rotherham's time.

48. And permitted and approved of by him?—Yes. In those days we used the Timmis spring, which was very expensive, and tests were made both at Addington and Petone, if I remember rightly, with regard to the compression of a spring broken in two pieces, and it was decided to use them. They cost about 13s. a spring at that time.

49. You are speaking of metal springs?—Yes.

50. *The Chairman.*] Do you remember what were the results of those tests made of the draw-bar springs?—Well, if I remember correctly there was very little difference in the load taken to compress the spring broken in two pieces as compared with the complete spring. If I remember correctly there was not more than half a ton's difference to compress them dead.

51. What was the maximum compressional load on the sound spring?—I cannot remember that.

52. The Commissioners will carry out some tests to ascertain that?—Yes.

53. *Mr. Marchbanks.*] What was the difference in the classification of your wagon-repairs between heavy repairs and light repairs?—The light repairs are perhaps more the changing of brasses and that sort of thing, and the heavy repairs would be when the underframes are gone and draw-transoms are gone.

54. In all cases of light repairs would the vehicle go to the shop or would the work be done in the yard?—If it is anything that can be done in the yard it is done there, providing it can be done expeditiously. If they have too much to do in the yards, then the vehicles are sent to the workshops.

55. I have been looking through some returns from 1912 to 1916, and so far as heavy repairs go there seems to be a falling-off in the last year or so. Taking the total of the vans and wagons for 1912-13, there were 5,504 put through out of a total of 18,521 vans and wagons, and in 1915-16 the number came down to 5,722 out of a total of 21,226. That is taking the number of vehicles at the beginning of the year and not at the close of the year when you are adding new stock?—Yes.

56. With regard to repairs to wagons in 1912-13, the cost was £133,125 on 18,521 vans and wagons, and on 21,226 vans and wagons the cost was £136,202, so the percentage was less per wagon; and so far as the rate per mile is concerned it was 6.02d. in 1913 as compared with 5.80d. in 1916, showing a slight decrease in the rate of repairs per mile in the last few years?—Yes.

57. The cost of the springs and material is greater to-day than prior to 1914?—Yes; at any rate, during the last eighteen months it would be from 50 to 100 per cent.

58. That would tend to make the decrease still greater?—It would appear to do so.

59. Then there is another point in this classified expenditure for the year in connection with wages and services. I take it that includes all wages spent on car and wagon repairs?—Yes, and locomotives.

60. But it gives the locomotives separately?—Yes.

61. Then it shows stores. Does that include the whole of the material used in repairs?—Mr. Jackson will be able to answer that question better than I can.

62. During your long service with the Railways, of course, you must have investigated the cause of a number of derailments?—Yes.

63. During the last three or four years have you had a larger number of derailments in proportion than previously?—No, fewer.

64. In all cases they are investigated?—Yes.

65. In any case have they been found to be due to defective equipment?—In no case in which I have held an inquiry has it been found to be due to defective vehicle equipment. Of course,

we have had inconclusive findings in a good many cases just in the same way as other railways have, but my experience is that in the whole of the inquiries I have held we have never found any due directly to any defect in any vehicle concerned.

66. With regard to bearing-springs, you have two different forms?—Yes, one on the axle-box and one on the stirrup.

67. Have you noticed any difference in the canting of the boxes in regard to the bearing-spring on the stirrup?—If I have noticed any difference it is in those where there is the little casting. I have noticed some that have been canted in that way, and perhaps more so with those than with the bearing-spring straight on the axle-box.

68. With regard to the brake equipment, how is that kept up now in your opinion as compared with the period prior to 1912-13?—I think it is kept up equally as well, if not better. We have put in more testing-stations, and we have more fitters than we had before.

69. In regard to axle-replacements, they extend, I understand, over the last fifteen years?—Yes, about that time.

70. Then during the last three years the replacements have fallen away inasmuch as the bulk of them have been done?—I think they are pretty well all done.

71. *Mr. Maxwell.*] Speaking about heavy repairs and light repairs, I was looking at the report for 1916, and I find there is a table of the number passed through the shops of heavy repairs, light repairs, and touched up. Are those items included in the number passed through the shops? They do not appear to be, because they total up a very much larger number than the number passed through the shops?—I think *Mr. Jackson* can answer that question as he has the records. We generally consider it heavy repairs when it means taking the undergear off, supplying new axle-boxes and new springs, &c.

The Chairman asked that a return be supplied of the cars, wagons, and vans on the South Island main line and branches for the beginning of each of the three-year periods 1911-12 up to 1915-16, and the same with the North Island.

Mr. Myers: Mr. Chairman, I wish to put in the report asked for by *Mr. Wilford* in regard to the deputation mentioned this morning. [File put in. Exhibit L.]

Mr. Wilford: That is what I require, and I will read what it says:—

Extract from Report of Deputation from the Executive of the Amalgamated Society of Railway Servants to the General Manager of Railways on 14th July, 1915. Original on 1912/1700.

Mr. Whisker: Defective draw-gear springs being placed in vehicles. I would like to hand in a copy of an instruction issued by the Car and Wagon Inspector, Wanganui, in regard to draw-gear springs. I think a man who issues a circular like that should consult a specialist. You know as well as I do that a spring is designed to absorb jolt. How does *Mr. Valentine* think the jarring will be overcome by using springs in the manner he directs? It is most dangerous. Where his thoughts of the travelling public come in we don't know. He must have forgotten them. He is careful enough to say that it does not apply to cars.

Mr. McVilly: I don't know anything about this.

Mr. Whisker: In process of time all vehicles on the trains would be in the same condition. Picture a passenger-car on a train behind fifty or sixty wagons with springs made up like that! In the meantime our men are getting into trouble for draw-gear failures.

Mr. McVilly: I think you can take it that it will be put right.

Urgent.—Chief Mechanical Engineer.—For your remarks, please. *E. H. HILEY*, General Manager.

Mr. Wilford: That is all I ask. The note of the interview is on the 14th July, and then the letter of *Mr. Hiley* is on the 14th September.

Mr. Myers: Annexed to that is a copy of *Mr. Valentine's* direction based upon *Mr. Richardson's* instruction. The Commission will remember that both those reports are already in [Exhibits B and C].

The Chairman: Yes.

Mr. Myers: That extract is referred by the General Manager to the Chief Mechanical Engineer, who replies as follows:—

Draw-gear.—The instruction to use portion of broken draw-bar springs was issued by *Mr. Richardson* when there was a shortage of this material. I do not admit that *Driver Whisker* is an authority on such matters, and see no reason to cancel the instruction issued by *Mr. Richardson*. I am not aware that any drivers are getting into trouble for draw-gear failures, and cannot remember any such cases during the two years that I have been Chief Mechanical Engineer. I think *Driver Whisker* can safely leave such matters to the officers of the Department.

That is what *Mr. Jackson* wrote.

Mr. Wilford: I presume *Mr. Whisker* was spokesman for the executive?

Mr. Myers: Presumably.

Mr. Wilford: Is he on the executive?

Mr. Myers: I presume he is. Then *Mr. Hiley* wrote the general secretary of the society on the 14th September, 1915, as follows:—

Sir.—With reference to the representations made by your executive at the interview on 14th July last in regard to the alleged use of defective draw-gear springs, I have to inform you that the instruction to which you referred was issued by direction of the Locomotive Engineer, and as the Chief Mechanical Engineer concurs with it I can see no valid reason why it should be withdrawn. I desire also to state that the strictures made on the Car and Wagon Inspector by your executive were unwarranted and should not have been made.

But that is not all, sir. On the 28th September, 1915, which is nearly a year before *Mr. Wilford* discovered about these springs, *Mr. Veitch* asked the Minister of Railways "Whether an instruction has been issued in his Department directing that when broken draw-gear springs are discovered in vehicles other than passenger-cars they are to be replaced with parts of broken

springs; and, if so, does he consider that this is in the interests of the public safety"? The Minister of Railways replied, "An instruction was issued on lines indicated applicable to draw-bar springs of wagons, and only in cases where the standard strength could be reinstated by the utilization of a portion of a spring properly fitted to the draw-bar. The matter has been looked into carefully by responsible officers, and the Chief Mechanical Engineer, who is in charge of the rolling-stock, considers the safety is in no way impaired."

Mr. Wilford: That was not put before the Commission before I mentioned it.

Mr. Myers: The Commission has only reached Wellington to-day, and the Wellington evidence has not been put in. Mr. Valentine's instruction was in. The General Manager asks me to say that the matter was never referred to again by the society after receiving the General Manager's letter.

Mr. Wilford: Thank you, Mr. Chairman, that is all I wanted.

RICHARD EDWARD ROBERTSON sworn and examined. (No. 28.)

1. *Mr. Myers.* What are you?—Engineer and Brake Expert in the New Zealand Railways.
2. How long have you been so employed?—About a year and nine months.
3. Is that your length of service actually with the Department?—Yes.
4. Prior to that by whom were you employed?—By the Westinghouse Brake Company as an engineer. I was in charge of the different contracts for the Westinghouse Company in Australasia.
5. Did you have charge of the equipment for the New Zealand Railways?—Yes.
6. How long were you employed on that work in New Zealand?—On the work of the contracts and with the Westinghouse Brake Company about twenty-two years. I have been in New Zealand altogether nearly seventeen years, representing the Westinghouse Brake Company all the time, except during the last year and nine months I have been with the Railway Department.
7. You actually had charge of the equipment of the rolling-stock in New Zealand with the Westinghouse brake?—Yes.
8. And you have charge of it now, but in a different capacity?—Yes. At present I am employed by the Department to look into the brake matters.
9. Have you a staff under you?—No, I am directly under Mr. Jackson.
10. And do you inspect all over New Zealand?—Right through New Zealand.
11. You ought to be in a position to say how the brake equipment is maintained?—Well, as far as the air-brake equipment is concerned, there is nothing like it in Australasia. I can speak with a practical knowledge right through.
12. When you say there is nothing like it in Australasia, what are you referring to, the equipment itself or the condition of maintenance?—Both the equipment and the maintenance.
13. Can you tell the Commission whether or not there are proper brake-testing plants at the repair depots throughout New Zealand?—There are exceptional testing plants distributed throughout New Zealand from Auckland down to Invercargill. During the time I have been in New Zealand I have taken special interest in the Westinghouse brake. I have made a hobby of it, and I have made a special note of the equipment during the whole time I have been here; and not only the equipment, but also the appliances for keeping the equipment up to date, which are very good. At the principal centres there are either oil-engine or electric motor air-compressors, and also testing-appliances: these are installed right throughout New Zealand. There is nothing like it in Australasia.
14. You are speaking of its condition now. What was its condition when you first took the equipment over as Brake Inspector for the Railway Department?—Well, it has not got worse, but has got better. The centres that had not got the testing-equipment have now got them. It has not deteriorated—it has gone on improving.
15. *The Chairman.*] Before you came to New Zealand you were engaged in Australia?—I had charge of the brake-fitting contract in New South Wales while equipping the rolling-stock, and also in Queensland.
16. And before that you were in England?—Before that I was with some of the best firms of engineers in Sydney, and served my apprenticeship with the North-eastern Railway Company, England.
17. You have had ample opportunity of seeing the condition of the stock on those different railways?—Yes.
18. Speaking of the present condition of the New Zealand rolling-stock, how does it appear to you to compare with the stock in use in Australasia?—Does that refer to the Westinghouse brake or the stock in general?
19. The stock in general?—I think it compares very favourably. When I have been travelling around New Zealand for the last sixteen years I have examined the brake-gear on the cars, wagons, and engines, and therefore I could not help seeing nearly every part of the gear, and I have found it is very good.
20. In what condition have you found the tires?—That is a matter I have not gone particularly into, but I have seen nothing wrong with them. They seemed to be good as far as I could see.
21. Generally speaking, what is the condition of the stock as compared with the stock in Australia?—I think there is more care taken here in regard to the upkeep.
22. That is your general impression?—Yes.
23. And the Westinghouse brake equipment is being kept up well?—I do not think there is any part of the world where it is kept up better. I make a point of that because I have made a special hobby of the Westinghouse brake during the last twenty years, and it is very good here.

24. Are there always ample spare brake-blocks on hand?—There are ample parts always on hand not only of brake-blocks, but of the Westinghouse brake-fittings.

25. You have never been short of fittings?—Not to my knowledge.

26. *Mr. Marchbanks.*] Is there sufficient pit and shed accommodation, in your opinion, to enable the brake-gear repairs to be properly carried out?—The sheds and pits are very good. Some of the sheds have not got pits, but the majority have. Special sheds have been built in New Plymouth, Wanganui, Taumarunui, and other railway centres.

27. Do you think there is sufficient accommodation to enable the repairs to be carried out properly?—Yes.

28. Do you come across many cases of vehicles being run with the brake cut out?—You may travel for months and months and not get a single vehicle cut out. It is very rare that you find a vehicle cut out.

29. Do you get many cases of the quick action cut out in the old quick-action triple?—No, the quick action is seldom cut out. It is reported at once, and put right again if there is a case.

30. Are there many cases of the check-valves becoming defective?—No, they have a special apparatus for testing the check-valves.

31. Six or seven years ago there used to be trouble?—Yes, there will always be a certain amount of trouble, but they seem to be extra-well maintained here.

32. Do you know any derailment being caused by any brake-gear giving way coming down on the track?—No.

33. *Mr. Myers.*] Do you know how the number of brake-failures in New Zealand compares with the number of failures on the railways in other parts of the world?—I should think they should be less here, because the brakes are better kept up. I cannot give you any accurate figures at this moment

WILLIAM HENRY JOHNSTON sworn and examined. (No. 29.)

1. *Mr. Myers.*] You are Workshops Foreman at Napier?—Yes.

2. You have no Workshops Manager there, have you?—No, I am in charge of the shops.

3. You come within the Wellington District, do you not?—Yes, under Mr. Evans, the Locomotive Engineer. Mr. Kelly is our Car and Wagon Inspector.

4. Do you receive periodical visits from those gentlemen?—Yes, from both about every four weeks. Each one pays a visit of inspection. They inspect the sheds right through and the stock.

5. How many examiners have you at Napier?—Two train-examiners under Mr. Kelly.

6. And each of them, I suppose, sends vehicles into the shops for repairs?—Yes, the train-examiners at Napier and from Waipukurau and Woodville.

7. How long have you been Workshops Foreman at Napier?—Four years and a half. I was part of my time of twenty-one years leading fitter at Hillside, and then Workshops Foreman.

8. When vehicles are sent into the shops at Napier for repair, who inspects them before they are allowed out again on service?—I do.

9. You have to see that the repairs are properly effected and that the vehicle is safe?—Yes, and fit to run.

10. What condition is the stock in now, or so much of the stock as comes under your notice?—I should say it is in good working-order and running-condition.

11. How does the condition now compare with the condition when you first became Workshops Foreman?—I should say from my personal observations it is in rather better condition than when I took charge four years and a half ago.

12. Why do you say it is in better condition?—Because of the improvement and renewals that have been made.

13. What do you mean by "improvements"?—Improvements such as draw-rods and the draw-gear strengthened. The UB heavy bogie wagons and heavy bogie stock have had the bogies all strengthened with straps since 1913, and the car-gates have been heightened, all tending to improve the safety of the vehicle and putting it in better condition. The renewals of axles have been greater during the last few years.

14. So that even though a great deal of your stock has been getting older, improvements have been effected?—Yes.

15. That applies to all the stock as it comes into your works from time to time?—Yes. The older stock has been improved in that way, and a number of axle-boxes have been replaced by new ones during the last three years.

16. Do you find that liners have to be used at times even in your most modern axle-boxes?—Yes, occasionally, when the horns are slightly worn.

17. Is that a new or old practice?—It is a very old practice. It was in vogue when I joined the service twenty-six years ago.

18. And it has been in vogue ever since?—Yes. We use a steel liner. That is only in cases where the axle-boxes are slightly worn and not sufficient to take them out.

19. How is the painting-work maintained?—It is well maintained. There are more cars painted than previously. We put through about sixty cars a year.

20. You do not construct new cars at Napier?—No, only do repairs.

21. I suppose you have a repair siding at the station at Napier where minor repairs are done?—No, we have no repair siding at Napier: all the work goes into the shops.

22. Have you during your four years and a half at Napier had any vehicles come in with broken axles or broken tires?—No, not one.

23. I suppose you keep a stock of spares at Napier?—Yes.

24. Whence do you draw your spares?—From the Storekeeper at Petone.

25. Do you requisition the Storekeeper direct?—No, through the Locomotive Engineer. I put in orders to the Locomotive Engineer, who requisitions the Storekeeper at Petone for the supplies.

26. And how many weeks' or months' supplies do you get at the time?—As far as I possibly can I try and keep three months' supplies on hand. If there is a likelihood of that being reduced I put in a fresh order.

27. How do you find those requisitions answered?—I find them answered very promptly. I have no difficulty whatever in obtaining supplies.

28. *The Chairman.*] What condition do you consider the stock to have been in last July?—Just about the same as it is now.

29. Have you received any instructions either verbally or in writing to hurry up the work since last July?—No, sir.

30. Have you made any special effort since that date to expedite the repairs?—No, only just the same as I had done previously.

31. How do you consider the repairs were kept up during the three years prior to the last July?—About the same as they are now. I do not notice any difference.

32. Have you since last July received any instructions in writing or verbally to discontinue the use of pieced springs?—No, sir.

33. Had you received any instructions previous to that to use them?—In July, 1914, I received instructions that they could be used.

34. Did you put in many pieced springs?—About fifty.

35. Did you put any in cars?—No, all in wagons. There were none put in cars or vans.

36. How many pieces were those springs in?—The majority were in two pieces, and some were in three pieces.

37. How many were in three pieces?—I suppose about ten or a dozen, but those that were in three pieces were made about half an inch longer, and they were put in in that way to suit the draw-bars that were rather longer than necessary. Some draw-bars are a shade longer than others, and in putting them in I put in the spring and made it three pieces, making it slightly longer so as not to alter the effect of the length of the spring when compressed. It saved putting a washer in at the end where the nut goes on.

38. What was the reason for putting in pieced springs?—The reason as far as I could understand was to avoid undue wastage. If those springs are pieced together properly where there is a buffer that is suitable, and which is a bit longer perhaps than the average buffer, instead of putting washers at the back end you put in a longer spring, and it takes that and avoids the wastage.

39. Do you consider those springs pieced up are efficient as springs?—Yes, I do.

40. You have already said you have never had any difficulty in obtaining spares?—That is so.

41. Except in the case of springs?—I have really had no difficulty in the case of springs: I have always had some on stock.

42. *Mr. Marchbanks.*] What percentage of broken draw-bar springs do you get from the wagons that pass through the shops?—Most of the wagons that require them are because they are broken.

43. All the wagons do not come into the shops with broken draw-bar springs?—No. I suppose 150 springs are put in vehicles in a year, and I suppose about 130 of those would be in wagons and ten or a dozen in cars, and four or five in vans. That is about the proportion in a year.

44. Out of how many carriages and wagons?—We put through about 1,000 wagons and 250 cars in a year.

45. That is about 150 springs out of 1,250 vehicles, is that so?—Yes, that is about it.

SIDNEY PERCIVAL EVANS sworn and examined. (No. 30.)

1. *Mr. Myers.*] You are a Locomotive Engineer in the service of the Railway Department?—Yes, that is so.

2. What is your district?—The Wellington District, which extends between Wellington and Taumarunui, Wellington and Napier, and Wellington and New Plymouth and branches.

3. How long have you been in charge of that district?—One year and nine months.

4. Before that did you have a district?—I was two years Locomotive Engineer in the Head Office in charge of Nelson, Picton, and Gisborne lines.

5. That is the position held now by Mr. Gillon?—Yes.

6. Before that were you Locomotive Engineer?—No, Workshops Manager at Addington, Hillside, Dunedin, and Auckland for about twelve or thirteen years.

7. Did you hear Mr. Shaw at Wanganui give evidence that the number of hot boxes in Hawera had increased last year?—I did.

8. He was, of course, giving evidence from memory, but have you access to the actual figures?—Yes.

9. Can you tell the Commission whether Mr. Shaw was correct or not in his statement?—I understood him to say that during last year the hot boxes have been more frequent than in previous years, but he makes out the returns himself of the number, and for the year ending 31st March, 1914, the number was twenty-nine; for 1915, forty-five; and for 1916, sixteen. That is the actual number.

10. So that he would have been right if he had been referring to 1915, but was wrong in saying the number had increased?—Yes.

11. And the following year the number went down considerably?—Yes.

12. Can you say how the volume of inspection over the New Zealand lines of the Locomotive Branch for the last three years compares with the inspection previously?—I think they have been very much more carefully inspected during the last three years than previously.

13. I am speaking more with regard to frequency?—Yes, they have been much more frequently inspected. As a matter of fact, the Chief Mechanical Engineer's inspection has been much more frequent. During his inspection he is very keen in observing any defects, and seeing that the train-examiners are carrying out their duties, and so on. He reports to me very frequently various things he had noticed during his inspections which need attention or have been overlooked by one or other of the Inspectors or train-examiners. I have no hesitation in saying that those visits have been very beneficial in so far as they have given an incentive to the officers of the Department to put forth their best energies in carrying out the work efficiently, because the Chief Mechanical Engineer has always been particularly definite in instructing all of us that all repairs and all stock has to be maintained up to the very highest state of efficiency. That has been his strong point ever since he has been in charge.

14. What do you say as to the condition of the rolling-stock now?—I consider it compares very favourably indeed with what it did three or four years ago.

15. What do you mean by comparing favourably?—I think the stock is in better condition than it has been at any previous time. A large number of improvements have been made—axle-boxes have been renewed; horns increased in width; angle-irons to give a larger bearing-surface to the boxes; enlarged ends on draw-rods; the bogies of cars strengthened in the framing, in very many cases with angle-irons to reinforce the channel; and various other improvements, such as car-gates and new car-platforms—all tending to increase the general efficiency and safety of the rolling-stock, in my opinion.

16. Have you noticed any indication of the efficiency being sacrificed for economy?—Never.

17. In your district has there been any special instruction, say, since July last, with regard to speeding up repairs?—No, none whatever.

18. Has there been any alteration in the methods in that connection since July last, or has the practice gone on just the same as before?—Just the same as before. There have been no instructions regarding expediting the work at the expense of the efficiency, to my knowledge.

19. What I mean is this: would there be any real difference between the condition of the stock now and the condition, say, in July last?—I think there has been a great improvement since then—quite a number of those improvements I have mentioned have been effected since July.

20. They have been going on all the time?—Yes. The stock has been generally improved in condition generally.

21. You have quite a number of men responsible to you in your district?—Yes, that is so.

22. What kind of staff have you on the whole?—I think we have a very efficient staff taking them all round. Of course, we have some not quite as good as others, but taking them altogether I think we have a very fine staff.

23. So far as your staff is concerned, is it a staff with whose competency you are satisfied?—Yes, quite.

24. I am referring, of course, to the Car and Wagon Inspectors, train-examiners, and the men at the workshops?—Yes.

25. We know that Mr. Wilford said in the House that one man concerned with the rolling-stock had told him that the stock was in such a condition that the man declined to accept the burden of responsibility on his shoulders. Do you know of any justification for such a statement on the part of any man connected with the rolling-stock of the railways?—No, none whatever.

26. Have you anything to say with regard to the painting of the stock?—I think the painting has been kept up to date. I think the condition of the cars has improved very considerably during the past three years, and I think the painting generally has been well maintained.

27. How about the distribution of spares? The Car and Wagon Inspector and the Workshops Managers requisition you, do they not?—Yes.

28. You do not keep the stores yourself?—No, the Storekeeper at Petone keeps them.

29. Is there a large stock of spares kept there?—Yes, there is usually a fairly large stock kept in the stores.

30. You have nothing to do with ordering for the stores?—No. In some cases their orders depend upon our orders from the workshops.

31. How do you find that your requisitions are from time to time met?—Very well. We have had no difficulty in getting our supplies for repair work. We have always got quite sufficient for our requirements.

32. Have you ever had any complaints from any of your train-examiners or shops as to any difficulty in obtaining supplies or any delay in forwarding?—No, there have been no complaints in that direction from the shops. Perhaps in regard to draw-bar springs there may have been a slight delay in getting them pending the arrival of shipments, but apart from that we have had no difficulty in getting supplies.

33. Do you know of any complaints having been made in your district by any persons responsible for the rolling-stock as to the condition of that stock?—No.

34. You have seen the report of what Mr. Wilford told the House?—Yes.

35. And that that had been said to him by some one connected with the rolling-stock?—Yes.

36. No such report, as far as you know, has been made in your district to the Department?—No; it is quite groundless so far as we are concerned here.

37. Well, you mentioned springs, and it is the fact, as we know, that pieced draw-bar springs are used from time to time?—That is so.

38. To your knowledge how long has that practice obtained?—I have known pieced springs to be used for at least fifteen years. It was not the general practice, but on occasions pieced springs were used.

39. Does the occasional use of pieced draw-bar springs affect the safety of the train or the travelling public?—No, not in the slightest, in my opinion. Practically there is no difference between a pieced spring and a new spring, the only difference is that in effect a pieced spring is $\frac{7}{16}$ in. shorter than a new spring.

40. Is it as much as seven-sixteenths?—I mean that under compression. It becomes solid with about $\frac{1}{2}$ in. less compression than it would take to compress a new spring solid, but seeing it has such a very large extent for compression I do not think that is an important point at all. For instance, as the Commissioners know, a spring is compressed about $\frac{3}{4}$ in. when put in. Then in ordinary service the further compression of that spring averages about $\frac{1}{4}$ in. or $\frac{1}{2}$ in., so that during service the total compression of that spring is about $\frac{1}{2}$ in. Then it has another 2 in. to go. So that a pieced spring, in my opinion, is actually as good as a new spring for what it has to do. That is in ordinary service. Under the roughest conditions I consider a pieced spring, if properly put together, has sufficient movement to withstand the strains it is subject to in service before becoming solid.

41. Do you know of them being used on carriages?—Not to my knowledge, but they are used on wagons.

42. Have you seen or do you see any objection to the use of pieced draw-bar springs?—No, if intelligently put together to make up the required distance I do not see any objection to their use.

43. Then we may take it that, subject, of course, to such opinion as may be expressed by the Commission, you would have no hesitation in continuing the practice which you say has existed to your knowledge for the last fifteen years?—Yes, that is so; none whatever. I do not know that I would recommend putting pieced springs into cars.

44. But you say that so far as you know they have not been put in?—Yes, that is so; not that they would be any source of danger, but I think it is easier for the train-examiners to discover a broken spring in a car. They have not much time, and if they see a spring broken they know it has to come out. If pieced springs were put into cars it would take a little more time for the train-examiners to discover whether it was broken or pieced.

45. So far as the safety of a train is concerned, you would not have any objection to pieced springs being used in cars?—Not at all.

46. *The Chairman.*] There is a great uniformity in the form of answer in this D.-6 return. Did you collect the information from the various officers mentioned?—I have not seen the return, but I presume I did.

47. It is a return which was furnished to the House of the statements of the various Workshop Managers and Car Inspectors?—Yes; I collected that information.

48. Did you draw up the questions or receive them from the Head Office?—As far as I remember I think the questions were given to me by the Head Office.

49. And you asked the various questions to which the men gave their replies?—As a matter of fact I have not seen the printed return. [D.-6 return handed to witness.] Yes, I think these questions were indicated by the Head Office.

The Chairman: I presume there is some record of those questions, Mr. Myers?

Mr. Myers: What was done was that a memorandum was sent out to the Locomotive Engineers containing certain questions that had been raised in the House, and asking the officers what they had to say with regard to them.

The Chairman: We asked for that return.

Mr. Myers: I thought it had been furnished.

The Chairman: No. This is the only memorandum from the Engineer that generally refers to the matter.

Mr. Myers: This is the only statement that was sent to the Secretary [Exhibits E and F].

50. *The Chairman* (to witness).] You spoke about a pieced spring, and you said that in ordinary work a spring only received a further amount of compression of $\frac{1}{4}$ in. beyond the usual $\frac{1}{2}$ in?—That is in traction on an ordinary train.

51. But, say, in buffing?—Of course, it might be $\frac{1}{4}$ in., but I have watched very carefully. On a mixed train it has been a very severe rough movement which has caused the movement of the spring to be $\frac{3}{4}$ in. or $\frac{7}{8}$ in.

52. And in longer goods-trains?—Very little more than that. In ordinary service the compression would not be much more than that. One-and-a-half-inch compression is the total of what trains would cause the springs to compress in service.

53. And in shunting?—Of course, they are very frequently solid.

54. We may take it that the figures you have given us are the ordinary compression in service and main-line running in traction and in compression?—Yes.

55. *Mr. Marchbanks.*] What is the difference between "painted" and "touched up"? I am speaking of wagons. Wagons are completely painted when they are shown in the return as painted?—Yes.

56. What does "touched up" mean?—Perhaps when the body has just had a coat and the underframe has not required painting, or just a portion of the wagon has been renewed.

57. Or some planks been renewed?—Yes.

58. Is the amount of painting on your section, so far as wagons are concerned, as great as it was three years ago?—I think the painting of wagons has been fairly well maintained. Some-

times perhaps the cars have had preference, but I think the wagons have been generally well maintained considering the number we have to do.

59. I make the decrease in painting between 1913-14 and 1915-16 to be from 22 to about 16 per cent. That applies generally all round, and not to any one section; but so far as you know the painting has been kept up on your section?—Yes, as far as I know it has been maintained.

60. With regard to draw-bar springs, there are different types in use?—Yes, there have been different types, and there are now.

61. Have you formed any opinion as to which is the best type of draw-bar spring?—I think the latest spring is the best—the round-section spring. It is a stronger spring, at all events, and I think it will prove satisfactory in service.

62. With regard to bearing-springs, you have two different types of axle-boxes with bearing-springs?—Yes.

63. What is your opinion in regard to the better type?—Well, my experience has been that the one with the casting on top of the axle-box has been the best running-box. My experience is that there is a less percentage of those boxes run hot owing to the movement the boxes get on the curves and so on in running, and there is less liability for the brasses to run hot than with the type with the two solid springs on the box.

64. Have you known of any cases of the brasses turning in the boxes?—No, I do not see how they could with the brasses that we have now. It has not been so lately.

65. None during the last three or four years?—No.

66. With regard to derailments, you have had some?—Very few derailments since I have been in charge of the section.

67. Have you investigated the causes?—Yes.

68. Have you ever known of a derailment due to defective equipment?—No; there has been no cases where a derailment has been found to be due to the wagon except in the case of unequal loading. None have been due to defective equipment.

69. What do you mean by "unequal loading"?—One end of a wagon is lightly loaded and the other end heavily loaded. There have been one or two derailments due to that cause I believe.

CHARLES THOMAS BARGH sworn and examined. (No. 31.)

1. *Mr. Myers.*] You are Workshops Manager at Petone?—Yes.

2. How long have you been there in that position?—Since April, 1913.

3. Had you been Workshops Manager before in any other workshops?—Yes, on the Manawatu Railway.

4. How long have you been in the Government service?—I have had two terms. The last term was since 1908.

5. At what duties were you employed between 1908, when the Government took over the railway, and 1913?—Locomotive Inspector at the Thames works, where new locomotives were being built.

6. What had been your duties when you were in the service of the Manawatu Company?—Workshops Manager and Locomotive Foreman.

7. You say you had been in the Government service before that again?—Yes.

8. The Petone shops are large shops?—Yes, fairly big.

9. What is the number of men employed there?—About five hundred men.

10. You had a good deal of car and wagon construction there?—Yes, in addition to repairs.

11. Your duties, I suppose, are the duties of superintending in the main?—Yes, my duty is to see that the work is done properly and carried out in a faithful manner according to the instructions received.

12. The vehicles are sent in to you, as in other districts, by the Car and Wagon Inspector, and by the train-examiners at the different stations?—Yes.

13. Is there any one on your own staff who inspects the repaired work before it is sent back into service?—The leading hand; and the Foreman sees that the work is done properly.

14. Who is the Foreman?—Mr. Sherwin. I often see it as much as possible when passing through the shop.

15. In addition to any inspection there may be in the workshops, is there any officer who inspects the repaired vehicles before they are allowed to be again put into service?—Yes, the Car and Wagon Inspector makes a very rigid examination. He is the man who passes them out. They cannot go out until he has inspected them.

16. That is Mr. Kelly?—Yes.

17. He inspects all the vehicles that have gone into the shops for repair before they go out again?—Yes.

18. Supposing a vehicle comes into the shops for repairs, it comes accompanied with a Loco. form No. 43?—Yes.

19. That indicates the nature of the repairs required to be effected in the opinion of the examiner or Inspector who sends the vehicle in?—Yes, that is so.

20. What happens to the vehicle then in the shops, is it overhauled?—The vehicles are shunted in. There are different lines for them, and a string of them are put in. The different leading hands pass through them and see what has to be done, and chalk it on the wagon. Then the lifters and carpenters come along and effect those repairs.

21. Is the repair work that is done to those cars limited to the nature of the repairs set out in Loco. No. 43, or do you effect other repairs if they appear to be necessary?—Everything necessary is done whether it is on Loco. No. 43 or not.

22. What have you to say now with regard to the present condition of the rolling-stock?—I think it is being continually improved from time to time. I could mention a few of the improvements that are being continually effected.

23. There is no harm in your doing that?—The first is that the older stock is getting foot-rests and grab-irons put on as a matter of safety. The older stock is also getting new boxes put on, and better horns. The carriages have had the gates on the platforms raised as a matter of safety. On the stock-wagons there has been a piece added to save the sheep from getting broken legs. That is on the older stock that has been built for many years. There is also the Pintsch gas-cylinder, which is a better protection in the case of fire, fitted on all new cars that are built.

24. Can you say anything about the painting of the vehicles?—The painting is kept up to date as much as it possibly can be, and at the present time it is generally better than it has been for some years past.

25. Have you at any time had any particular instructions from your superior officers to economize?—We have instructions always to be as economical as possible.

26. That is a general instruction at all times?—Yes.

27. But have those instructions been accentuated in any way?—No, nothing more than the ordinary instruction which has always been in force.

28. Do you think there would be any justification for any suggestion that the repair work was skimped in any way?—No, I am quite certain there is not.

29. In regard to pieced draw-bar springs, have they been used at the shops?—Yes.

30. On cars or wagons?—On wagons only.

31. Have many of them been used, say, during the last three years?—Not a great deal. We were not so badly off for springs at Petone. We had a large stock of springs for new stock which we could work upon if we got short. There was no record kept of the pieced springs put in wagons, but I should say there would be fifty used in the last three years.

32. Did you ever see any objection to their being used on wagons?—No, I do not see any objection. The spring is made up to its original length. I notice you have one here on the table now. It is so designed that the pieced spring really fits in very well. There is very little ultimate strength used in pulling a wagon; it is more in buffing. That is where the damage is done, too; and in my opinion a pieced spring is just as good for buffing as a whole spring on wagons.

33. Does the use of pieced draw-bar springs on the wagons, in your opinion, prejudice in any way the safety of the train or the passengers?—Not in the slightest, I should say.

34. There are railway stores at Petone, are there not?—Yes.

35. They are not under your jurisdiction, are they?—No, they are in a separate branch.

36. Where do you get your supplies from?—From the stores.

37. How do you find the stocks kept up in the stores?—Very well. Of course, at the present time, on account of the war, there is a shortage of different things which are unprocurable, but that is abnormal.

38. You have been out at Petone now about four years, and you have told us what you think of the condition of the stock now. How does it compare with the condition of the stock as you saw it when you joined four years ago?—As I said before, it is continually being improved, because some of the improvements I have mentioned have been brought out since I have been there. Therefore the stock as a whole is continually being improved to what it was four years ago from time to time as we go on.

39. Supposing you heard it stated that a man concerned with the rolling-stock said that the condition was such that he declined to carry the burden of responsibility on his shoulders, would you consider such a statement justified in any way?—From my knowledge of it it would not be.

40. Have you seen anything or do you know of anything which would be even a foundation for any such statement?—No, I absolutely do not.

41. *The Chairman.*] Is there any systematic inspection of your finished work before the Car and Wagon Inspector goes through it?—The leading hands and the lifters see it is done, and the leading hand for the carpenters is responsible. There are small things which may slip them, which the Car and Wagon Inspector discovers.

42. I understand they look after the wagon during the period the repairs are going on, and so also does the Foreman, but when the repairs are completed do they go through the wagon?—Not until it is on its road. We have a special road for that purpose. The vehicles are pulled out of the shop and put on this road, and then the leading hands examine them before the Car and Wagon Inspector comes along.

43. Therefore you do have a systematic inspection?—Yes.

44. What stores are unprocurable at the present time owing to the war conditions?—Certain sizes of steel plate are very difficult to get now.

45. But with reference to wagon work?—I am not referring to wagons particularly. Steel plate and bar iron of special sizes are difficult to procure: that is all I know of.

46. During the last three years you have received no special instruction that economy was to be the paramount consideration?—No.

47. And repairs have proceeded as usual?—Just as usual.

48. Has there been any special hastening up of repairs since the question was asked in the House?—No. We have been rather reduced in staff since then because some of our men have enlisted.

49. *Mr. Marchbanks.*] Can you say how many draw-springs, roughly, you use for replacements for maintenance at Petone in a year?—Roughly, about four hundred.

50. And how many wagons and cars are put through the shops?—About fifty vehicles a month. Those are repaired vehicles. The largest number we have used is four hundred draw-bar springs of late years for repairs.

51. There are several types of draw-bar springs in use at the present time: there is the one similar to that on the table, and the Timmis?—I have not seen the Timmis for some time.

52. And some round-section spirals?—Yes.

53. They are somewhat similar to the spring used on the bogie stock by the Manawatu Company?—Yes.

54. How do they stand?—They have only been a short time in use, but I do not remember seeing any broken yet.

55. In your opinion how do the old Manawatu Company's draw-bar springs with the inch steel and five-eighths in the inner coil stand as compared with the present draw-bar springs?—My opinion is that the round steel is the better.

56. My opinion was there were not many of that type, and more breaks with the Timmis type?—Yes.

57. I understood that all the round ones were removed?—Some were an inch short.

58. The reason that the 6 in. springs have been removed is because of the alteration in the gear?—Yes, 7 in. is the standard, and therefore they would be an inch short.

59. With regard to the axle-boxes, of course the Westinghouse brake has taken some years to develop, but cumulatively is there more wear due to the Westinghouse brake than before the brake was applied?—Yes, I think so.

60. A good deal more canting up?—Yes, and we take the horn off and put in an extra bearing to guard against it.

61. And the wear involving the use of liners is a good deal due to the Westinghouse brake?—Yes.

62. With regard to painting, is there much trouble in maintaining the steel underframes of the R wagons?—No, the wagons stand very well. I remember four or five where one side channel would be pitted and the other side would be all right. We have renewed those, and they are very few.

63. With regard to sheep-wagons, is there much trouble in maintaining the channel?—We had one some time ago where one channel was all right and the other was pitted.

64. Is there as much painting of wagons as compared with previously?—I think there is more painting of wagons now.

65. You have not been concerned with derailments, or inquiries in connection with derailments, in the last few years?—No, they do not come under me.

66. *Mr. Maxwell.*] You said you were using four hundred springs in a year: does that refer to Petone alone?—Yes, that is the maximum. A return was made up for the last four or five years, and the number varies from just under three hundred to a maximum of four hundred.

67. When did the maximum occur?—I have no note of that here, but I think it was the year ending 31st March, 1914.

68. What I want to know is whether the four hundred springs a year used at Petone included any of those springs put in by train-examiners at the different stations?—No, I would not include new springs put in if they put in new springs.

69. Would it include new springs put in at Masterton or Woodville?—No, only those put in at the shop.

JAMES HENRY SHERWIN sworn and examined. (No. 32.)

1. *Mr. Jackson.*] Will you tell the Commission your present rank?—Workshops Foreman in the car-shop at Petone. I have held that position for three years and a half.

2. What was your position before that?—Workshops Foreman at Wanganui, where I was for two and a half to three years.

3. And before that?—Leading carpenter at the Petone shops.

4. Will you tell the Commission the procedure adopted when vehicles are sent in for repairs?—We have a Loco. 43 issued by the Car and Wagon Inspector stating what has to be done, and we also examine the vehicles ourselves. If there is anything to be done which is not mentioned on Loco. 43 we just do it. We see what is stated on Loco. 43 as to the repairs to be carried out.

5. If you find work is required other than that stated on Loco. 43 in the course of your examination, you do that work?—Yes.

6. After the vehicles are repaired what becomes of them?—They are put on to the test road, and they are passed out from there by the Car and Wagon Inspector.

7. Is there any other examination made of those vehicles after they are repaired?—I examine them myself with my two leading hands—the carpenter and lifter—before the Car and Wagon Inspector sees them.

8. Has any one else authority to allow those vehicles out of the shop other than the Car and Wagon Inspector?—No.

9. You have been a Foreman for seven years, roughly?—Yes.

10. You ought to be conversant with the condition of the stock during that period?—Yes.

11. How does the stock compare now with what it did, say, three years ago?—I should say that at present it is in better condition than it was three years ago.

12. Have any standard improvements been effected to the stock lately?—Yes, in the wagon stock we have taken the buffers out and enlarged the buffer-holes, the guard-irons have been taken off and brought up to standard, and new boxes put on. I should say we average about two to three wagons a week.

13. What do you mean by the guard-irons being brought up to standard?—Where a box becomes broken we are not making the old boxes good, but taking the Beuther boxes out and putting in new ones.

14. Are there any other improvements?—Yes, also the height of the gates on the platform, and special irons to all wagons; and in repairing the breast-beams we are putting them in in 4 in. where they used to be 2½ in., and also in the case of the beam next to the head-stock. In regard to the sheep-trucks, we are putting on a stop at the end of the door-frame to prevent the sheep from getting their legs out. I cannot think of any more.

15. Those different things are being done for the purpose of improving the stock generally?—Yes, bringing our stock up to one standard.

16. *Mr. Myers.*] We have been told that there are about five hundred men altogether employed by the Petone shops: how many of them come under your immediate control?—About 125 to 130, I think. They are in my section doing repair work. Of course, I have carpenters and lifters under me.

17. And do you find them competent for doing their work efficiently?—Yes, quite.

18. What do you do yourself in connection with the stock which is under repair?—I go round and examine the stock at different times during the day, and if I see anything that requires doing I call the leading hand's attention to it, and sometimes chalk it on the wagon if he is not handy at the time.

19. Then the vehicles are sent out periodically, I suppose?—Yes.

20. On what days?—All days during the week. We send a batch along at different times.

21. I do not mean the work to be done, but the vehicles which have been repaired?—Fridays and Saturdays are the days generally for passing out the vehicles which have been repaired, but on show days and race days they may be wanted, and we send them out for the Car and Wagon Inspector.

22. Do you have all this work ready for his inspection when he comes along?—Yes.

23. Is there any examination or inspection of the repaired work before the Car and Wagon Inspector makes his examination?—Yes, we have a No. 2 road on which the stock is put, and I go along and examine the stock before it goes out and make a test, and we satisfy ourselves that it is all right.

24. If you find there is a vehicle which is supposed to have been repaired and which is not right, in your opinion, what do you do?—Mark it "Stay in."

25. That is not submitted to the Car and Wagon Inspector?—No.

26. Do you sometimes find that work you have passed is not passed by the Car and Wagon Inspector?—Some small things sometimes pass me. He may see a nut requiring attention which I may have missed.

27. He does find small things which have been overlooked by you and the men about the shops?—Yes.

28. And where any things like that are found, are they put right before the vehicle goes into service?—Yes. The Car and Wagon Inspector takes a note of them and lets me know what has to be done.

29. *The Chairman.*] In 1915 the time for some vehicles going into the shops was extended. Cars on the main line remained out twelve months before going into the shops, and L and M vehicles or wagons remained out three years before going in?—Yes.

30. Have you noticed any increase in the amount of repairs required to be done to those vehicles when they came in since 1915?—No, I cannot say I have noticed them particularly. Some of them had damage done to the head-stocks, but the general repairs did not seem to be any more.

31. The general repairs are not any heavier than they were?—No.

32. Can you suggest any reason why they should not be any heavier if the wagons stay out for a longer period?—No. I think the longer period only applies to lifting, but as far as the carpentering work is concerned there is no difference as far as I have observed.

33. Do you consider that this permission for them to remain out for a longer period has had a prejudicial effect?—No, I think previously they were brought in too soon. I have not noticed any deterioration in the stock since the extension.

34. You consider the present arrangement is really a better one?—Yes, I do.

35. Previously you found the cars and wagons come in needlessly?—Yes, that is so.

36. With regard to broken springs, when the wagons come into the shops do you find as a rule that they have the draw-bar springs broken?—We have found that to be so in a good many cases.

37. Would that apply to half the wagons that come in or to two-thirds of them?—No, hardly that. I should say, about 3 or 4 per cent. of them, not more.

38. Not more than four in a hundred?—I think not much more.

39. Have you been in the habit of using pieced springs?—Yes.

40. How many pieces?—Up to two pieces.

41. Have you ever put in three pieces?—No, I have never allowed it, and have never required to in the Petone shops.

42. From your daily viewing of the wagons, what percentage of springs pieced in more than two pieces do you consider are running?—I should say a good many of them run, but I could not say the percentage.

43. With more than two pieces?—I do not know about more than two pieces. I have not particularly looked for more than two pieces. I have seen them with broken springs, but have not taken the trouble to count the number of pieces. I cannot say.

44. Have you been making any special effort to improve the condition of the rolling-stock since this matter was mooted in the House?—No, I have not.

45. You have been carrying on just in the usual way?—Yes, just in the usual way.

46. *Mr. Marchbanks.*] Is the painting of the wagons under your jurisdiction as well as the repairs?—It was till just lately.

47. Is the painting of the wagons carried on in the same proportion now as was the case three years ago?—As far as the white wagons are concerned I should say they are painted more often.

48. But take the wagons generally?—Yes, just the same as previously.

49. Have you noticed many corroded channels under the wagons?—Of course, we have had some which we have had to take to the shop, but not a great proportion.

50. They stand fairly well?—Yes.

51. When you have applied pieced draw-bar springs to a wagon, have you ever noticed the same wagon come back with the draw-bar spring broken?—I could not say that.

52. *Mr. Maxwell.*] Have you ever seen any carriages come in with pieced springs in them?—No. We have had them come in with broken springs, but we have always renewed them.

CHARLES THOMAS BARGH recalled. (No. 33.)

1. *Mr. Myers.*] You gave the Commission a number as being the number of vehicles which come into your shops for repair?—Yes, I made an error and gave the number for a period instead of during a week.

2. You gave it as over a period of four weeks?—Yes, instead of for a week. The average number of vehicles turned out per week is forty-two wagons, three vans, and five cars.

3. That is the average per week, and not over a period of four weeks?—Yes.

4. *Mr. Marchbanks.*] That would make the number 2,600 cars, wagons, and vans per year?—Yes.

5. That is taking fifty per week?—Yes, that is right.

6. *The Chairman.*] Fifty per week is correct, and not fifty per period?—Yes, that is correct.

CHARLES GEORGE KELLY sworn and examined. (No. 34.)

1. *Mr. Myers.*] You are at present Car and Wagon Inspector in the Railway Department on the Wellington Section?—Yes.

2. Is that the same section as that in respect of which Mr. Evans is the Locomotive Engineer?—The best part of Mr. Evans's section, but he takes in Wanganui as well, and I do not. My district includes Wellington, Palmerston North, across to Napier and Wairarapa.

3. How long have you been Car and Wagon Inspector in this district?—Two years, with a break of five months, when I was Workshops Foreman at Petone.

4. Had you been Car and Wagon Inspector before that?—Yes, Car and Wagon Inspector on this section up till last July, and then five months in the workshops at Petone, and then put back as Car and Wagon Inspector.

5. Before you took over this district first as Car and Wagon Inspector, had you been Car and Wagon Inspector before?—No, only acting. I was in the workshops as leading fitter.

6. In Napier I understood you do not inspect the work?—No, not the passing out: that is done by the Workshops Foreman.

7. Do you do any inspection at all at Napier?—Yes, I inspect the yard when round on my inspection visits, which are at least once a month.

8. Does that apply to the whole district?—Yes.

9. I take it that when you are not out inspecting your headquarters are in Wellington?—Yes.

10. When not actually away inspecting what duties are you performing?—I have office-work to do in connection with records for the North Island. Then I have the passing-out of stock from the Petone Workshop, and inspecting and keeping all the stock up to date.

11. Do you do any inspection at the shops apart from the actual passing-out of vehicles that have been repaired?—Oh, no, no inspection of the shops.

12. Any inspection is done by the Locomotive Engineer?—Yes.

13. Do you personally send any vehicles into the workshops?—Oh, yes, frequently, from anywhere. If I find anything wrong with a vehicle I take it out of traffic right away.

14. But the train-examiners are kept for that purpose?—That is so; but it might happen at a station where there is no train-examiner.

15. You have quite a number of train-examiners under you at the various stations, have you not?—Yes.

16. And do you find their work efficiently done?—Yes, well done. We have a staff of forty-three, I think, train-examiners and lifters, doing repairs and train-examining.

17. Doing repair work on the repair sidings at the stations?—That is so.

18. And how do you find the repair work done at the shops at Petone?—Very well done.

19. I would like to get from you your idea as to a comparison in the condition of the rolling-stock as it is now and its condition at the time when you became Car and Wagon Inspector at Wellington?—I reckon it compares very favourably—very well indeed.

20. The first point is as to whether there has been any deterioration as far as you can see in any part of the rolling-stock?—No, no deterioration whatever.

21. What about the old stock—some of it must be getting older?—It is getting older, but if we find anything deteriorating we strengthen it up.

22. You keep it maintained in good condition?—Yes, in good running condition.
23. Have you used or seen used many pieced draw-bar springs?—Yes, we have pieced a good many at Wellington, and a few at other stations.
24. Can you give the Commission any idea of how many you have used?—We have used between three hundred and four hundred.
25. You have not kept any record?—No.
26. Over what period would that number be used?—That would be 1915, from about the middle of March, when we started to piece them.
27. On what kind of vehicles were those pieced draw-bar springs used?—On wagon stock only.
28. How did you find the pieced springs work?—They answered very well.
29. Had you known the practice to exist before?—Yes, I have seen it years ago.
30. Of those pieced springs which you know to have been used during the year 1915, do you know whether any of them are still in commission?—I should say so.
31. Have you seen any of them yourself?—No, I would not know whether they are still in commission, but I would not say they were all taken out yet.
32. Do you see any reason yourself for taking them out?—No, not unless there were any more breakages.
33. May the Commission take it that the pieced springs have worked efficiently as far as you could see?—Yes.
34. Does the use of a pieced draw-bar spring affect the safety of a vehicle or the public at all?—Not at all, no.
35. Now, as Car and Wagon Inspector you have a good deal to do with the ordering of stocks or spare parts for the train-examiners, do you not?—Yes.
36. And for any one else—what about Napier?—Yes, for Napier for the train-examiners, but nothing to do with the shops.
37. You have to supply the train-examiners out of Wellington and Wellington included?—Yes.
38. You get their requisitions as they want their stocks?—Yes.
39. To whom do you in turn requisition?—I requisition from three shops—East Town, Napier, and Petone; for Palmerston from East Town, and for all other places except Waipukurau and Napier I got the stock from Petone.
40. And for Wellington?—Yes, from Petone.
41. When you send your requisition to the shops do they send the supplies through you or direct to the different stations?—At times I have them sent direct, and when I issue an order I ask them to be sent direct to the train-examiners.
42. Have you ever had any complaints from the train-examiners that their supplies are not sent along quickly?—No; we get them all in a reasonable time.
43. You have nothing to complain of in that respect?—No, nothing at all.
44. *The Chairman.*] With regard to the extension of time in the period over which the vehicles are now allowed to remain out of the shops before going in for lifting, how is it working?—I do not think it makes a great deal of difference. There are always some outstanding for lifting. I do not think it has made any difference at all.
45. If the rule had been rigidly adhered to, do you consider the period was too short, or that the period now is too long?—I do not consider it is too long now. Three years should be a reasonable time.
46. Do you think the wagons are receiving satisfactory attention?—I do.
47. Why did you commence the use of pieced springs?—The reason we started the use of them on that particular occasion was because we were out of whole springs. If we had had whole springs we should not have put the others in.
48. Are you still using pieced springs?—I have used some lately.
49. You have not taken them out?—No, not where they are in good order.
50. *Mr. Marchbanks.*] Can you say how many springs you requisition for per month for Wellington, Palmerston, and Napier?—About a thousand a year I think we go through in repairing.
51. Have you noticed any type of axle-boxes that are more liable to run hot than others on wagon stock?—No, the old Beuther boxes we seemed to have the most trouble with.
52. Do you get more boxes canted with those that have two springs supported in small castings resting on the box than in those supported on a single spring?—We get most with the single spring. Some of them are on a bridge, with a central point, and we get most canted boxes with the one with the bridge.
53. *Mr. Maxwell.*] You were asked a question about wagons getting old. As a matter of fact wagons do not get old—you keep on repairing and adding improvements and renewing them?—Yes, that is so.
54. And as a matter of fact, after thirty or forty years the only permanent thing about a wagon is the number—it is practically a new wagon?—No, the underframe will still be there.
55. It may be there; it may be new. You are putting in new springs, new draw-bars, new bodies, new chains, and new axle-boxes, and putting in improvements and maintaining the parts, and after thirty or forty years it is not the same material you started on?—No, certainly not.
56. A wagon is not allowed to get old—it is always supposed to be kept up to date?—That is so.
57. *Mr. Myers.*] Supposing a wagon comes in very badly knocked about, what happens?—If it is badly damaged and beyond repair we have to rebuild it. That is practically a renewal, and we have to get authority to rebuild it.
58. And if it is only damaged but not beyond repair?—If it is only damaged and the damaged parts can be renewed they are renewed.

WELLINGTON, TUESDAY, 20TH FEBRUARY, 1917.

The Chairman: You suggested, Mr. Myers, that it would be more convenient to the Department if the Commission sat at Dunedin directly before sitting at Christchurch. We have considered that matter, and we shall sit in Dunedin on Wednesday, the 7th March, and sit in Christchurch on Friday, the 9th. Then we should like to have a list of the witnesses the Department proposes to call at Dunedin and at Christchurch. We also desire a list of the train-examining and lifting staffs in the South Island. There is another announcement I have to make, and that is that we have heard a great deal of evidence on the subject of pieced springs. Most of that evidence has been extreme in character. We have been told that a pieced spring is no spring at all, that it is a solid block. On the other hand, we have been told that a pieced spring, having passed through the furnace of adversity, is tempered and so chastened that it can sustain any amount of further punishment. Now, the Commissioners propose to have tests made so as to definitely establish the value of pieced as compared with solid springs. Those tests will be made in the Engineering Laboratory at Canterbury College, and we hope the representatives of the Department will be present. Further, we desire to ascertain for ourselves the practical behaviour of those springs in running, so we would ask the Department to arrange that the carriage in which we travel through the South Island shall be fitted with trap-doors over the springs, with a supply of springs pieced and sound of the various types provided in the car, together with a simple sliding indicator fitted to the draw-bar, which will enable us whilst in transit to ascertain at any time the compression which the springs undergo. I will be very happy after the adjournment to discuss the arrangements with the Chief Mechanical Engineer. I desire further to announce that out of respect to the memory of the late the Hon. Sir George McLean the Commission will rise for half an hour at 11 o'clock.

Mr. Myers: With regard to some of the requests made by the Commission yesterday, we have some of the returns asked for prepared already. [Returns handed in—Nos. 1 to 4.] I might say I am handing in these returns now because it will be convenient, no doubt, to the Commission to have all these returns so that when Mr. Jackson or any other witness is giving evidence the Commission will be in a position to ask questions, whereas otherwise there might be inconvenience. The returns I am handing in will all be verified by Mr. Jackson when he is actually giving his evidence in the South Island. I propose now to call three witnesses—first of all the officer who has until recently been Depot Chargeman at Nelson, the officer who has been until recently Depot Chargeman at Picton, and the officer who has recently been Workshops Foreman at Greymouth. I do not propose to call the officers at present holding those positions, because they have all been placed in those positions quite lately, whereas those gentlemen I am calling have held the positions for some time prior to the recent appointments.

The Chairman: When you say "quite lately," what do you mean?

Mr. Myers: I will get evidence from them as to the precise details. As a matter of fact, I have not seen any of them, and I will get the information from them. Then, sir, after having called those three I propose to call the various train-examiners and other officers who are being called at the request of the Commission as the result of a perusal by the Commission of the list of officers at the examining stations and other places in the North Island which was handed in some little time ago.

JOHN CLELAND CHERRIE sworn and examined. (No. 35.)

1. *Mr. Myers:* You are in the employ of the Railway, and have been in that employ how long?—Thirty-one years.

2. What is your present position?—Depot Chargeman at Nelson; and I have been in that position for three years and four months.

3. And when did you leave Nelson?—Four weeks ago.

4. And is somebody else there as Depot Chargeman now?—Yes; I have been appointed Locomotive Foreman at Whangarei.

5. At the moment I understand you are on leave?—Yes; I have not taken Whangarei over yet.

6. Who has taken over your place at Nelson?—Mr. R. W. Clark.

7. Nelson Section is quite a small section, is it not?—Yes. The district is from Glenhope, sixty-one miles. Only the one line and no branches.

8. And have you any shops in Nelson?—Yes, we have a shop there.

9. Do you construct cars or wagons there? No; we put them together when they are sent from the larger shops. We assemble them there.

10. So, apart from that work, the whole of the work done at the shop is repairing work?—That is so.

11. You were the head man at the shop?—Yes, I was.

12. Who is responsible for the maintenance of the rolling-stock on that small section?—I was solely responsible.

13. When you say you were solely responsible, did you have any supervision or were there any inspectorial visits?—I inspected the stock myself regularly. There is one train-examiner there.

14. You inspected the stock yourself over the whole line?—Yes.

15. How often did you go over the line for the purposes of inspection?—Probably every month as the time suited.

16. I suppose most of the stock would come from time to time into Nelson?—Yes, invariably.

17. Did you have any visits paid to Nelson from any Locomotive Engineer or from the Head Office?—Yes, from the Locomotive Engineer, Mr. Gillon, latterly. I should say the visits were about every three months.

18. And any visits from the Chief Mechanical Engineer and his assistant?—The Chief Mechanical Engineer has been there at various times, and his assistant has been there once.

19. You were proceeding to say what train-examiners you had on your section?—Yes, we have one train-examiner in Nelson. That is the only train-examiner on the section.

20. Are there any lifters to help him?—No, he did the lifting and examining. There is no work for any more men.

21. Did he do much in the way of lifting, or was most of the work done in the shops?—He was partly used in the shops.

22. Has he a repair siding at Nelson?—Yes.

23. The stock would come to you for repairs, I suppose, upon the direction of the train-examiner?—Yes.

24. How many men are employed at the shop there?—Nine.

25. Who was responsible for the passing out of the vehicles after the repairs had been effected?—It was my duty to pass out the vehicles and say if they were fit to run. The train-examiner had no say in that.

26. I suppose there is not a great deal of stock on a small section like that?—About two hundred vehicles all told.

27. And what about the sufficiency of your staff at the shop—had you sufficient men there to do the necessary work?—Yes.

28. During the time you were there, the three years and a half, did you see any changes for the better or for the worse in the condition of the rolling-stock?—The changes were for the better during the time I was there.

29. In what way for the better?—I brought all the rolling-stock up to what we might call standard in the way of equipment.

30. I think the stock there is not yet equipped with the Westinghouse brake?—No.

31. That is one of the few sections still to be equipped?—Yes.

32. Have you had any vehicles come into the shop there during your time with broken axles?—We have had none.

33. Or broken tires?—No, none.

34. Have you found any vehicles come in with broken bearing-springs?—No, we have not had any with broken bearing-springs.

35. Or with broken draw-bar springs?—We have had them with broken draw-bar springs.

36. On carriages, wagons, or both?—Both.

37. Which would be in the majority?—The wagons.

38. That is due, of course, to shunting?—Yes, they undergo rougher handling.

39. Have you used any pieced draw-bar springs there?—No, neither on carriages nor on wagons.

40. Do you keep supplies of spares at your shop?—Yes, we draw them from Petone or the district stores in Wellington, as the case may be.

41. Whom do you requisition for your supplies?—The Chief Mechanical Engineer.

42. Do you send the requisition to your Locomotive Engineer for the district?—They are put in on the ordinary S3 through the stores. We put the requisition for spares generally through the Chief Mechanical Engineer's office.

43. Do you keep a small or a considerable supply of spares?—A considerable supply. For a small section they probably might amount to fifty or one hundred spare springs on hand.

44. How do you find your orders or requisitions attended to?—They are supplied promptly—I have no complaint to make.

45. Have you on your section had any shortage at all of any supplies?—No.

46. What about the painting of the vehicles on your section?—It is exceptionally good.

47. Who decides over there when a vehicle is to be painted?—I did.

48. Have you had any instructions at all in the direction of curtailing the painting?—No, none whatever; and I have not curtailed the painting in any way.

49. Have you had any instruction of any sort or kind to curtail the repairs?—No; on the contrary, all the repairs were to be maintained at the highest efficiency.

50. You say you have had instructions to that effect—were they in writing or verbally?—Verbally, from the Inspecting Engineer.

51. When you say you have had instructions to maintain repairs up to the highest efficiency, are you speaking of a recent instruction or an instruction covering the whole of the period or part of the period?—The whole period. It was always impressed upon my mind that the rolling-stock had to be kept in the highest state of efficiency.

52. And have you carried out that instruction throughout the whole of your term in Nelson?—Yes.

53. *The Chairman.*] What was the condition of the rolling-stock last July?—Very good, sir.

54. And what was the condition three years previous to that?—When I took the section over the rolling-stock was in good condition.

55. How does the present condition compare with the two periods mentioned?—I should say that it has greatly improved. As I said before, I had brought the whole of the rolling-stock up to standard in the way of springs, and grab-irons, and everything else that it was not equipped with when I went there, such as foot-steps and grab-irons on the trucks.

56. You said you have used no pieced springs?—Yes, I did not think it necessary because I always had ample stocks.

57. Did you not receive a circular stating that pieced springs might be used?—No.
 58. And you have been in no way compelled to economize on the upkeep of the stock?—No.
 59. *Mr. Marchbanks.*] Can you say how many draw-bar springs on the average you use in a month?—No, I could not say from memory.
 60. Have you any idea?—There may be six per month.
 61. Have all your iron axles been replaced by steel axles?—Yes.
 62. Have you had any cases of broken draw-bars on running trains?—No, not on running trains.

HENRY ARCHIBALD SWORN and examined. (No. 36.)

1. *Mr. Myers.*] You have been for some years employed by the Railway Department?—Yes, thirty-three years.
 2. I think you have been Depot Chargeman at Picton?—Yes, for two years and four months.
 3. Have you lately been removed to some other position?—Yes, I have been transferred to Palmerston North a fortnight ago as Depot Chargeman.
 4. Who has taken your position at Picton?—Depot Chargeman H. Banks.
 5. What is the name of the Picton Section?—The Picton-Ward Section.
 6. What is the length of the line?—Forty-eight miles; from Picton to Blenheim eighteen miles, and then on to Ward. There are no branches.
 7. Where is the train-examination done?—At Picton.
 8. There are no other examining stations?—No.
 9. And what examining staff is there at Picton?—Just the train-examiners—no lifter. The examiner is classed as a lifter.
 10. You have a shop at Picton, and that is the shop of which you had charge?—Yes.
 11. How many men have you employed in the shop?—Three.
 12. Can you give us some idea of the quantity of stock on the section?—There are 154 L class wagons, twenty-seven double-deckers, four cattle-trucks, six XA's and six U's, thirteen cars, and six horse-boxes.
 13. Are we to understand that you do the whole of the repairing at the shops, or is any of it done at the station by the examiner?—Anything that goes wrong, such as a hot box, there is a man sent out to do it.
 14. But it would not be done by the examiner himself?—No, it would have to be taken into the shop.
 15. So I take it that your staff did the whole of the repair work for the section?—Yes, bar any large repairs, which were sent to Petone.
 16. What do you mean by "large repairs"?—Well, such as new wagons to be built.
 17. You did not do any construction work there?—Only the double-deckers. There were three new wagons under construction when I left. Two were finished and one unfinished. They were two cattle-trucks.
 18. Did you have a large enough staff in Picton to do the repair work on the section?—Yes; they seemed to be competent to meet the work required.
 19. Who was responsible for the condition of the rolling-stock?—I was held responsible.
 20. The stock would be sent in when required by the examiner in the usual course?—Yes.
 21. Who was responsible for the passing-out of the repairs when finished?—The carpenter.
 22. Did you have any responsibility in regard to them?—Yes. He examined them before they came out of the shops, and he notified me and I also examined them.
 23. Did you have any great increase in the stock on the section during the time you were there?—No.
 24. Any increase at all?—An increase of larger locomotives.
 25. But I was speaking rather of cars and wagons?—No.
 26. Have you anything to say as to the general condition of the stock?—I consider it is in good working-order.
 27. How does it compare with the condition when you took the stock over first?—I think it is improved, because any defects were always remedied. Standard axle-boxes were also put in, so I consider the rolling-stock in general is better than when I took it over.
 28. You have not the Westinghouse brake equipped over there, have you?—No.
 29. Did you paint the vehicles at your shop?—Yes.
 30. What is the condition of the vehicles now with regard to painting?—Good.
 31. Did you ever have any instructions to curtail the painting?—No.
 32. Or to curtail the repairs in any way?—No.
 33. Did you have any general instruction with regard to repairs and painting?—No.
 34. Your section, I suppose, was inspected occasionally by some one from Wellington?—Yes, by Mr. Evans, and afterwards by Mr. Gillon.
 35. Did the Chief Mechanical Engineer ever come over?—Yes.
 36. Did you make any inspection of the stock except at Picton itself in the shops?—Yes; I went round the stock, and went to Blenheim and Ward as required. On an average I went once every two months.
 37. Have you on your section had any, and if so how many, broken axles coming into the shop during your period?—No broken axles have come in, nor broken tires. There has been a broken bearing-spring or two on wagons.
 38. What do you do when you find a broken bearing-spring?—We simply brought the vehicle into the shop right away and put in a new spring.

39. Did you have many broken draw-bar springs?—No, very few. We had some, but they were renewed when required.

40. Did you use any pieced draw-bar springs on your section?—No, I always put in new springs.

41. And where did you get your stock of new springs or any other spares from?—From Petone, through the Chief Mechanical Engineer's Office.

42. Did you ever have any reason to complain of delay in the delivery of the stores?—No.

43. Did you have any shortage in Picton at any time or from time to time?—No, I have never had a shortage.

44. Would the stock come frequently into Picton?—Yes, it was constantly coming into Picton because Picton was the main centre. The stock was loaded at Ward and Blenheim and brought into Picton.

45. Did you inspect the yards there? Yes, I inspected the yards there myself.

46. *The Chairman.*] You say you had no instructions regarding repairs?—Well, just ordinary instructions, which I paid attention to.

47. Was the idea given to you that you had to keep up the repairs or to go easy on repairs?—I was to keep them up to standard.

48. It has never been suggested to you that you should slacken off in the repairs?—No.

49. How is it you never used pieced springs?—Because I always had plenty of new ones.

50. You say you have had some broken springs in wagons: were those laminated springs or coil springs?—Coil springs.

51. Have you ever had any broken laminated springs?—Yes, one or two, but more coil springs.

52. And you say the painting has been kept up thoroughly on your section?—Yes.

53. *Mr. Marchbanks.*] Have all the iron axles on the Picton Section been renewed in steel?—No, I could not say for certain about that.

54. You do not replace the axles over there?—No, not unless the wheels were required.

55. Is there a press over there?—No.

56. *Mr. Maxwell.*] Are there any special reasons why the bearing-springs break—say, from accident, derailment, or some other special cause?—No, I could not give any special reason for it.

57. Have you any idea how many bearing-springs have been broken on the wagons since you have been there?—Very few.

58. Have you had half a dozen bearing-springs break while you have been there?—Yes. I do not think the number exceeds one a month.

59. And how many draw-bar springs break in a year?—There were more of those broken, but I could not say how many in the course of twelve months. Of course, the wagons were just brought into the shops and new springs put in.

FREDERICK ARTHUR LAURIE sworn and examined. (No. 37.)

1. *Mr. Myers.*] You are in the employ of the Railway Department?—Yes.

2. And you have been Workshops Foreman at Greymouth how long?—For two years and eight months; but I have been transferred to Petone now as Workshops Foreman. I was transferred about the 16th November last year.

3. Who is the Workshops Foreman at Greymouth now?—Mr. H. F. Thomas.

4. What do you call that section?—The Westland Section. The section ends at Greymouth, and really extends to Ross on the south and Otira going north, Reefton, Blackball, Rewanui.

5. What is the total length of railway on the section?—About a hundred miles.

6. And Greymouth is the headquarters?—Yes, that is where the workshops are.

7. Are the train-examiners under the Workshops Foreman?—Yes. All the examinations of trains are done at Greymouth. That is the only examining-station.

8. And how many examiners are there at Greymouth?—Three.

9. Are there any lifters in connection with the station staff?—No.

10. Do the examiners do any lifting?—No, they merely examine.

11. Am I to understand that the whole of the repair work is done in the shops?—Yes.

12. And what is the number of men on the staff at the shops?—About forty-five.

13. Can you give us the number of vehicles approximately which form the rolling-stock for the district?—A little over 1,100 vehicles.

14. What would be the proportion of wagons and the proportion of carriages?—About fifty carriages and the rest wagons and brake-vans—mostly coal-wagons.

15. Who was responsible on that section for the inspection of the repaired work—the passing-out of the repaired work?—The Workshops Foreman is responsible for the passing-out of the work. That was myself.

16. Did you find the staff you had in the shop sufficient to cope with the work of the section?—Quite.

17. In what condition are the vehicles on the West Coast maintained?—In the most efficient condition.

18. Could you make any comparison between the condition when you left three months ago and the condition when you took charge of the district?—It is improving. Things are being brought more up to date and being standardized.

19. I suppose the wagons down there necessarily get rather harsh treatment?—Not more than on other sections.

20. During your two years and eight months can you remember how many, if any, broken axles you had coming into the shops?—I had none, and no broken tires, nor any broken bearing-springs.

21. And did you have any broken draw-bar springs?—Occasionally.

22. Would you find the broken draw-bar springs on wagons or carriages?—Mostly on wagons.

23. What type of draw-bar spring is used down there—the same as this type here [produced]?—Yes, that is the type we used there.

24. Have you had any circular coil springs?—We have some now—they just arrived before I left.

25. How do you find those work?—We found them all right: they stood the test.

26. How do they compare with the spring on the table here?—Quite favourably in the test.

27. Did you use any pieced draw-bar springs on your section?—Occasionally, but not many, and only on the wagon stock—the four-wheeled stock.

28. How did you find them work?—Quite satisfactorily. They were almost as good as the new spring. I had no hesitation in putting them into the wagon stock.

29. Is this practice of using these pieced draw-bar springs occasionally a modern practice?—I would not say it is a practice. We occasionally used them, but very few.

30. Is that something which has been done only of late years, or something which goes back?—I can go back thirty years since I first saw pieced draw-bar springs used.

31. Has it ever been suggested to you or suggested itself to you that the use of pieced draw-bar springs endangers the safety of the travelling public on the train or the safety of the train?—I would have no hesitation in saying that I do not consider it any danger to the train in any way.

32. Vehicles are painted at the shop at Greymouth?—Yes.

33. Is there as much painting done as formerly, or more, or less?—About the same. The vehicles are kept right up to date. The paint-work is very good on the Westland Section.

34. Who used to inspect your section besides yourself?—The Locomotive Engineer, who was then stationed at Westport, but he is now in Greymouth; and sometimes there was an inspection by the Chief Mechanical Engineer.

35. Who was the Locomotive Engineer?—Mr. Haskins.

36. Did you yourself have to inspect the whole of the stock on the section?—Yes.

37. Did you go on visits of inspection?—Yes, over the section every four weeks.

38. And how often did the Locomotive Engineer go over the whole section?—About once a month.

39. In company with you, or was the inspection entirely separate?—Entirely separate.

40. Has there been any diminution in the repair work of late years?—No, I do not think there has been. Everything has been kept right up to date.

41. Have you ever had any instructions from which you inferred that you were to diminish the repair work?—No.

42. Have you ever had any instructions at all with regard to the repair work?—My instructions were always to keep the repair work up to date and have regard to the travelling public. Those were the instructions from the Locomotive Engineer.

43. You kept supplies of spares at Greymouth?—Yes.

44. And anywhere else?—No, only at Greymouth.

45. And where did you obtain your supplies from?—From the railway stores at Greymouth. We had a Storekeeper there.

46. Did you from time to time experience any shortage of spares?—No, I cannot say I have ever had any difficulty in getting supplies when required. They came up in a reasonable time.

[The Commission then adjourned for half an hour out of respect to the memory of the late Hon. Sir George McLean.]

(Witness called by the Commission.)

HENRY SHARMAN SWORN and examined. (No. 38.)

1. *Mr. Myers.*] What are you?—Senior train-examiner at Palmerston North.

2. How long have you been in that position?—Four years and two months.

3. And what is your total length of service in the Department?—Eighteen years and three months.

4. What portion of that period have you been train-examining?—Twelve years.

5. How many train-examiners are there in Palmerston?—Five others besides myself, and one lifter working with the Westinghouse-brake fitter.

6. Do you do any repair work at the station?—Yes, the man on the siding does it, assisted by the train-examiners.

7. Are all the trains which pass through Palmerston examined day and night?—Yes, day and night.

8. And when any vehicle is found with a defect, what course is taken?—It is stopped and marked "Not to run." It is then put on the repair siding and the repairs attended to always. If it is a wagon or carriage in which the repairs cannot be done in Palmerston, then it is sent to the shops at East Town, Napier, or Petone. It depends on what quantity of work there is at each shop as to which shop it is sent to. I try to regulate it equally between the shops during the week.

9. You have nothing to do with the work that comes out of the shops—with passing the work out?—No, that is passed by the Car and Wagon Inspector, Mr. C. G. Kelly of Petone, Mr. Valentine of Wanganui, and at Napier the work is done by the Workshops Foreman.

10. *The Chairman.*] In what condition was the stock in your district last July?—In good condition.

11. What was the condition three years ago?—Good condition.

12. Has there been any improvement or any falling-off?—An improvement in the building of the wagons has taken place.

13. You received instructions that you might use pieced draw-bar springs?—Yes, and we have used them.

14. How many pieces have you put in at a time?—Two.

15. Have you ever put in more than two?—Well, at the finish, to enable a wagon to be got through, we put four pieces in and cramped them up properly, and it is quite safe. Only a couple of wagons were dealt with like that. As soon as a supply of springs came to hand those wagons were caught and the full spring put in.

16. You mean at the finish?—Yes, when we had run right out of complete pieces.

17. There was an actual shortage of springs, was there?—Yes, until the others came to hand. They were on order, but had not arrived. There were only a couple of wagons treated like that.

18. And you took the pieces of springs out afterwards?—Yes.

19. How many times has such a shortage as that occurred in your experience?—Only since the war broke out. We always had plenty of material before. We only had to order it to get supplies every month.

20. Can you give us any idea as to the proportion of broken springs you find in wagons and carriages—say, wagons first?—In wagons we find a fairly good number broken through rough shunting. The general repairs to draw-gear work averages twenty to twenty-six a week at the present time on account of the heavy trains, and the quantity of trains we have to examine. In winter-time we have as many as forty draw-bar springs a week.

21. Forty a week is the number you manage to stop and renew in winter-time?—Yes, and at the present time about twenty-six; but there are more broken ones.

22. Supposing you renewed the whole of the springs that are broken, how many do you think would have to be renewed in a week?—Well, with the present staff at Palmerston we would not be able to do more than we are doing at the present time on account of the quantity of trains. To renew all the springs that are cracked in New Zealand you would want a couple of thousand men put on at once.

23. The springs may be broken, but still be safe to run?—Yes.

24. Do you get many broken bearing-springs?—Very few.

25. Which are they, the laminated springs or the coil springs?—Occasionally you may get one bearing-spring—we got one last week in Palmerston, and I think it is about six months since we had a laminated spring broken. That one was immediately renewed.

26. Do you ever permit a vehicle to run with a broken bearing-spring?—No, never.

27. Do you consider your staff at Palmerston sufficient to cope with the work there?—No, I do not—not to be able to do everything that we should do. It is no use having a bigger staff until we get an alteration to the railway-yard to give us the facilities.

28. Do you find the yard a difficult one to work so far as repairs are concerned?—Yes, because the wagons are put into a siding, and you can only put in five at a time. We can get three wagons over the pit and put them out at the back, but they are both dead-ends. Then you can push in two others, but you have to wait on the shunters, which is very awkward. On wet days we have to wait for the shunters, because a man cannot lie in a pool of water.

29. The defect, therefore, is the want of accommodation rather than the want of hands?—Yes.

30. I suppose the traffic during the past few years has been steadily increasing?—Yes, every year.

31. How long ago were the facilities at Palmerston adequate?—The siding has always been in that position ever since I have been a train-examiner. I have been twelve years there, with the exception of sixteen weeks, when I was stationed in Wellington as gasman.

32. You say that further siding accommodation at Palmerston is very urgently required for repairs?—Yes.

33. Have you represented that at all to your superiors?—Yes, and they have represented it further on.

34. Have you lately been troubled much with hot boxes?—We got very few during the Christmas holidays. Last week we had a pretty good run of hot boxes on loaded wagons going north.

35. The period which the L and M wagons are allowed to remain out of the shops without lifting is three years as against two years. Has that made any difference, in your opinion, in the running and the hot boxes?—No.

36. Do you consider the period of three years excessive or reasonable?—I consider it is quite reasonable, because previously the wagons were lifted in two years, and after making a thorough examination we would find at times that they were fit to run for another twelve months. It depends on the amount of work they are doing. Sometimes they get side-tracked in the country, and one wagon might not in that case do the amount of work another wagon does.

37. You do not think the lengthening of the period will result in the deterioration of the stock?—No, I do not.

38. *Mr. Marchbanks.*] Have you had many broken draw-bars coming in on running trains—I do not mean from shunting?—Five during the last twelve months on running trains.

39. Have you much damage done to the head-stocks?—With rough shunting in the yard, but not on running trains. I prepared a record of the damage to the head-stocks through rough shunting.

40. Have you noticed many axle-boxes canted?—Very few. I have seen two wagons since last November which were overdue for lifting and repairs and for closing of the jaws.

41. Do you find many axle-boxes broken?—About two a week. In the case of any axle-box broken it is sent to the shop, but some can run.

42. Do the train-examiners see every draw-bar?—Yes. There are six train-examiners at Palmerston North, and their hours are as follow: No. 1, 2.30 a.m. till 7.30 a.m., and 8.30 a.m. till 11.30 a.m.; No. 2, 7.30 a.m. till 12.15 p.m., and 1 p.m. till 4.45 p.m.; No. 3, 7.30 a.m. till 12 noon, and 1 p.m. till 5 p.m. (siding man); No. 4, 8 a.m. till 1 p.m.; 2 p.m. till 5.30 p.m.; No. 5, 8.45 a.m. till 1 p.m., and 2 p.m. till 6.30 p.m.; No. 6, 3.30 p.m. till 5.30 p.m., and 6.30 p.m. till 12.30 a.m., or finish.

43. They actually look at every draw-bar spring?—Yes, and every axle.

44. How many vehicles go through that yard, on an average, per day?—I got the number from the Goods Foreman, who said that last season the average per day was about nine hundred, but this year it has been a bit short of that.

45. *Mr. Maxwell.*] Have you ever noticed that pieced springs break up very much more in shunting?—Not if they are put in properly. [Witness demonstrated with two pieces of draw-bar springs produced.] The collar is put on first and then the spring is put in in position and set in one another. If you cramp that up and reduce it by half an inch, bringing it from 7 in. to 6½ in., and tighten the draw-bars on a continuous draw-gear or long draw-bar, you will not find that spring will break up, or very rarely, because a spring in that position is almost as good as a complete spring. We have done this for years. Even on wagons with one brake in the spring we have washered up the draw-bar, and that wagon has run for a considerable time; but when the draw-bar spring had two pieces in it it usually comes in and we put another new one in.

46. You very seldom find that two pieces break up further?—Very, very seldom.

(Witness called by the Commission.)

ALBERT JOHN EARNEY SWORN and examined. (No. 39.)

1. *Mr. Myers.*] What are you?—Train-examiner at Napier.

2. How long have you held that position?—Twelve years, in Napier all the time.

3. Are there any other train-examiners there besides yourself?—Yes, my mate, who is junior to me. I am in charge.

4. Are all the trains that go through Napier examined?—Yes, they are examined at Napier by either myself or my mate.

5. You are under the Car and Wagon Inspector at Wellington, Mr. Kelly?—Yes.

6. Do you find it necessary to send many vehicles into the shops at Napier?—No, not many—on an average I suppose about ten wagons a week go in from my mate and myself.

7. And how many carriages?—We do not send a carriage in unless for a general overhaul, or unless it is overdue for lifting. There are no minor repairs of carriages in the workshops: we do the minor repairs for the carriages in the yard.

8. What about the minor repairs to wagons?—We do those occasionally in the yard, but we are placed in an awkward position, because we are practically working the job with one man. During the two hours we are together we have four trains in and four trains out: that does not give us much time to do many minor repairs, but just light repairs such as a bolt wanted or something like that.

9. Therefore most of the repair wagon work goes into the shops?—Yes, we do the car work.

10. Do you keep a supply of spares at your siding?—Yes.

11. *The Chairman.*] What was the condition of the stock generally at Napier last July?—I do not think there is anything to query about the stock since I have been in charge of Napier. It has been kept well up to the mark. It was in a good condition last July: no one could say otherwise.

12. Was it in good condition also three years ago?—Yes.

13. Is there any difference one way or the other in the condition at the present time and the condition three years ago?—No, I would not say there is. It is just about the same as it was then. There is nothing to complain about.

14. Have you been in the habit of using pieced draw-bar springs?—Yes, in wagons, but not in carriages.

15. Are you still continuing the use of pieced draw-bar springs?—No, because I have a big supply of the new springs, and have stopped the practice of using pieced springs.

16. There was a circular issued to the effect that you should piece the springs?—Yes.

17. Has that circular ever been withdrawn?—No, not to my knowledge.

18. How is it you have not gone on using pieced draw-bar springs?—Because Mr. Johnston, of the Workshops at Napier, knew I had some two-piece springs on my siding, and he wanted them, so I sent them all up to him.

19. That is, since you did mostly carriage work?—Yes.

20. Do you consider the practice of using pieced draw-bar springs safe?—Absolutely.

21. Do the pieced springs stand as well as the whole springs in actual work?—I find they do, sir.

22. How many broken draw-bar springs do you get in a week, say, in examination?—I should say, on an average, we get about nine a week just on wagons.

23. Do you get many broken bearing-springs?—I have never struck a broken bearing-spring in my life—not at Napier.

24. You think there is no cause for alarm as to the condition of the rolling-stock on the Napier Section?—I am absolutely certain of that.

(Witness called by the Commission.)

WALTER GUARD WATSON sworn and examined. (No. 40.)

1. *Mr. Myers.*] You are train-examiner at Taihape, are you not?—Yes. I have been train-examiner there for five years.

2. Were you a train-examiner before that?—Yes, at Palmerston North and Wellington. I have been a train-examiner altogether for about fourteen years.

3. And altogether how long have you been in the service of the Railway Department?—A little over fifteen years.

4. Are there any other train-examiners at Taihape?—Yes, there is another besides myself.

5. And I suppose the two of you do the train-examination work in alternate shifts?—Yes.

6. Do you also do the repair work?—Yes, just the two of us.

7. What is the nearest shop to Taihape?—East Town Workshops.

8. And when you have any vehicle which requires to go into the workshops, do you send it to East Town?—Yes, unless we are authorized to send it to any other shops.

9. Are all the trains which pass through Taihape examined?—No, not by the train-examiners. There are two or three examined by the drivers—two goods-trains; but all the others which pass through Taihape are examined.

10. Do you keep a supply of spares at Taihape, as they do at other examining stations?—Yes, we keep supplies there.

11. *The Chairman.*] You say that the drivers examine two goods-trains going through Taihape?—Yes.

12. Do they go through at night-time?—Yes, when we are off duty.

13. You could form a general idea as to the condition of the rolling-stock at the present time. What condition would you say the rolling-stock that passes through Taihape is in as a rule?—I should say it is in very good condition just at the present time.

14. What condition was it in last July?—In good condition.

15. And three years before that?—It was in a good condition then, but I think it has been improved since then.

16. But not as good as it is at the present time?—No.

17. Do you find many broken draw-bar springs?—Yes, a good quantity.

18. Roughly speaking, how many a week would you and your mate stop?—I really could not say—it is hard to form an average. I should say about fifteen or sixteen draw-bar springs a week on that section. I have found the one piece broken, but not very badly.

19. Out of how many vehicles would that be?—I suppose a thousand vehicles.

20. Do you find broken bearing-springs?—I have not found a broken bearing-spring since I have been on the Main Trunk line—that is five years.

21. Do you use pieces in repair draw-bar springs—make up pieced springs?—Yes, make two pieces up to 6 in. or 7 in.

22. Do you ever put in any more than two pieces?—I have never seen it done where I am stationed.

23. How do those pieced springs stand?—If the draw-gear is properly tightened they stand very well. I have never seen them broken again. I have caught them up a month or so afterwards, and they were still standing up to their work as long as the draw-gear was tightened up.

24. Are they more likely to break, in your opinion, than a whole spring?—Yes, I should say they would be weaker than a whole spring.

25. But they appear to be doing their work?—The ones I have noticed have stood up to their work very well as long as the draw-gear is properly tightened.

26. Do you come across any draw-bars broken in service on the main lines—not in shunting?—I have only had one case of it since I have been in Taihape, and that was only a fortnight ago.

27. Whereabouts was the draw-bar broken?—Just from the square to the head—behind the head running on to the square.

28. Right outside the buffing-head?—Yes.

29. Have you found many broken axle-boxes on the inside?—No.

(Witness called by the Commission.)

ERNEST WILMOT SMITH sworn and examined. (No. 41.)

1. *Mr. Myers.*] You are train-examiner at Woodville?—Yes, and I have been there for eleven years.

2. Are there any other train-examiners at that station?—Yes, two others besides myself.

3. Are there any lifters?—Well, they are train-examiners, but we take it week about on the repair siding, and, of course, the third man is doing lifter's work.

4. The three of you are classed as train-examiners, and you all do repairing-work?—Yes.

5. Do you find much repairing-work to do on the siding at Woodville?—Yes, we stop a lot of repairs that can be effected there, and those that require tradesmen, of course, are sent into the shops.

6. You have a good many trains passing through Woodville during the course of the twenty-four hours?—Yes, somewhere about twenty, roughly.

7. Are all those trains examined at the Woodville Station day and night?—Yes.

8. And it is the duty of the train-examiner to stop any vehicle which should not be allowed to run any farther?—Yes, certainly.

9. Do you send many vehicles to the shops from Woodville?—Yes, a good number.
10. What shops do you send them to?—If the vehicles are empty we consign them to Napier, but if loaded they are consigned to the nearest shop when empty.
11. Do you put any liners in the axle-boxes if required?—No, we have not done that at Woodville, but I have seen it done. If any have required liners I have sent them to the shops.
12. *The Chairman.*] Do you think the lining-up of axle-boxes is a desirable practice?—No, I do not care for it myself, but when in the Petone shops I found the practice there was to take the horn-plates off and fill them out.
13. In what condition would you say the stock passing through Woodville is at the present time, generally?—I should say it is in very good condition.
14. And last July was it in the same order and condition?—Yes.
15. And take three years ago, what was the condition?—In good order.
16. How long does your recollection take you back at Woodville?—I have been there about eleven years.
17. Do you consider the stock any better or worse than it was eleven years ago?—If anything I should say it is better, because the facilities for repairing the vehicles are improved, while there are improved buffer-cramps, trap-doors, improved axle-boxes, and so on.
18. Are any vehicles which are considered unsafe to run allowed to run?—No, I do not know of any case. I would not take the responsibility myself. If there was any doubt at all in regard to any vehicles I would take them off the train.
19. Do you find many broken draw-bar springs?—Yes, a good number.
20. Approximately, how many a week do you find?—I really could not say. There are a good many broken, and when fastening them up it is hard to say whether they have been recently broken or pieced.
21. In replacing broken springs, do you use pieced springs?—Yes, in the case of wagons.
22. Does that make a satisfactory job?—No, I do not think so. It may be all right for the time being, but it is not a lasting job, in my opinion.
23. Do you find the springs break again?—Yes, I do find them break again.
24. Do you think you get more breakages in the case of pieced springs as compared with whole springs?—Yes, I am quite sure of that. The ragged ends are broken off the pieced springs, and that allows play, and with the seesawing that goes on it is not long before they are into pieces.
25. Do you meet with many broken bearing-springs?—No, very few. With the laminated springs you may get one with one leaf broken and the spring still holds good; but with coil springs, if they break as that one on the table is broken they require to come off the train there and then.
26. You allow a laminated spring with one leaf broken to run?—It would depend on the load and the look of it. It would not be allowed to run for good, but to run into the shops.
27. *Mr. Marchbanks.*] Do you come across many broken draw-bars on running trains?—No, not many, but we have had some.
28. Do you notice them when they come into Woodville?—Yes.
29. And in your examination do you actually look at all the draw-bar springs in every train going through?—Yes.

(Witness called by the Commission.)

EDWARD SAMUEL CREELMAN sworn and examined. (No. 42.)

1. *Mr. Myers.*] You are a train-examiner stationed at Cross Creek?—Yes, and I have been stationed there about eight years and a little more.
2. Are you the only train-examiner there?—No, there is one other besides myself.
3. Do you examine all trains passing through either day or night?—Yes.
4. Do you effect repairs at your station?—Yes, when they are ordinary minor repairs.
5. Do you find much repair work to do there?—No, not a great deal.
6. Not in connection with the trains that have to come over the hill from Wellington?—No, not a great deal.
7. When you find a carriage or vehicle requiring repairs which you cannot effect, do you send it to the shops?—Yes, to Petone.
8. Do you find it necessary to send many carriages to the shops?—No, a few wagons, but very seldom carriages.
9. Do you keep supplies of spares at Cross Creek?—Yes. We get them from Petone through the Car and Wagon Inspector at Wellington.
10. Do you ever run short?—Occasionally; but it must be three years now since we ran short. We have not been short during the last three years.
11. Have you had any trouble or difficulty in obtaining your supplies from Petone?—No.
12. *The Chairman.*] In what condition do you find the stock that runs through Cross Creek?—In good condition.
13. Everything is perfectly safe?—Yes.
14. In what condition was it three years ago?—Fairly good condition. We used to put springs in in two pieces.
15. Do you consider the stock now to be in better condition than it was three years ago, or worse condition?—In better condition.
16. You say you used to put in two pieces of draw-bar springs: have you discontinued that practice?—Yes, because we have plenty of springs on hand now.
17. Did you receive any instructions to discontinue the practice?—Yes, from the Car and Wagon Inspector.

18. What was the reason for using the pieced springs in the first instance?—A shortage of material.

19. And when the Car and Wagon Inspector instructed you to put pieced springs in, what was the condition of things then—were there plenty of springs available at that time?—No. We put the pieced springs into wagons, but not cars. It would be between two and three years ago since we discontinued doing so.

20. You have not used any pieced springs during the last two or three years?—No, none at all.

21. Have you found any broken bearing-springs?—No, not one.

22. *Mr. Marchbanks.* Do you examine all draw-bar springs and see every draw-bar?—Yes.

23. Do you see many broken draw-bar springs?—Not a great many.

24. You or your mate examine the spring on every vehicle?—Yes.

25. Do you get any broken draw-bars?—Occasionally.

26. On running trains?—Yes.

27. What is that caused by?—I think it is the wear-and-tear over the Rimutaka Incline.

28. Do you get any broken draw-hooks?—Very seldom.

29. Do you get any axle-boxes canted?—No, not many.

30. Or any hot axle-boxes?—Not many.

31. *Mr. Maxwell.* When you find wagons with pieced draw-bar springs passing through do you remove them?—Not if they are pieced properly. We do not put fresh springs in if the draw-gear is tight and everything in good condition.

32. You do not remove the pieced springs when you find them in the wagons?—No, not if they are in good order.

(Witness called by the Commission.)

WILLIAM SEATON SWORN and examined. (No. 43.)

1. *Mr. Myers.* You are a train-examiner, are you not?—Yes, I was until three years ago, when I was appointed leading lifter at the Lambton Station.

2. Have you any other lifters associated with you in the work there?—Yes, sometimes there are three and sometimes four.

3. And how many examiners apart from the lifting staff?—There are five at Lambton and four at Thorndon, and two lifters on the siding at Thorndon.

4. So that you have an examining and lifting staff at each of the two stations?—Yes.

5. There is a good deal of repair work done at both stations, is there not?—Yes.

6. What sort of a staff have you at Lambton—is it a staff that can cope with the work numerically?—No, it is not large enough. The facilities are not sufficient to cope with the work; there is not sufficient accommodation. We could, of course, get along better with a big central station.

7. Well, apart from want of accommodation, which, of course, everybody knows exists, what do you say about the staff there as to their ability?—The staff is all right—it is a good staff. I have nothing to complain of in that respect.

8. But you do complain about the accommodation?—Yes.

9. Is there any other complaint you have?—No.

10. Would it be possible to employ more men efficiently, having regard to the existing accommodation?—Yes, I think it would be.

11. There is a lot of work to do there?—Yes, a lot of work.

12. Who decides what work is to be done at the siding and what work is to go into the shops?—I generally decide that, but when it is an exceptional case I bring it under the notice of the Car and Wagon Inspector.

13. Are you not in a position to see that the work does not become congested in the yard—that so much of the work goes into the shops as will avoid congestion in the yards?—I think they are about the same in Petone as we are here: they are congested there. Usually when Petone wants work the Car and Wagon Inspector gives me a ring, and also when they are congested out there he notifies me.

14. *The Chairman.* You are leading lifter at the Lambton Station?—Yes.

15. And you have been there for three years?—Yes; but I have been in the service for twenty-odd years.

16. As to the present condition of the rolling-stock, what would you say as to its condition as it goes through your hands?—It is in fairly good order.

17. How does it compare with the condition it was in three years ago?—It compares very favourably.

18. Have you known it to be in better order at any time?—No, I cannot say I have, other than the draw-bar springs.

19. You said in reply to Mr. Myers that you find your present staff not quite sufficient to cope with the work?—Yes, quite so.

20. Have you facilities for employing more men there—is there room to get them in?—Yes, I think there is, but I am not certain. It would certainly be better if the facilities were greater.

21. It rests with you, I understand from your examination, what vehicles are to be repaired in the yard and what are to be forwarded to Petone?—Yes, I usually do that.

22. Could you not ease the pressure which exists at the present time by forwarding more vehicles out to Petone?—The position is that Petone is in the same position as we are here. I have brought it under the notice of the Car and Wagon Inspector, and he has asked me not to send

any more to Petone as there was congestion there already. He usually gives me a ring on the telephone when they want more vehicles, or when to hang off. When we cannot send them to Petone it means we have to keep them here.

23. Although you say you are pushed at Thorndon and Lambton, yet you state that the stock is in good order?—Yes, compared with previously.

24. And your opinion is that it is in good order?—Yes, other than the draw-gear.

25. You do not consider the draw-gear to be in good order?—No, the draw-gear is not in good order. There could be no complaints otherwise.

26. In what way is the draw-gear not in good order?—In the springs the draw-gear is very slack in lots of cases owing to the broken springs.

27. Are you not replacing those broken springs?—Yes, as fast as we can, but owing to the staff we cannot really cope with it.

28. You cannot overtake the work?—No.

29. Are the men working well and good men?—Yes.

30. Have you represented the fact that you cannot overtake the work to your superiors?—Yes.

31. I suppose there is a difficulty in getting more men owing to the war?—Yes, I think that is the trouble. In fact, the Car and Wagon Inspector has told me to make the best of it and carry on as well as we could, and we have endeavoured to do that.

32. The impression left upon my mind by your evidence is this: that there is urgent want for more repairing facilities at Thorndon and Lambton?—Yes, that is right.

33. And that there is a shortness of hands which is probably due to the war conditions?—Yes.

34. Is that the impression you wish to convey to me?—Yes, that is right.

35. With regard to draw-bar springs, are you replacing the broken draw-bar springs by pieced springs?—When we have no others. When the new stock is out we have to use them.

36. Have they been fairly satisfactory or not?—Yes, fairly satisfactory.

37. Have you noticed any greater number of breakages in the pieced springs than in the whole springs?—Oh, yes, that often occurs.

38. You think they are more liable to break again?—Yes, I think they are more liable to break.

39. Is the shortness of springs the only reason why you have used pieced springs?—Yes.

40. You have never used them when you have had whole springs available?—No; I have always used new springs except when there are no new ones on hand.

41. Are you much troubled with hot boxes?—No, not a great deal of trouble considering the quantity of vehicles that come into Wellington.

42. Does any particular type of box get hot more readily than another?—No.

43. Do you have any broken bearing-springs?—On occasions we have, but they are renewed.

44. Are they the laminated springs?—All kinds: laminated, liptic, coil springs—three classes.

45. Which kind do you find breaks the most?—The coil springs.

46. Are there any other stores you are short of besides springs?—No. I always get a supply of what I ask for other than springs, and the Car and Wagon Inspector told me that it was impossible to get them at present.

47. Have you found there is any tendency to restrict your activity in regard to repairs?—No, none whatever.

48. *Mr. Marchbanks.*] Can you say roughly how many draw-bar springs you put in in a period on the average?—I could not exactly say, although I generally render a return to the Car and Wagon Inspector each month. I suppose we put in anything up to one hundred or two hundred in the twelve months.

49. Would that be on wagons which you repaired?—On all vehicles.

50. Can you say roughly how many wagons and cars you put through your hands in a month on the average?—From forty to sixty a month—or the four weeks.

51. That would be 120 springs if you put a spring in each?—Those would be for all repairs. Some of them are for light repairs and would not require springs at all.

52. Do you get many canted boxes?—No, not a great many.

53. Have you noticed which style of box cants the most, the one with the two-coil spring supported on the casting, or the one with the two springs resting on the box in the goods stock?—No, I have not noticed any difference.

54. Do you get any broken draw-bars coming in on running trains?—Yes, occasionally, but not a great number. I could not estimate exactly how many we get in four weeks.

55. Is there much damage to the head-stocks?—No, not much.

56. Have you ever had instances of the brasses turning in the boxes?—Yes, we have had instances of that in the case of derailments.

57. But I mean on running trains?—No, I cannot say I have heard of them on running trains.

58. Have you ever detected a broken axle?—No, never.

59. Or a broken tire?—No, never. I have had tires loose or showing signs of being loose, and we have taken action straight away.

60. *Mr. Maxwell.*] I think you said that you put in up to two hundred draw-bar springs in a year?—Yes.

61. That is only four a week?—I could not say exactly without reference what quantity is put in. The number would be more than four a week, but I could not say how many. Sometimes we put in twenty or twenty-five in a week. It depends on the staff. Sometimes the staff is depleted a bit, and then, of course, the work does not go on.

62. When you get pieced springs in two pieces like that produced, and they are in good order, do you remove them?—No.

63. You do not remove them when they are in good order?—Yes, we remove them if they are broken if we have new ones to replace them with.

64. I do not mean broken springs, but where a spring is packed up properly and put in purposely and is in good order, do you remove that when it comes into your station?—Not recently, but in previous instances we have.

65. *Mr. Myers.*] You told the Chairman that the pieced draw-bar springs are fairly satisfactory?—Yes.

66. When you say that in many cases the draw-gear is slack owing to the broken springs, are you speaking of broken springs as distinguished from pieced springs?—Oh, yes. In the case of a broken spring being put in there is a piece broken off the spring. That would leave it slack at once, and it might only run as far as Kaiwarra and a bit get knocked off.

67. That applies to new springs also?—Yes.

68. Do you allow vehicles to run with slack gear?—No, they are always fitted with the standard 7 in. spring.

69. I do not understand what you mean when you say the draw-gear is not in good order owing to slackness of the springs?—We have a number of vehicles on which they only want to tighten the draw-gear up.

70. Do you tighten the draw-gear up?—Yes, we never let it go.

71. I do not quite see what you mean when you say the draw-gear is not in good order if, when you notice anything wrong, you put it right?—I refer to the vehicles that are out of action. Those are the ones I am referring to—not the ones which are running. Any vehicle that is defective we stop at once and have it repaired.

72. You are only speaking of wagons that are awaiting repair?—Yes, that is so.

73. You might say the same with regard to a number of vehicles which had something else wrong with them—that that something else was not in good order?—Oh, yes, but my reference was particularly to draw-bar springs, because we have been so short of them.

74. How long have you been short of them—have you been short during 1916?—Oh, no. I think it was about the middle of 1914.

75. And for a little while in the early part of 1915?—Yes.

76. Is that the period you are speaking of?—Yes.

77. Then do you say the draw-gear is not in good order now?—On account of the pieced springs being put in the work has got ahead of us, and we are not able to overtake the amount of work on hand to bring those draw-bar springs up to the required standard.

78. That means you have to keep a number of vehicles out of action?—Yes.

79. Does it mean anything more than that?—Oh, no.

80. You always have a certain number of cars out of action for repairs of some kind or another?—Yes, that is so; but we have a good number just now.

81. Why, have you got a rush of repair work, or what?—No, we are not in a position to cope with the work.

(Witness called by the Commission.)

CHARLES HENRY BURRIDGE sworn and examined. (No. 44.)

1. *Mr. Myers.*] What are you?—Train-examiner at the Lambton Station.

2. Who is the leading train-examiner there?—We have a leading lifter, Mr. Seaton.

3. Is he the leading man amongst the examiners and lifters?—Yes.

4. How long have you been train-examiner at Lambton?—About eleven or twelve years. I have been there about thirteen years and a half.

5. *The Chairman.*] With regard to the condition of the rolling-stock passing through your hands, what condition would you say it is in now?—Well, good.

6. What condition was it in six months ago?—About the same condition.

7. And what condition three years ago?—It is in better condition to-day than it was three years ago.

8. Have you at any period known the rolling-stock to be in better condition than it is now?—No, I cannot say I have.

9. What is the position at the Lambton siding—have you all the facilities which you require for lifting?—Yes, as far as I am concerned. My work consists of examining trains both in and out. I do not have any work to do in connection with repairing so far as the lifting is concerned.

10. I understand they are rather cramped as regards repairing-work?—Yes, they are cramped.

11. When examining trains do you find many broken draw-bar springs?—No, not many.

12. How many a week do you find?—That is a big question. I suppose I find about a dozen or so left running. Some, of course, are broken; and we have to get them taken out, so the cars or wagons are sent over to the repair siding; but there are draw-bar springs with just a broken piece in the centre coil, and if those are tightened up they are good enough to run.

13. Are those broken springs or pieced springs?—Sometimes they are broken and sometimes pieced springs, but there are no pieced springs in cars. When they are broken in the centre coil, with just a couple of washers put on and the draw-gear tightened up, they are fit to run again in the case of wagons.

14. You never allow them to run when broken if they are slack?—Not when we have a chance to catch them and get them repaired. Very often you will get a through train when you cannot stop a wagon that has a broken spring and the draw-gear a little bit loose or slack. Very often the wagons are loaded with perishable goods, and you cannot hang them up while the wagon is loaded, so you have to catch it on the return.

15. You make a note of it and pick it up later on?—Yes, or notify the next examining station.

16. What would you do with an empty wagon with a broken draw-bar spring?—If the draw-gear was slack we would take it off and get it repaired.

17. Have you had much to do with repairing broken springs?—I do not do much repairing such as repairing springs.

18. In inspecting have you found pieced springs break further?—No, not often, unless the draw-gear begins to get a little slack, and then they might break half a coil. They seem to stand just as much strain as a complete spring if the draw-gear is kept tight.

19. Do you find many broken bearing-springs, or any?—Broken bearing-springs in cars very seldom, and also seldom in wagons.

20. What do you do when you find one?—Have it repaired right away, whether it be on a car or a wagon.

21. Are the bearing-springs you find broken laminated springs or coil springs?—The leaves in the laminated springs break easier, perhaps, than in the case of the coil springs. We get more laminated springs than coil springs. We very seldom get a coil spring broken under the bogie.

22. But in the case of wagons?—The wagon bearing-springs do not break very often.

23. Have you found many hot boxes?—No, not many on the cars, and I do not examine many wagons, as I happen to be on the passenger side.

24. *Mr. Maxwell.*] In regard to slackness, do you sometimes find that the springs are perfectly sound but there is slackness which requires washering up?—Yes, we do, and we put washers on and tighten them up.

(Witness called by the Commission.)

JOHN ZEALANDIA HOBBS sworn and examined. (No. 45.)

1. *Mr. Myers.*] You are a train-examiner?—Yes, at Thorndon; and I have held the position for the best part of a year.

2. Who is the leading hand there amongst the examiners and fitters?—There is practically no leading train-examiner there. The train-examiner who takes over the duties is in charge when he takes over the shift, but he reports to the Car and Wagon Inspector. The Car and Wagon Inspector's representative is Carpenter O'Loughlin, at Thorndon, from 7.45 a.m. to 5 p.m.

3. How many examiners are there at Thorndon?—Three on the main line, and one examiner and one lifter on the car-siding: that is on the main line. I have been looking after the mail-trains longer than one year—about two and a half years repairing and examining all mail-trains in new car-siding, Thorndon, and one year on main line examining trains in and out of station.

4. You have been at the station as examiner for three or four years?—Yes.

5. Are all the trains in and out examined?—Yes, by myself or one of my mates.

6. Do you do any repair work yourself?—Yes, on the passenger-cars.

7. You have nothing to do now with the wagons?—Not unless it is an urgent vehicle that has to go out urgently.

8. But prior to the last twelve months did you have to do with the wagons?—No; it is four or five years since I had to do with wagons: I examined them into the station and out.

9. *The Chairman.*] It is suggested that portion of the rolling-stock is in a dangerous condition: have you come across any in a dangerous condition?—Well, any that has been in a dangerous condition has been sent for repairs to the Petone shops—it is stopped at once, and then it would not be allowed out again in a dangerous condition.

10. What is your opinion as to the present condition of the rolling-stock at Thorndon which passes through your hands?—It is very good.

11. Have you ever known it to be in better condition?—No.

12. What condition was it in last July: any different to what it is now?—No, I could not say it was. There have been various improvements in the last two or three years.

13. Say, three years ago, what condition was it in?—Practically the same as it is now with the exception of a few improvements in the undergear.

14. With regard to bearing-springs, do you come across many that are broken?—I caught one on the Main Trunk train with the bearing-spring broken. It was a coil spring, and the vehicle was sent to the repair siding to be supplied with a new spring. Laminated bearing-springs are sometimes found with a leaf broken—general average about four or five a year on passenger vehicles, but coil bearing-springs are very rarely met with on cars.

15. With regard to draw-bar springs, do you come across many that are broken?—Yes.

16. What is done then?—If the draw-bar is loose on the wagons they are sent to the repair siding for repairs. If they are broken badly the vehicles are repaired by the men at the siding—by the train-examiners on duty.

17. If the draw-bars are loose they are repaired at once?—Yes, and the springs are renewed if necessary.

18. Pieced springs are used, are they not?—On wagons, but not on Main Trunk carriages or passenger-cars.

19. Have you all the facilities required for the carrying-out of your work?—Our work is to see them in and out, and the repair work is done mostly by the lifters at Lambton.

20. But in carrying out your own examination work?—Yes.

HENRY ARCHIBALD recalled. (No. 46.)

1. *Mr. Myers.*] When you were at Picton did you keep a record of all the repairs effected there?—Yes.
2. And that record, I suppose, is available now?—Yes.
3. Did you include in your record all new bearing-springs that you put in?—Yes.
4. So that we can see from the record when it is produced here how many new bearing-springs have been put in, say, during the last three years?—Yes, you will be able to get an accurate account.
5. The reason I am asking you is that it is thought you were not correct this morning when giving evidence as to the number of broken springs that came into the shop?—That is quite correct. When I got outside and started to think I came to the conclusion I could not recollect one bearing-spring broken; but you will be able to get an accurate account from the books at Picton.

SIDNEY PERCIVAL EVANS recalled. (No. 47.)

1. *Mr. Myers.*] Were you present when Mr. Seaton was giving his evidence?—Yes.
2. Is there anything you can say with regard to the question of want of accommodation and the want of staff for effecting repairs at Lambton and Thorndon?—Well, I can say that the accommodation at Lambton is at present somewhat limited, but that is a matter that is now being attended to. Reports have been made and certain alterations have been authorized which are to have the effect of increasing the accommodation, but in the meantime I do not consider there would be any advantage in sending any additional staff there. The staff is quite sufficient for the accommodation they have.
3. And what will be the position when the recommendations are carried out and they have the increased accommodation?—Then it will be a matter to consider whether additional staff could not be utilized to advantage.
4. But that is a matter that is receiving attention?—Yes, that is so.
5. Is that at Lambton or Thorndon, or both?—At both stations. Lambton is a depot where repairs are effected and where a large shop is being erected.
6. And do you think the accommodation which will be provided when the recommendations are carried into effect will be quite sufficient?—Yes, it will be quite sufficient. The work is in hand now. They are just commencing it, and I have been down to the yard to see how the work is progressing.
7. Is the staff you have at present at Lambton and Thorndon as big a staff as can be used with the present accommodation?—Yes. There would be no advantage in having an increased staff until we have increased accommodation. I think the staff there is rather stronger numerically than at Auckland—in fact, I am sure we have a larger staff at Lambton.
8. I suppose you are looking forward the same as all of us to having increased facilities in all directions when you get a new central station?—Yes. Our accommodation is limited, and that is a matter that is being dealt with. It is simply a matter of money, I suppose, but I think the work has been approved. I am speaking of Petone and other places.
9. *The Chairman.*] What is the nature of the new accommodation that is being added?—A new enlarged shed. I think they will make use of the old one, and add to it so as to provide accommodation for about twice the number of wagons.
10. The leading lifter said he was extremely short-handed?—He has three lifters under him, and a greater number than that could not be employed profitably under the present conditions.
11. They could when a new shed is built?—Yes, possibly they might be. We might have occasion to add to the staff, but at present they simply have to do what they can, and then the balance of the stock is sent to Petone.
12. Is it correct that the work is also congested at Petone?—There have been occasions when we have been slightly pushed to get wagons through, but we have always been able to do it.
13. The statement was made that the work was getting very much behind?—That is not correct.
14. It was also said that at Palmerston the facilities are far too small?—That is true. That is a matter that has been represented, and we are looking forward to the work being put in hand there. They certainly want more shed accommodation at Palmerston.
15. The leading lifter said he could not profitably employ more men?—That is so, and practically the same conditions exist at Lambton. It would certainly be unprofitable to employ a larger staff than we have at the present time.
16. The matter of additional accommodation is apparently one of great urgency?—Yes, and I think it is being treated so too.
17. Is the work being put in hand at Palmerston to increase the accommodation?—I could not say exactly.
- Mr. Jackson:* The Palmerston trouble has been represented many times. It is a very awkward yard and very congested, and it means reorganizing the whole station-yards. I believe that is one of the first jobs we intend to put in hand. There are no rails to be got at present, otherwise I think the work would have been started.
18. *Mr. Marchbanks* (to witness).] Is there sufficient siding accommodation at Lambton and Thorndon apart from the other accommodation?—Yes, there is no difficulty with the siding

accommodation. We have not perhaps too much room, but we can always get the number of vehicles in.

19. There will be no difficulty in increasing the siding accommodation?—There is not a great deal of room for additional siding accommodation.

20. I mean, on the north side—there is a fair amount of room?—Yes, they may get more room there, but when this enlarged shed is provided it will be quite sufficient for the number of vehicles required to be repaired there.

The Chairman: Before the Commission rises we desire to ask you, Mr. Myers, if you will put in blue prints of the draw-gears in use in the New Zealand railways at the present time.

Mr. Myers: Yes, we will hand those in.

The Chairman: And also blue prints of the axle-boxes, showing the bearing-springs which you have running.

Mr. Jackson: There may be a little difficulty about that, because some are the very old style of boxes, and I do not know whether we have them. However, I will send along as many as I have.

The Chairman: The Commissioners will now proceed to inspect the stock at Thorndon, Lambton, and Petone, and the repairing facilities at the same places. On Friday the Commission will leave for Picton and Nelson. One of the Commissioners, Mr. Maxwell, will undertake the inspection of the stock on the Picton Section, whilst Mr. Marchbanks and the Chairman will inspect the Nelson Section, Greymouth Section, and if possible the Westport Section.

The Commission then adjourned.

DUNEDIN, WEDNESDAY, 7TH MARCH, 1917.

The Chairman: The Commission will now open in Dunedin, and I will ask the Secretary to read the Warrant. [Warrant read.]

EDGAR ELLIOTT CAREW sworn and examined. (No. 48.)

1. *Mr. Myers.*] You are employed by the Railway Department in what capacity?—Workshops Foreman at Invercargill.

2. How long have you held that position?—Two years and nine months.

3. I suppose you have been in the Railway Department in various places for a considerable time?—Yes, I have been; but I resigned on two or three occasions.

4. Well, taking your present period, how long have you been in the Department?—For twenty years, I think.

5. You have no Workshops Manager at Invercargill?—No.

6. What staff have you there in point of number?—About eighty. It is a repairing staff only.

7. What is the practice in Invercargill with regard to vehicles being sent to the shops—who sends them there?—They are sent by the examiners, but a Loco. 43 is sent on by the Car and Wagon Inspector from Invercargill, and at times the Car and Wagon Inspector sends in vehicles himself.

8. Then they are repaired in the shops?—Yes.

9. And who inspects and passes them out?—The Car and Wagon Inspector.

10. Before he inspects them do you make any personal examination or inspection?—Yes, I go through the stock while it is being repaired, and also while it is ready to be passed out I have a glance round myself to see that everything is right.

11. Then before any repaired vehicle is allowed to go back into service it has a double examination, first by you and then by the Car and Wagon Inspector?—Yes, and also the leading carpenter makes an inspection and supervises the work of the men.

12. What kind of staff have you as far as competency goes?—A really first-class staff. I have no reason whatever to complain in regard to any of them.

13. Will you tell the Commission how the condition of the rolling-stock now compares with its condition when you took charge there two years and nine months ago?—Well, I consider the stock is kept well up to date. Of course, it has increased in quantity, and our output of repairs has increased. Nothing whatever is slummed over; everything is being well attended to.

14. What do you mean when you say that everything is kept up to date?—That the vehicles when they come out are fit for service until an accident may happen, or until the time arrives for lifting and Westinghouse-brake examination.

15. You say it is kept up to date, but can you say anything more by way of comparison with its condition nearly three years ago when you took charge?—Yes; we are putting new standards on in the form of axle-boxes and brasses; the axles are being renewed and replaced; the horns and boxes are being standardized and made stronger, while there is more bearing-surface provided to keep the boxes from canting. We are continually experimenting with springs, and have had several classes of springs to try.

16. Is that practice of standardizing going on all the time?—Yes, all the time.

17. Well, it is suggested that the rolling-stock in New Zealand has deteriorated during the last three years. Is there any foundation for that suggestion so far as concerns so much of the rolling-stock as comes under your notice?—None whatever.

18. Now, in regard to the painting of vehicles what have you to say?—The painting is well kept up. We make a special point of painting the iron wagons. The wooden wagons are very well kept up, and the carriages are well painted outside and varnished inside, and the lavatories well attended to.

19. So far as repairs are concerned have you any restrictions placed upon you? I want to ascertain to what extent you have freedom of action?—There are no restrictions placed upon me whatever. I know perfectly well that if any stock is allowed to go out without special attention I am liable to be “pulled over the coals” for it. I recognize it is my place to keep everything up to date and leave nothing undone which should be done.

20. Have you at any time had any instruction from which it was possible to infer that repairs should be restricted in any way or curtailed?—None whatever. We were informed that it would be necessary to perhaps overlook light trifling repairs such as a cracked plank or something of that sort, but nothing whatever which would interfere with the safety of the wagons or stock.

21. Where did you get that instruction from?—It came from the Locomotive Engineer’s office (when Acting Car and Wagon Inspector).

22. Can you say when it came?—About three months ago.

23. Was that from Mr. Richardson?—Yes, in writing.

24. Have you that instruction here?—No, I have not. That was not the exact language of it, but we were given to understand that we were not to look for too much trouble in that respect, or to go to too much expense.

25. Have you had any instruction, say, since last July to speed up repairs or do more repairs than were previously done?—Oh, no; nothing like that.

26. During your time in Invercargill can you tell us how many, if any, broken axles you have had?—We have had none.

27. Or broken tires?—We had one partly cracked wagon-tire.

28. Do you know how that occurred—whether on the line, on a running train, or in the yard?—I have no idea whatever of that.

29. Have you had any broken bearing-springs?—We have had about six in my time—one on a wagon, four on cars, and one on a double-bogie wagon.

30. Were they broken in service or in the yard?—They were not broken in the yard. I suppose they were broken in service—probably by a shunting derailment.

31. Have you heard of any derailment on the main line which has resulted in either broken tires or broken axles?—No.

32. Have you had many broken draw-bar springs?—Yes, we have.

33. In what class of vehicle do they mostly occur?—In all classes, but principally in wagons.

34. Have you used any pieced springs in Invercargill?—Yes, but only in two pieces.

35. How long have you been using pieced draw-bar springs?—I think, close on twelve months.

36. Have you been using them since last July?—Yes, I think we have.

37. And do you use them now?—Yes.

38. Do you remember how it was you came to use them?—I started to use them on the point of economy. It was not for the want of springs.

39. I wanted to find out whether there was a shortage of springs when you commenced to use them?—I heard there was a shortage in the Dominion, but that did not affect me. I had a stock of them on hand.

40. Did you refer to any one before you commenced using pieced draw-bar springs?—No.

41. You did not refer to the Locomotive Engineer or any one else?—No.

42. How do you find them work?—Exceedingly well.

43. Say, as compared with new complete springs?—I do not know that there is any difference.

44. And you have continued the use of them up till now?—We are using a few of them. We are not making a point of using them right throughout.

45. You have not always got pieces that will suit?—We are using them in conjunction with new springs, and when we have serviceable pieces we make use of them.

46. Have you ever thought or heard it suggested that they in any way prejudice the safety of a vehicle?—I have seen from the papers—

47. That is in connection with this Commission; but I mean, apart from that?—No.

48. Do you keep a supply of spare parts down in Invercargill?—Yes.

49. Have you a Storekeeper there?—Yes.

50. And when you want supplies do you get them from the Storekeeper?—Yes.

51. Do you ever have any difficulty or is there any delay in your obtaining supplies?—There is a temporary delay on occasions, but it is not very frequent.

52. Has there ever been any delay which has caused you any real trouble?—No, none whatever.

53. *The Chairman.*] You say that there is a large number of draw-bar springs broken?—Yes.

54. And that is going on continuously?—Yes.

55. Are those springs replaced in the lifting-sheds—in the shops—or replaced in the yards?—We were replacing them in the shops.

56. And are they being replaced in the yard outside?—I do not know what the other men are doing: all I know is that I am putting them in. I have heard they are doing so, but I cannot say for sure.

57. A lifting-shed is attached to the workshops at Invercargill?—Yes.

58. How many men are employed there?—Six lifters.

59. Do you consider that you are overtaking and replacing those broken springs, or are they being broken faster than you can replace them?—We are keeping well up to date.

60. Just about holding your own?—Yes, just about holding our own.

61. Who decides whether the wagons are to go into the shops or not?—The train-examiners find the defective wagons, and then they are sent into the shops.

62. Have you had to refuse to take wagons?—Yes, I have refused wagons for the simple reason that I have had the yard full. I have sent them on to a loop outside until such time as I was in a position to take them in, but I have overtaken them in a very few days. We can only put through a certain number in a week.

63. Would wagons be sent to you if broken draw-bar springs is the only defect?—In some cases they are.

64. You say you were notified by circular some time ago to overlook minor defects. Was that since the commencement of the war?—Yes, that was quite recently.

65. You are quite certain about that?—Yes. We were to overlook minor defects which were not considered necessary.

66. And you are sure that was quite recently issued?—Yes.

67. You had not received any previous intimation of that character?—No, none whatever.

68. Can you give us an idea of the date of that circular?—I could not give you the exact date, but I think it was between six and eight months ago.*

69. *Mr. Marchbanks.*] How many wagons in a year or in a period do you put through?—On an average, about fifty-two in a week.

70. Do you know the number of broken draw-bar springs you will get in that number of wagons?—No. I could give you the number for a year—or, rather, for so many years—but I do not know the percentage.

71. How many draw-bar springs would a man put in in a day working steadily and taking out the old springs?—I suppose he would be able to treat about ten wagons.

72. That would be twenty springs?—Yes, and two men working together.

73. How many men have you got at that work?—I have two men doing nothing but draw-bar springs, and they do the lot.

74. Do you get many broken draw-bars?—A fair number broken, bent, and damaged.

75. What do you mean by “a fair number”?—I suppose, on an average, two or three a day coming in, but that includes broken, bent, and damaged.

76. What proportion of broken draw-bars do you get?—I suppose one a week, or barely that.

77. *Mr. Maxwell.*] Have you a knowledge of the rules and regulations contained in this book [produced]?—Yes.

78. Has there been any instruction given you in regard to the relaxation of the heading to the rules, which reads, “The first and most important duty of every member is to provide for the safety of the public”?—No, none whatever.

BERNARD ADOLPH WOLFF sworn and examined. (No. 49.)

1. *Mr. Myers.*] You are a Car and Wagon Inspector employed on the Invercargill Section of the Government railways?—Yes.

2. How long have you been so employed?—I took charge on the 6th August last. Prior to that I was a leading fitter.

3. On that section or on a different section?—On the Nelson Section and on the Auckland-Newmarket Section.

4. Will you tell the Commission exactly how far your district extends?—The main line from Clinton to Invercargill, and all branches from and between those two points.

5. What is the distance from Clinton to Invercargill?—I think, sixty-eight miles.

6. And can you mention the total length of your branches?—No, I could not at the moment.

7. Your headquarters would be at Invercargill?—Yes.

8. How many examining stations have you in your district?—Actually three—Gore, Invercargill, and Bluff.

9. And are they the only three stations at which minor repairs are effected?—That is correct.

10. Do you pay periodical visits along your section?—Yes. As nearly as possible I visit all the out-stations once every period of four weeks.

11. In what condition was the rolling-stock when you took over your duties as Car and Wagon Inspector at Invercargill?—In very good condition.

12. What is the condition now?—It has slightly improved by the addition of various improvements that have been put on the stock.

13. Any repairs on your section except minor repairs which are done at the three repairing stations all go into the workshops at Invercargill—is that correct?—Yes, that is correct.

14. Who decides whether the vehicles are to go into the shops?—The wagons passing through the various train-examining depots are examined by the staff, and if they find anything that requires attention they forward the stock to the shops for repairs, at the same time advising me that they have done so, and also advising me of anything that is of a serious nature that may want my special attention.

15. So that you get a record of every vehicle sent into the shops for repairs?—Yes, that is correct.

16. Do you also receive a record from your train-examiners of the repairs which they effect?—Yes, a record is kept of the repairs that are done at the out-stations.

17. And is that sent to you from time to time?—Yes, at the end of every period.

18. So that you have in your office a complete record of all repairs to all your own vehicles?—Yes, all that have been done during each period.

* Actual date, 5th December, 1916.—E.E.C.

19. When you are in Invercargill where are you for the most part employed?—I could hardly say where I am for the most part employed because I am in so many different places during the day.

20. Do you do any inspecting work in Invercargill itself?—Yes, at the station.

21. Then you go to the workshops?—Yes.

22. For what purpose?—For the purpose of “passing out” rolling-stock.

23. Is that all you have to do in the workshops?—Yes.

24. Who is responsible for seeing that the painting work is done when required?—I am.

25. Will you tell the Commission whether there is much painting work being done now in Invercargill?—Yes, the shops are fully employed keeping up the painting of the rolling-stock. When I say they are fully employed I mean they are employed to their fullest capacity keeping the painting up to standard.

26. Is the painting kept up to standard?—As far as the car stock is concerned there may be one or two which may have been a little bit behind, but they will be caught up in the near future. It is not of a very serious nature, and there may be only one or two which may be in need of painting.

27. We have been told by Mr. Carew that pieced draw-bar springs have been used in Invercargill for some time past: do you agree with that?—Yes, that is quite correct.

28. For how long have they been used down there to your knowledge?—Ever since I have been there.

29. And do you know from what you have seen there that they were used there before you went there?—Yes, I should say they were.

30. Had you any instructions one way or the other as to pieced draw-bar springs?—None whatever.

31. Did you use them of your own motion, or was it suggested to you by Mr. Carew, or how did you come to use them?—Well, my staff has never had a shortage of springs, consequently we have never had occasion to piece springs. We have always put whole springs in, as we have always had sufficient for our purposes.

32. I understood you to say that you had used pieced springs?—Not my staff.

33. But they have been used in the workshops?—Yes.

34. The members of your staff do put in draw-bar springs, I take it?—Yes.

35. You have seen vehicles running with pieced draw-bar springs?—Yes.

36. What class of vehicles?—Wagons only.

37. How do the pieced springs work?—Just as well as whole springs.

38. When you have seen pieced draw-bar springs on vehicles have you thought it necessary to take them out?—No, not unless they were in more than two pieces. If they were in more than two pieces I would have them removed.

39. But have you ever seen pieced draw-bar springs that were put in in more than two pieces?—No, never.

40. But you say you may see them in more than two pieces—how does that happen?—Breakages on the road or in the yard.

41. So that you may have broken draw-bar springs, just as you may have whole draw-bar springs, broken in traffic or shunting in two or more than two pieces?—Yes, that is correct.

42. How do you find the work done by your staff at the station?—Splendid. They do the work very conscientiously and honestly.

43. They do it to your satisfaction?—Quite.

44. Do you have any trouble in getting work done at the workshops satisfactorily?—I have never had any trouble. I have had every assistance from the shops it is possible for them to give.

45. You keep supplies of spares at the different stations, I suppose?—Yes, at all the different examining stations.

46. Where do you procure the supplies from?—From the stores at Invercargill.

47. Do you find any difficulty in obtaining supplies?—I have never had any difficulty whatever. Every order I have sent in for springs, I have been in receipt of them within a fortnight.

48. I was speaking of supplies generally?—I have never had any trouble with stores generally.

49. Does your staff put liners in any of the axle-boxes?—Yes, if required.

50. Is that the usual practice, do you know, throughout the railways of New Zealand?—Yes, it has been the practice for years.

51. *The Chairman.*] With regard to draw-bar springs, generally speaking, how are the springs in the vehicles standing—are they breaking?—Yes, you will find a percentage of broken springs right throughout.

52. Is your staff and the workshops staff combined capable of overtaking the repairs to these broken springs?—No.

53. Are the springs breaking more frequently than they did in the past?—Much more.

54. To what do you attribute that?—To the abuse of the stock and not to the use of it.

55. What do you mean by that?—Rough shunting.

56. Is there any great difficulty in keeping up the repairs for other portions of wagons?—No, no difficulty whatever.

57. But a real difficulty exists with regard to the repairs to draw-bar springs?—To keep the stock throughout with complete springs always, yes.

58. Have you always been able to get the wagons which have been marked for repairs, or have the shops been blocked at any time?—Well, we can always keep the shops going with repairing of wagons, and we generally keep a few in hand so that when one string is passed out there is another string of them ready to pass in; but we have never been actually blocked in regard to putting wagons into the shops. If it were not for the system of having the strings of them that would happen.

59. Do you consider the accommodation the shops have is sufficient for dealing with the work if we eliminated the question of the draw-bar springs?—Yes.

60. Your idea, I take it, is that the rough shunting has piled up the number of broken draw-bar springs in a manner which you find exceedingly hard to overtake?—Yes, that is correct.

61. You spoke of the painting of car stock, but not of the painting of wagon stock. In your opinion has that been sufficiently well kept up?—So far as the wooden stock is concerned we do not pay the same attention to it in regard to painting as we do in regard to the iron stock, because the iron stock rusts. The oxidization must be prevented. The only way to do that is to scrape it and cover it with paint, which is better for the life of the wagon.

62. You hardly answered my question. I asked you if the painting of the wagon stock is being kept up?—Yes, to a very great extent. It is impossible to keep the whole of the stock well painted.

63. You mean that special attention is being given to iron trucks?—Yes.

64. *Mr. Marchbanks.*] Can you say approximately how many wagons you have on your section altogether?—No, I could not, because they vary so. I can only give you our approximate triples. We have 1,505 that I must account for every year. That applies to wagons.

65. That is 1,505 triple valves on the Westinghouse brakes?—Yes, four-wheeled wagons.

66. What percentage of those would you expect to have broken draw-bar springs, judging by the inspection in the Invercargill yard?—About 15 per cent., roughly speaking.

67. How many draw-bar springs can a man put in in a day—two men working together?—It all depends on the conditions. If you have room to work properly the men would do more, but if the room is limited the work would be restricted.

68. Say, with the use of a good long siding?—I could not answer that offhand. I should think, about half an hour per wagon for the two springs.

69. That would be sixteen in a day for two men?—Yes.

70. *Mr. Maxwell.*] Who is your immediate superior officer—to whom do you report?—Mr. Richardson, Locomotive Engineer.

71. You do not come under the Workshops Manager at all?—No.

72. I did not know that your men would be doing wagon-painting?—My men do not do wagon-painting.

73. If your men cannot do the springs, and it is necessary that the wagons should be painted too, do you send them to the shops?—Yes, but not in every case. We do not send all the wagons to the shops which only require springs; we do what we can with our own stock.

74. Supposing you cannot do what is necessary, what do you do then?—Send the vehicles to the Invercargill shops.

75. Or to Hillside?—No, never to Hillside—only to Invercargill.

76. When you find you cannot get any further than what your men are capable of doing, then you pass the wagons on to the shops to have the springs fitted?—We do as many as we can ourselves, and then those we cannot do are passed into the shops.

(Witness called by the Commission.)

EDWARD MCKITTERICK sworn and examined. (No. 50.)

1. *Mr. Myers.*] You are a train-examiner stationed at Gore?—Yes. I have been there just on five years.

2. Had you had previous experience as a train-examiner?—Yes, three years at Clinton.

3. And how long altogether have you been in the service of the Department?—Just on fourteen years.

4. I suppose you had been in the workshops before you became a train-examiner?—Yes, for seven years.

5. *The Chairman.*] Comparing the condition of the rolling-stock to-day with its condition, say, three years ago, generally speaking, what is your opinion as to the relative condition of the stock: is it better now than then, or is it worse?—I do not think there is much difference.

6. Do you find at the present time there is a large number of draw-bar springs broken?—Not to a great extent. One always comes across a few.

7. Do you think there is a larger number being broken to-day than there was some years ago?—I do not think so.

8. In examining a train do you examine the draw-bar springs?—Yes.

9. And in examining a goods-train do you examine the draw-bar springs?—Yes, every one of them.

10. What is about the average number you find broken on a train?—On some trains you may come along and never find one broken. On other days you may find perhaps one or two springs broken on a couple of trains. You may get an epidemic of broken springs, and at other times you may have none broken.

11. To what do you attribute this epidemic of broken springs?—Shunting, and, I suppose, rough handling of the rolling-stock at times at different places.

12. You come across a certain number of pieced springs?—Yes, but we take them out if there are any broken in pieces. If a spring happens to be broken in one place I do not think it is necessary to take that out.

13. If a spring has been broken on the road and is in two halves, the buffer would be slack, would it not?—Yes, it may be and may not be.

14. If it is slack what do you do?—Tighten it up if the spring is just broken in one place.

15. Have you come across any broken bearing-springs?—No.
16. If you come across a broken bearing-spring on a vehicle, what would you do?—Take the vehicle off.
17. In what condition do you find the tires, as a rule?—Very good.
18. Have you had any broken axles?—No, sir.
19. Do you come across broken draw-bars on running trains at any time?—Yes, I have.
20. Can you give us an idea as to the number of such broken draw-bars?—Well, I really could not give you the number.
21. Could you not give a rough idea of the number you meet with in your day's work?—It may be that I would go for months and not come across a broken draw-bar. There is always the chance of coming across one, but I have not taken notice of how many I do come across.
22. Roughly speaking, say in six months, how many broken draw-bars do you think you would encounter in your inspection?—I suppose if I found five or six that would be all.
23. Do you find many axle-boxes broken at the back?—Not a great many.
24. How many a month do you think you meet with?—I might not meet with any in a year.
25. *Mr. Marchbanks.*] How many wagons do you examine in a day in the busy season?—The busy time would be practically in the grain season, when we get more wagons, and in the eight hours we would average about thirty or forty to a train, and we have anything up to fourteen mixed trains in a day.
26. That would be about four hundred wagons?—Yes.
27. Do you see the draw-bar springs on every one of those wagons?—I do.

EDGAR ELLIOTT CAREW recalled. (No. 51.)

1. *Mr. Myers.*] Would you mind looking at this circular [produced; Exhibit N]. You will see it is a circular addressed to the Car and Wagon Inspector, Dunedin. I want you to look at it and see if it is anything like the instruction you referred to as having been received by you?—Yes, that is a copy of it.

The circular reads as follows:—

Locomotive Engineer's Office, Addington, 5th December, 1916

Car and Wagon Inspector, Dunedin.

Repairs to Rolling-stock.

THE workshops are being overcrowded with repairs, and in some cases vehicles have been sent to workshops which could easily have run for months, the repairs required being very slight and not affecting the safe condition of the vehicle in any way.

Car and Wagon Inspectors will please endeavour to regulate the supply of vehicles to workshops, and send only those vehicles that require repairs to keep them in safe condition to run.

The running-gear and Westinghouse brake must be kept in first-class order.

G. E. RICHARDSON, Locomotive Engineer.

(Witness called by the Commission.)

EDWARD SOLOMON TONER sworn and examined. (No. 52.)

1. *Mr. Myers.*] You are a leading train-examiner at Invercargill?—Yes.
2. How many train-examiners are there in Invercargill?—Two train-examiners and two lifters.
3. Are all the trains examined coming in and going out of Invercargill?—Yes, every train.
4. How long have you been leading train-examiner there?—Two months.
5. Prior to that were you in Invercargill?—No, in Dunedin for eighteen years, as gasman.
6. *The Chairman.*] You have come in contact with the rolling-stock for a little over eighteen years?—More or less, yes.
7. You can form an idea, then, as to the condition of the rolling-stock?—Yes.
8. In what condition do you consider the stock is now as compared with three years ago?—I should say it is in good average condition as compared with three years ago.
9. Is it in a worse condition, a better condition, or in the same condition?—I should say it was in the same condition.
10. Since you have been at Invercargill have you met with a large number of broken draw-bar springs?—I should not say a large number.
11. When you meet with a broken draw-bar spring what action do you take?—The vehicle is corded for repairs and taken out of traffic.
12. Is there any difficulty in getting those repairs done?—No.
13. To what do you attribute the breakage of the draw-bar springs?—Most of the breakages occur during shunting operations.
14. Should the shunting operations break the springs?—Not if they are carried out in a careful manner.
15. You mean to say, therefore, that the shunting is rough now?—It is the rough shunting that causes the breakages in a large percentage of cases.
16. Is there more rough shunting now than there used to be in the old days?—No, I would not say that.
17. Do you meet with many broken bearing-springs?—Very, very few.

18. What action do you take when you meet with a broken bearing-spring?—The vehicle would be taken out of traffic immediately.

19. Do you meet with many broken draw-bars?—We might average two or three a month—I could not say offhand.

20. Where do they generally break?—A lot of them break through the eye—the cotter-hole.

21. I believe the cotter-hole is being done away with?—Yes, it is being done away with.

22. When you are examining a train do you examine all the draw-bar springs?—Yes, they are all examined.

23. Do you consider you can give them a proper examination while you are examining a train?—Yes, they get a proper examination.

JOHN CARSON SWORN and examined. (No. 53.)

1. *Mr. Myers.*] You are Manager of the Railway Workshops at Hillside?—Yes.

2. How long have you held that position?—Three years at Hillside this time.

3. You had been at Hillside before?—Only as Workshops Foreman Fitter—that was about five years ago; and then I was at Petone for fourteen months and at Addington for eight months.

4. As you have been here on this occasion for three years, you can tell us what the condition of the rolling-stock was when you came here and what the condition is now?—Yes; I consider it is in better order now than when I came here first.

5. Do you suggest it was in bad order when you came here?—No. I consider that owing to the improvements made in the wagons they are in better order now. There is more stock turned out every week, and more improvements, such as axle-boxes, standard horn-plates, and handrails on the sides of the wagons.

6. It is because of those improvements that you say the stock is in better condition?—Yes.

7. How many men have you employed at Hillside?—At the present time there are five hundred.

8. And they are all under your superintendence?—Yes.

9. Who is the next man to you?—Mr. Brooks, the Foreman Fitter.

10. And is Mr. Tichener with you?—Yes, he is Foreman Carpenter.

11. Do you do much construction-work at Hillside?—Yes, a lot of construction-work.

12. And you, of course, also do repair work?—Yes.

13. To which class of work is precedence given?—To repairs every time.

14. You subordinate the new work to the repair work: is that so?—Yes.

15. Is that done on your own initiative or in consequence of instructions?—On verbal instructions from Mr. Richardson, Locomotive Engineer; and that is my general practice.

16. And do you carry out that instruction?—I do.

17. Has the rolling-stock which is handled down here increased during the last three years?—The output of repairs has increased.

18. I mean the quantity of rolling-stock employed on this section of the railways?—Yes, it has increased.

19. I suppose you do not know to what extent?—I do not know to what extent, but we have turned out a lot of stock during the last three years.

20. And have your repairs increased or decreased?—The repair work is about the same, but I keep more men employed on repair work, and that is how I get out more work.

21. What examination or inspection is conducted of repaired vehicles in your shops?—Well, the wagons are sent into the shop by the Car and Wagon Inspector, and when they are repaired the Car and Wagon Inspector passes them out again, but in the meantime the Foreman Carpenter goes through the wagons himself.

22. What about yourself—do you carry out any inspection?—I go round them sometimes, but I have not time to go round them all.

23. Your inspection is more or less a casual one?—Yes.

24. You have a very large staff: is it a good and competent staff?—Yes, a splendid staff.

25. I suppose if you thought your staff could be improved in any way it would be your duty to make representations to that effect?—Yes, to the Locomotive Engineer.

26. Or the Head Office through the Locomotive Engineer?—Yes; but I write to the Locomotive Engineer.

27. Have you found occasion to make any such representations since you have been here?—Sometimes when they want new work turned out a bit quicker I represent the matter then.

28. But have you found it necessary to make complaints with regard to the efficiency of your staff?—Oh, no.

29. Or representation with regard to the necessity for improvement in that respect?—No.

30. You are in charge of all the work at Hillside: to what extent have you freedom of action in directing what work shall be done there?—I get every freedom; they do not tie me down in any way. They only tell me what stock they want out; they do not tie me down in regard to repairs at all.

31. Would it be correct to say that you have an entirely free hand?—I have an entirely free hand in regard to repairs, but in reference to new stock it is different—they may want a certain vehicle out first.

32. But in regard to repair work you have an entirely free hand?—Yes.

33. Have you at any time during the last three years had any instruction with regard to curtailing the repair work?—No, I have had no such instruction.

34. Have you had any instruction during the last three years which in any way curtailed your freedom of action in regard to repair work?—No.

35. We know that a great deal of work in the way of light repairs is done at the repairing stations?—Exactly.

36. I suppose you also do light repairs as compared with heavy repairs?—Yes.

37. Would you mind indicating to the Commission what you mean by “light repairs” and what by “heavy repairs”?—Heavy repairs is when a wagon is lifted and the undergear and underframe attended to, and light repairs is when a wagon is lifted but only a little done to the body of the wagon.

38. Would you get wagons sent in to you, for instance, merely for the purpose of having draw-bar springs put in?—Oh, no.

39. What about the painting work—is that kept up?—The way I carry out the work is to keep the cars up to proper order both inside and outside, and also box wagons; but in regard to wooden wagons, I let them go a little in order to keep the iron wagons painted. If a wooden wagon wants a coat of paint badly I put it on, but everything else is well kept up.

40. And why not the wooden wagons?—I do not think there is as much necessity with wooden wagons. I think the iron wagons require it more; and also when the cars come in I always do the lavatories every time and keep them clean.

41. You know that in regard to certain classes of wagons the time for periodical lifting has been extended from two to three years?—That is so.

42. Have you anything to say about that?—Well, I did not think it was necessary for those wagons to be lifted every two years. With the new standard axle-boxes now being fitted the brasses can be examined without lifting wagons by opening the lid of box. It is only in regard to the wagon stock that the time has been extended.

43. You say you personally do not see the necessity of lifting them every two years?—That is so.

44. Do you think that once in every three years is quite sufficient?—Yes, quite sufficient.

45. Although you have a rule or instruction to that effect, does it necessarily follow that a wagon is only lifted once in three years?—No, it does not follow all the time, because a wagon might get sharp wheels in that time and may have to come in to get a new set of wheels.

46. Notwithstanding the instruction, you may have a wagon lifted more than once during the three years?—Yes.

47. Apart from the necessity for lifting owing to defects, is once in three years sufficient, in your opinion?—Yes, quite sufficient, in my opinion.

48. Of course, the cars are lifted more frequently?—Yes, once every twelve months; and the refreshment-cars once every six months.

49. Have you had anything in the way of broken axles brought into the shops during your time?—I have had two or three in my time.

50. Do you know what is the cause?—No, I do not, except perhaps a derailment.

51. And do you have any broken tires?—No, I have not seen a broken tire since I have been there this last time for three years.

52. And any broken bearing-springs?—No, I have not seen a broken bearing-spring.

53. Have you a good many broken draw-bar springs?—Yes, I have seen a good many of them.

54. We have been told that in various parts of New Zealand pieced springs have been used?—I have used pieced draw-bar springs for the last six months.

55. How did it come about that you used them?—I saw a big heap lying in the yard, and Mr. Titchener, the Foreman Carpenter, who came from East Town, told me they were using them up North. I asked Mr. Richardson if I could use them down here, and, obtaining his permission, I did so. I used them partly on the score of economy.

56. When Mr. Titchener told you they were used up North and suggested that they might be used here, did you see any objection to it?—No, no objection at all—that is, with a spring only in two pieces.

57. And on what class of vehicle?—Wagons, but not carriages.

58. Did it occur to you when Mr. Titchener spoke to you that the use of pieced draw-bar springs in any way prejudicially affected the safety of a train or vehicle?—No.

59. Does that occur to you now?—No.

60. Do you see how the safety of a train or vehicle can be prejudicially affected by the use of pieced draw-bar springs?—No.

61. You have used them?—Yes, just for the last six months.

62. Did you know there had been some discussion in Parliament about this in July last?—I saw something about broken draw-bar springs mentioned.

63. But it is since then that you started to use the pieced springs?—Yes; only in October last I started to use them.

64. Have you used many?—No, not many. We used forty last month. We have now no more broken parts to use up, and that is why we could not use any more last month.

65. Would it be correct to say you have plenty of pieces, but that they are not suitable?—Yes, they are not suitable.

66. You have to select two suitable pieces?—Yes.

67. Look at these two pieces on the table [produced]?—Yes; they have to be 7 in. long.

68. Would you have any hesitation in using a pieced spring like that?—No.

69. That is, on a wagon?—Yes.

70. The only reason you are not using them now is that your stock of suitable pieces has gone?—Yes. I have any amount of sound springs there.

71. At times since October last when you have used the pieced springs had you any shortage of complete springs?—No, no shortage at all.

72. So that, whatever reason may have actuated any one else in New Zealand, you were not compelled by a shortage of springs to adopt this course?—No.

73. You did it for economy and thought it right and safe?—When they were doing it up North I thought I could do it down here.

74. Do you find many vehicles come into your shops with liners in the axle-boxes?—There are a few—the old wagons.

75. Do you see any objection to putting liners in?—No, not at all.

76. How long has the practice, to your knowledge, been adopted of using liners?—Ever since I have been in the Railways—for thirty-four years now.

77. I suppose a stock of spares is kept in Dunedin?—Yes, in the stores.

78. Do you know whether those spares are obtained from Wellington or whether they come consigned direct from England?—They come direct from England, I think—ordered through the Head Office.

79. And you require supplies, of course, for the purpose of carrying on your work?—Yes, and I order through the Storekeeper at Hillside.

80. What kind of stock does he keep—is it good stock?—Yes, good stock; but if we get an order for a lot of new wagons the principal parts are ordered from Home.

81. But for repair work you get the supplies from the Storekeeper here?—Yes.

82. Have you found there have been any delays in getting supplies of the necessary stock?—No, none at all.

83. Or any difficulty?—No, no difficulty at all. We pay a little more for it, that is all.

84. Mr. Richardson is your Locomotive Engineer for this district, is he not?—Yes.

85. Does he pay visits of inspection to the shop?—Yes, about once a month.

86. Do you receive any visits from the Chief Mechanical Engineer?—Yes, now and again.

87. Does he look round the shops when he comes?—Yes, he always looks round.

88. *The Chairman.*] Do you paint as many wagons now as you did three years ago?—I could not tell you that.

89. *Mr. Maxwell.*] When you spoke just now about your not having used pieced springs for more than six months until you heard of them being used up North, do you include the Addington district as being up North?—No, Wellington or the North Island.

FRANCIS HEADING TITCHENER sworn and examined. (No. 54.)

1. *Mr. Myers.*] You are Workshops Foreman Carpenter at Hillside Workshops?—Yes.

2. How long have you been there as Foreman Carpenter?—About fourteen months.

3. Before that were you at East Town?—Yes, as Foreman Carpenter for twenty-two months.

4. Before that what were you?—I was leading carpenter at Newmarket.

5. When you were at East Town do you know whether or not pieced draw-bar springs were used?—They were not used until I was instructed to use them.

6. But they were used at East Town while you were there?—Yes.

7. In how many pieces?—Two pieces.

8. When you came down to Dunedin did you find them in use here?—No, not here.

9. Have they been used at any time since you came to Hillside?—Yes.

10. Do you remember how they came to be used?—Yes; I saw a heap of broken springs, and I drew the attention of the Workshops Manager to them, and said they were used in the North Island, and asked if I could use them here.

11. The Workshops Manager has told us that after reference to Mr. Richardson he told you that you could?—Yes.

12. When you mentioned the matter to the Workshops Manager, had you any hesitation in using pieced draw-bar springs?—None whatever.

13. Had you found the use of them in the North Island when at East Town satisfactory or otherwise?—I found them satisfactory.

14. How did they compare, in your opinion, with the one complete spring?—Well, I saw no difference in them.

15. Do they in any way affect the safety of the train?—No, not at all.

16. Or the vehicle on which they are placed?—No.

17. Is there more wear-and-tear on any of the undergear by reason of their use?—No.

18. Then may we take it that it was not by reason of any shortage of draw-bar springs that you suggested to the Workshops Manager at Hillside the use of pieced springs?—Yes, there was no shortage.

19. When you used them at East Town was there a shortage of complete springs: can you remember?—No, there was no shortage.

20. That is your recollection, at all events?—Yes, that is my recollection.

21. You have put in a good number down here—we were told there were about forty used last month?—Yes.

22. Prior to that, during the months those pieced springs on the draw-bars were used, do you think the average would be more or less than forty?—About the same.

23. Have you found the use of them satisfactory here?—Yes.

24. Have you used them down here on anything other than wagons?—Nothing but wagons.

25. What stock of new complete draw-bar springs have you on hand now?—About eight hundred.

26. During the time that you used pieced springs at Hillside did you have anything like that stock of new ones?—Yes.

27. And may I take it that that is, in your opinion, an ample stock to keep on hand?—Yes.

28. Is the stock kept pretty well up to that?—Yes.

29. How does the condition of the rolling-stock compare now with its condition as compared with when you came here?—That is, the general state of it you mean?

30. Yes?—Apart from any alterations that may have been made?

31. Well, the alterations may affect the condition, of course?—It improves the condition.

32. Well, I want to get in your own way the comparison. You can take it either way, either apart from the improvements and then with the improvements?—Well, the stock has not deteriorated.

33. When you say that do you mean apart from improvements or taking the improvements into consideration?—Apart from improvements.

34. Then, do you say that quite apart from improvements there has been no deterioration?—Yes, no deterioration.

35. Now, considering the stock in the light of improvements that have been effected, what do you say as to a comparison?—I say it is better.

36. It has been said or suggested that the painting is not kept up as well as it used to be, or as well as it might be. What have you to say on that point?—In the case of the cars and vans it is just as well as ever it was. The K, X, and W wagons are as well looked after as ever they were. The iron L wagons are well looked after, scraped and painted; but the wooden wagons do not get painted so often as the iron L wagons.

37. I suppose as Foreman Carpenter you have charge of the repair work?—Yes, and the construction work also.

38. When vehicles which have been sent in for repairs have had the repairs effected, is there any inspection made of the vehicles in the workshops themselves?—Yes, by myself and the leading carpenter.

39. In conjunction?—No.

40. If you find anything that you think has not been done as it ought to be done, what do you do?—I have it attended to.

41. Then after that they are inspected again by somebody else, are they not?—Yes, by the Car and Wagon Inspector.

42. Do you find his inspection a keen one?—Very.

43. Does he ever find things you have missed?—Yes.

44. And what happens then?—He has it attended to through me.

45. So that each vehicle has to run a kind of gauntlet before it is allowed to go into service again?—Yes.

46. Prior to 1915 there was a regulation that every vehicle according to its class had to be lifted once in certain periods?—Yes.

47. You know that with regard to certain classes of wagons the time has been extended from two years to three years?—Yes.

48. Are you able to say whether when the regulation required the lifting every two years it could be carried out or was carried out?—No, it was not carried out.

49. Why not?—The lifting was in arrears.

50. So that when you had the regulation which required these particular wagons to be lifted every two years it could not be done and was not done?—No.

51. You say the work used to get into arrears. Was that only in recent years, or had it gone on for a substantial period?—I am not prepared to say during the time I was working at the bench. Whilst I was leading hand is the only time I can speak of.

52. And was the work in arrears all that time?—Yes.

53. And how long were you a leading hand?—Five years and a half.

54. What do you say as to the sufficiency of lifting those wagons once in every three years?—I think that is ample.

55. Is that in any way affected by the use of the improved axle-boxes?—Yes.

56. *The Chairman.*] You spoke of the use of pieced draw-bar springs. Have you noticed how they behave in practice?—I have not seen them in practice.

57. Do you know if the pieced springs break up further in actual work?—Not to my knowledge.

58. You have not come across broken pieced springs?—No.

59. None at all?—Well, I have not kept a list of each particular vehicle that a pieced spring has been put into.

60. You have not kept any record of any vehicle fitted with pieced springs?—No.

61. You have not found vehicles coming back to the shop with springs in them which had been apparently pieced and then subsequently broken up?—Oh, no. It would be hard to tell.

62. *Mr. Marchbanks.*] You say you never put pieced draw-bar springs in cars?—No, never.

63. Well, during your overhaul of cars, have you found pieced springs in them?—I have found broken springs.

64. And none pieced?—Not to my knowledge. When I see a spring broken in a car I am not prepared to say that that spring had been put in pieced.

65. When you see a spring like that on the table here in a car with the draw-gear tight, you regard that as a pieced spring, do you not?—Yes.

66. And you have never seen any of those?—No.

67. Have you come across any springs in wagons pieced in three pieces?—No, never.

68. You said you had eight hundred springs in stock. Are those all maintenance springs or A.O.L. stock?—A.O.L. stock and for maintenance.

69. A.O.L. stock is for new work?—Yes.

70. Even with the eight hundred springs you mentioned, you have springs for new stock as well as maintenance?—Yes.

71. With regard to painting wagons, can you say that you put through as many wagons as you did two or three years ago?—Yes.

HUGH WYLIE sworn and examined. (No. 55.)

1. *Mr. Myers.*] You are a Car and Wagon Inspector in the Railway Department at Dunedin?—Yes.

2. How long have you been Car and Wagon Inspector down here?—For eleven months. I was appointed in September last, but I was relieving previous to that.

3. What are the termini of your district?—From Studholme Junction to Clinton; and Oamaru is generally regarded as about the limit north.

4. How many train-examining stations have you in your district?—Oamaru, Palmerston, Dunedin, Mosgiel, Milton, Balclutha, Clinton, and then the branches of Central Otago, Ranfurly, Clyde, and Kaitangata.

5. I suppose you have a pretty big staff at Dunedin?—Yes, we have a staff of eight examiners and lifters.

6. And I suppose you yourself have an office at the station?—Yes.

7. How often do you inspect your district?—Every four weeks.

8. Vehicles are sent direct to the shops by the examiners: that is correct, is it not?—Yes.

9. And do you get a record from every examiner of the vehicles which that examiner sends into the shops?—If I desire to get particulars of the shop I do. I do not get a record of every vehicle, but I pass the vehicles out when the repairs are completed.

10. There is a Loco. 43 sent in with the vehicles?—Not in the case of every vehicle that comes into the shops.

11. Just explain that. What vehicles are accompanied by a Loco. 43 and what are not?—In the case of cars and brake-vans a special memo. is written to the Workshops Manager, but in the case of wagons they are simply carded and go to the shops for repairs. On the completion of the repairs I go and make an inspection and give a certificate before the vehicles are allowed to go into traffic again.

12. Do you keep a record of every wagon that is sent in?—Yes, at the inspection at the shops on the completion of the repairs.

13. Do you keep a record of any repairs done by the examiners at the out-stations?—Yes, and books are kept in the office.

14. So that by means of information you get from the train-examiners and the information you obtain by reason of your inspection at the shops before passing out, you have a full record of all the work that is done?—Yes, a full record of work done in the way of repairs to vehicles.

15. How do you find the work done by your train-examiners and lifters at the different stations?—Quite satisfactorily. I have had no cause for complaint.

16. And are you satisfied with their discretion as to the repairs they do themselves and the vehicles that they decide to send into the shops?—Quite.

17. You inspect and pass out all the repaired vehicles?—That is so.

18. Have you any complaint to make of the way in which the work is done at Hillside?—None whatever. If I am not satisfied with the way in which the work is done I have the vehicle held until it is completed, and if I discover anything in my inspection which I think should be attended to it is done.

19. Does that often happen?—No, not often.

20. And when it does, do you find any difficulties raised?—No, no difficulty at all.

21. If you want anything done it is attended to?—Yes, done without question.

22. What is the effect of all this repair work that is done so far as the condition of the rolling-stock is concerned: is the effect to keep the stock in a good condition, or does the rolling-stock deteriorate notwithstanding the work that is done?—Of course, rolling-stock does deteriorate notwithstanding that repairs are effected. On very old vehicles there is, of course, deterioration going on, but that deterioration does not render them unsafe for traffic.

23. Well, take your old vehicles: supposing you find there is anything wrong or something that requires to be renewed, it is put right or renewed?—Yes, it is put right, and if any are extremely bad a recommendation is sent to the Locomotive Engineer for rebuilding.

24. Where does the deterioration take place?—Up to the point when they are recommended for rebuilding.

25. When you speak of "deterioration" you speak of ordinary wear-and-tear?—Yes.

26. All parts that do not require renewing until they arrive at a certain stage of deterioration?—Yes.

27. Have you in any way attempted to curtail the activities of your train-examiners so far as sending vehicles into the shops is concerned?—No, not at all.

28. I think you have not used pieced draw-bar springs yourself?—Yes, I have, in wagons, since October—since receiving the instruction authorizing the use of two pieced springs in wagons only.

29. And from whom did you receive that instruction?—The Locomotive Engineer at Addington.

30. Do you know whether that was before or after the question had been raised by Mr. Carson?—I think it followed on Mr. Carson's raising the question.

31. Have pieced draw-bar springs been used at the different stations and at Dunedin?—At Dunedin and Oamaru only.

32. That was the authorization?—Yes.

33. How have you found them work?—Quite well. They have no complaint to make about them. They have not had any repairs, or any reports, or trouble in any way due to the use of two pieced springs.

34. Do you keep a heap of those broken parts and springs at the station?—They are used up faster than will allow us to get an accumulation. The majority of the springs are, of course, whole springs.

35. Have you during the time you have used pieced springs had any shortage of complete springs?—No.

36. So your use of pieced springs has not been due to any shortage?—No.

37. Has there been any shortage of any other supplies which you have required?—There has not been a shortage, but there has been a tendency to scarcity since the war commenced.

38. Does that apply to any particular lines or articles, or is it general?—Particular lines that do not affect the safety of the rolling-stock, such as gas-mantles, gas-globes: that is about all. I think there has been a little scarcity of certain types of nails. Those items are hardly procurable.

39. Apart from things like that, have you had anything to complain of or any difficulty in obtaining supplies?—No, no difficulty whatever.

40. You obtain your supplies from the Storekeeper at Hillside, I suppose?—Yes.

41. And do you keep your different stations stocked with supplies and spares also obtained from Hillside?—Yes, and from the stocks we have on hand.

42. Your examiners at the different stations requisition you?—Yes.

43. You have already said that you have to inspect the vehicles and pass them out when they have been in the shops for repairs. I suppose we may take it that from what you have already said that you see that the vehicles are perfectly safe before you allow them to go into service?—Yes, perfectly safe. I would not take any risk in that matter.

44. Supposing you saw a vehicle which you thought required painting, would you pass it or ask that it be painted?—I would have it painted if I considered it sufficiently bad to require it.

45. If a vehicle goes into the shops I suppose they may paint it or not as they think necessary?—Yes.

46. Supposing when you go to inspect and you see a vehicle which you think requires painting, have you the right to order it to be done?—Yes, I have to do that occasionally. I decide whether a wagon should be painted or not.

47. Have you had any instructions which would have the effect of making you refrain from asking for the painting of a wagon or carriage which you thought required painting?—None as regards painting at all. I have had in view the whole time that the war has been on that the material has increased in price and that kind of thing.

48. And you have not thrown money away?—That is so. I have endeavoured economically to get the stock through consistently with safety and good order.

49. *The Chairman.*] Speaking of pieced springs, have you kept any pieced springs under observation when they have been fitted to vehicles?—No, sir, I have not.

50. Do you not think that seeing you were using such springs for the first time it would have been a desirable thing to have done?—Yes, it perhaps would have been wise to have observed the working of them. As to any observations I have made of vehicles fitted with pieced springs, I have not doubted their stability.

51. You are not aware that springs which have been pieced have had a tendency to break up subsequently?—No.

52. Do you think they stand as well as whole springs that have not been pieced?—I think so.

53. *Mr. Marchbanks.*] Can you say how many draw-bar springs, roughly speaking, you put in at Dunedin in a year—that is, outside the workshops?—From forty-five to fifty per period. Those are springs which are replaced, and some of those would be pieced.

54. Do you never put them in carriages?—No, never.

55. Have you ever come across them in carriages?—I have found broken draw-bar springs in carriages, but they have never been placed there purposely.

56. Are you sure of that?—Yes, quite sure.

57. Have you ever seen springs in wagons pieced in three pieces?—No, never.

58. How many springs would, say, a couple of your men put in in a day?—That would depend largely upon the class of vehicles they were dealing with.

59. Say, L wagons or LA wagons?—Well, two men would deal with seven or eight wagons in a day.

60. In the examinations made at out-stations of running trains and goods-trains, do the examiners really examine the draw-bar springs?—At any time I have observed them working they do.

61. They have to examine the wheels, axles, axle-boxes, and bearing-springs, and is there time to examine the draw-bar springs as well?—Yes, there is time, and they do it.

62. Do you think they do?—Yes, from any observation I have made I have seen them actually examining the springs.

63. What percentage of broken draw-bar springs would you expect to find in the average goods stock?—That is rather a difficult question to answer. I should be surprised if it exceeded 10 per cent. of broken springs in the wagon stock.

64. Have you any idea how they come to be broken, whether in running trains or in shunting?—I put it down as being entirely due to shunting.

(Witness called by the Commission.)

CHARLES McLAREN sworn and examined. (No. 56.)

1. *Mr. Myers.*] What are you?—A train-examiner at Balclutha.

2. And how long have you been a train-examiner there?—About two years and a half now.

3. Have you any fitter working with you?—No.

4. Is there only one train-examiner there?—Yes, just the one.

5. *The Chairman.*] Comparing the condition of the rolling-stock now with the condition two years and a half ago have you noticed any change in the condition for the worse or for the better?—Yes, it is in better condition in several points.

6. You would say the general condition is better?—Yes.

7. Have you come across many broken bearing-springs?—No, not a great many of them. We come across one occasionally.

8. What type of spring, the elliptical spring or the coil spring?—The elliptical spring. I have never come across a broken coil spring.

9. Do you come across many broken draw-bar springs?—No, not a great many.

10. Do you inspect the draw-bar springs on every train?—Yes.

11. Can you see them properly?—Yes, you have to look underneath to see how the draw-gear is.

12. Do you inspect those springs by actually looking at them, or do you inspect them by noting how the buffer-heads are?—It depends on how the train is pulled up at the station. If the buffers are pulled up tight we have to look underneath, but if not you can see if there is anything wrong with the draw-gear.

13. If a train is drawn up normally at the station, you consider the position of the buffers would give you an indication as to the condition of the spring?—Yes.

14. And possibly you would not look at the spring at all?—You have to look at the spring to see if the draw-gear is all right.

15. Then you always look at the springs themselves?—Yes.

16. And you have not found many broken draw-bar springs?—You get more in wagons than in carriages. You rarely find them in carriages, but sometimes in wagons.

17. Roughly, how many a day would you find in wagons?—Some days perhaps you get none at all, and on other days perhaps two or three with a break in them.

18. To what do you attribute the breakage of those springs—what causes it?—I should say, principally the shunting in the yards—the wagons getting bumped.

19. Do you mean rough shunting?—I do not know if you would call it rough—ordinary shunting. It does not take much of a bump to snap a spring, and at other times it will take a great deal.

20. Do you come across any broken axle-boxes?—Yes, sometimes.

21. Where are they chiefly broken?—Generally at the back—the piece at the back that holds in the wooden washer.

22. When you find them broken what do you do?—They are marked for wherever their destination is when empty.

23. If they are empty you take them off the train?—They are sent in on a goods-train to the shops.

24. Is there any difficulty in getting the repairs done?—No, I have never experienced any.

25. You have never been told at any time to ease off sending in wagons to the shops?—No.

26. You have a perfectly free hand in regard to sending in wagons?—Yes, and instructed that all defects are to be notified to the Car and Wagon Inspector.

27. *Mr. Marchbanks.*] Do you put in pieced draw-bar springs?—No.

28. Do you take pieces of springs out?—Yes.

29. Always?—No. If a spring has one break in it we send it to the centre, but if there is more than one break in a spring then the spring is replaced.

30. Do you come across many broken draw-bars?—Yes, but not a great many. Sometimes we have a run for a month or two, and then you will get none for a time. I had one last week which is the first I have had for over two months.

31. You put in no pieced springs at all?—No.

32. *Mr. Myers.*] Do you do any repairs?—Just light repairs, but anything else we send to the shops.

(Witness called by the Commission.)

JAMES DOBBIE sworn and examined. (No. 57.)

1. *Mr. Myers.*] You are employed in the Railway Department as a leading lifter, are you not?—Yes; at Dunedin passenger-yard.

2. How long have you been employed there?—I have been employed in that capacity as leading lifter for five years, and altogether I have been thirty years in the service.

3. *The Chairman.*] A good deal of rolling-stock passes through your hands?—Yes, a good deal.

4. What is your opinion as to the general condition of the stock now as compared with five years ago?—Very good. I think the stock is in better condition, if anything, than five years ago. The tendency has been to improve in that time.

5. With regard to the wagon stock, do you find that the number of broken draw-bar springs is increasing?—I do not think the number is increasing. There are certainly still a good many broken.

6. You are not on the wagon side of the yard?—No; but the wagons all pass through the passenger-yards. They arrive there and are examined and go to the goods-yard. They all come under our notice.

7. The quantity of draw-bar springs that are being broken is rather a serious matter?—We do not take a serious view of it. Of course, there are a good many, which is due, I suppose, to the rough handling and ordinary wear-and-tear.

8. You mean you do not consider it affects the safety of the vehicle?—No, not at all.

9. But at the same time you have noticed there is a large number broken?—Yes; due to rough handling, I should say.

10. Where do they get this rough handling?—They may get it during train-running, but principally during shunting operations—shunting wagons when loaded.

11. Is the shunting rougher than it used to be?—I do not think so.

12. Do you renew the springs in the wagons in the yard?—No; it is done in the goods-yard. The wagons are sent down from here for renewing.

13. Do you come across many pieced springs in the wagon stock?—In the wagon stock they have been pieced. If there is only one break in a spring and the compression is good in the wagon, not showing any slackness, the spring would not be taken out of service—that is, providing there is not more than one break, and that is satisfactory.

14. Do you find cars running with one break in the draw-bar springs?—Yes; but if they show any slackness the car is taken out of service.

15. What do you think of that practice?—If the spring has only one break and the compression good and showing no sign of slackness it is quite effective.

16. If there is a slackness in the buffers you can remedy that by tightening them up?—Yes, they are taken out of traffic and tightened up. If we find it necessary to take a car off with a slackness in the draw-gear, then we always take the spring out and renew it.

17. *Mr. Marchbanks.*] Do you come across any broken bearing-springs?—There are a few found in the car stock, but they are more frequent in the wagon stock.

18. And coil bearing-springs?—Yes.

19. How many would you come across in a period?—I could not give you an idea offhand, but it runs into a good many in the wagon stock.

20. What type of spring breaks more easily—some break on the sides and others on the saddle-head?—Yes; the ones that rest on the saddle-head break more frequently.

21. Do you get many canted axle-boxes?—Yes; the laminated spring, I think, has a great tendency to turn the box.

22. Have you noticed any draw-bar springs pieced in three pieces?—No, I never knew them pieced in three pieces.

23. I mean, tightened up in three pieces?—No; if they are showing three pieces the draw-gear is slack. I have not seen any tightened up in that way.

24. Have you come across many broken draw-bars coming in on running trains?—They are very rare. We have one now, and again, but I do not know how many we would average.

25. Do you come across many draw-hooks broken?—They are broken sometimes. They do not come often on trains broken, but if they do it is owing to rough shunting.

26. *Mr. Maxwell.*] You say you sometimes allow broken draw-bar springs to remain in if they are tight?—Yes, providing there is only one break.

27. Do you sometimes put in washers to tighten them up?—Yes.

28. And do you sometimes use pieces of old springs for washers?—If a piece of old spring has been flattened out into the shape of a washer.

(Witness called by the Commission.)

JOHN FITZPATRICK sworn and examined. (No. 58.)

1. *Mr. Myers.*] What are you?—A train-examiner in the Dunedin passenger-yards.

2. How long have you been there as a train-examiner?—About five years.

3. Can you tell the Commission whether all the trains that go through Dunedin, or start from here, or leave here are examined?—Yes, every train.

4. You say you have been here five years, and you ought to know how the rolling-stock is kept up: how does its condition now compare with the condition five years ago?—Well, if anything, it is better. Everything is improved, and it is kept in better order and more up to date.

5. *The Chairman.*] Do you come across many broken draw-bar springs?—Very few considering all the trains we have to examine in this yard.

6. And on the carriage stock?—We find very few on the carriage stock, and not a great deal on the wagon stock.

7. Do you always look at the springs when you examine a train?—Yes, always look under the wagons and carriages to see the springs and axles.

8. Can you see the springs by looking underneath?—Yes.

9. Can you see them sufficiently well to see whether they are broken or whole?—Yes.

10. Are there many pieced draw-bar springs used?—None whatever. We do not put them in in that way.

11. Do you ever come across them in the vehicles?—We might get one with one ring broken, but if there is not too much play on the buffer we tighten them up and let them go.

12. And in regard to carriage stock?—It depends. We generally renew them by new ones in the case of carriages, but in the case of the wagon stock we might tighten them up and let them go if they are not too bad. That is just in the event of one ring being broken.

13. Do you come across any broken bearing-springs?—Very few in the cars, but a few in wagons.

14. Which springs do you find broken—the coil springs?—The laminated springs break more than the coil springs. It is not the spring itself that breaks, but the buckle. They crack, but it is not so bad taking them all through.

(Witness called by the Commission.)

JOHN ALEXANDER MACDONALD sworn and examined. (No. 59.)

1. *Mr. Myers.*] What is your position in the Railway Department?—Leading painter at Hillside.

2. *Mr. Marchbanks.*] How long have you been leading painter?—Since the 6th January last at Hillside.

3. Have you been employed at Hillside for any length of time?—Not recently, but I served my apprenticeship at Hillside.

4. How are the cars painted now as compared with three or four years ago—is the same amount of work put into the cars now as there was three or four years ago?—Yes.

5. And also going back farther than that period?—Going farther back the bodies were varnished.

6. Was the same body colour used?—Yes, the same as now.

7. What is the method of painting as compared with three or four years ago—are they painted as well?—They are much the same. To go into details, in years gone by they used to receive three or four coats of varnish, but that is not the case now.

8. The painting does not wear as well, I take it?—In those years the cars came off and were cleaned down and revarnished. Now they come and receive paint, which keeps the outside on a par with what they did in previous years, and I believe there is a saving in material.

9. What do they get now?—One coat of varnish colour.

10. And any varnish on top of that?—No, just the one coat of varnish colour. In Dunedin I find they receive one coat of lead colour, one coat of body colour, and one coat of varnish colour. That is three coats they receive when being painted.

11. That is altogether?—Yes, altogether.

12. Before they introduced the varnish colour how many coats of lead colour did they receive?—Two coats of lead where needed—one coat generally—and one coat of body colour, one of varnish colour, then varnished.

13. Were they varnished every year?—That I could not say. They came in periodically, but never less than a year—about every year or eighteen months.

14. What did they get then?—One coat of varnish. It all depends on the condition of the car itself.

15. As regards the wagons, you are not able to say how many wagons are going through the shops as compared with three or four years ago?—No, I could not.

16. Do they receive the same amount of attention when in the shops and exactly the same class of paint?—Yes.

17. And they are just as good as they were three or four years ago?—Every bit.

Mr. Myers: Those are all the witnesses I propose to call here.

The Chairman: The Commission will now adjourn for inspection and other purposes, and will meet at Christchurch on Friday morning, the 9th March, for the purpose of taking evidence.

(Commission adjourned to Christchurch.)

CHRISTCHURCH, FRIDAY, 9TH MARCH, 1917.

The Commission met at 9.30 a.m.

The Chairman: The Commission will now open in Christchurch, and I will ask the Secretary to read the Warrant. [Warrant read.]

Mr. Myers: I propose to call here, sir, some witnesses from Addington, the Workshops Manager, the Foreman, and Mr. Richardson, Locomotive Engineer. I also propose to call some witnesses from the West Coast, and a number of train-examiners whom the Commission have asked to be called. In addition, I expect that Mr. Beattie, formerly Chief Mechanical Engineer, will be here this morning, and I shall call him simply on one or two points. Then I propose to call Mr. Jackson, the Chief Mechanical Engineer. There is one additional witness to whom I just propose to refer. The Commission will remember that when it was holding its sitting in Wellington Mr. Wilford gave evidence, and he was asked the name of his informant to whom he referred in his speech in the House. He declined, for the reasons which he then gave, to give us the name of his informant. The officers of the Department had some reason to believe who it was that Mr. Wilford referred to, but, of course, we had no definite knowledge. After Mr. Wilford had given his evidence, however, an officer made a communication to his superior officers, and said he could not help thinking from the references made by Mr. Wilford to the circumstances under which this interview with his informant took place that he was the person to whom Mr. Wilford referred, and he expressed the desire that he should have the opportunity of being recalled and giving evidence before the Commission, because he wants the position cleared up. That witness, sir, will also be here, and will be called. I may say that on the 2nd March I wrote to Mr. Wilford as follows:—

T. M. Wilford, Esq.,
Messrs. Wilford, Levi, and Jackson, Solicitors,
Wellington.

DEAR SIR,—

Railway Rolling-stock Commission.

I have to inform you that it is intended to recall Mr. John Valentine, of Wanganui, Car and Wagon Inspector, to give evidence before the Royal Commission which is now conducting an inquiry into questions relating to the railway rolling-stock. Mr. Valentine has given general evidence before the Commission at Wanganui, but it is believed that he is the person referred to by you in your speech in Parliament and in your evidence given before the Commission at Wellington as being your informant, and he has expressed the desire to be recalled. He will therefore be called before the Commission when it sits at Christchurch on Friday, the 9th instant. I am giving you this intimation so that you will be in a position, if you wish so to do, to appear personally or be represented for the purpose of cross-examining Mr. Valentine.

Yours faithfully,
M. MYERS.

Mr. Wilford rang me up after receipt of that letter and indicated that it would be impossible for him to attend at Christchurch—at least, that is what I gathered from his conversation. Of course, it will be seen by the Commission that, as far as the Department is concerned, it could not do other than it has done. When the Commission was sitting in Wellington Mr. Valentine was not in Wellington; he is employed at Wanganui. He had already given evidence at Wanganui, and when the Commission sat in Wellington the officers of the Department had no definite knowledge as to who the officer was to whom Mr. Wilford was referring, although it had some ideas on the subject. Mr. Wilford was expressly asked who his informant was so that the Department might take steps to have that witness called at the most convenient place. I mention this merely to point out that it is no fault of the Department that Mr. Valentine was not called in Wellington and is now being called at some place other than Wellington. If the Commission could arrange—I do not know whether it is possible—to hold a further sitting in Wellington, then, so far as the Department is concerned, by all means we would hold over the recalling of Mr. Valentine in order to enable his evidence to be taken in Wellington; but this notice was given to Mr. Wilford because the Commission had indicated that its final sitting would be held in Christchurch. It was thought that Mr. Wilford might be able to arrange to attend, and that it would be much more convenient for him to attend at Christchurch than to attend farther south at Dunedin. We have therefore arranged to have Mr. Valentine in attendance here. If the Commission could arrange to sit in Wellington, well and good, we will call Mr. Valentine at Wellington, otherwise we will call him here.

The Chairman: There is no intention on the part of the Commission to sit in Wellington. The question between Mr. Wilford and his informant has no practical direct bearing to the reference in the Commission.

Mr. Myers: Then I will call Mr. Valentine here.

The Chairman: Before you call any witnesses I would say that the Commission would like to hear the Foreman Painter at Addington.

Mr. Myers: I have already arranged for him to be present.

EDWARD LEFORT WIGGINS HASKINS sworn and examined. (No. 60.)

1. *Mr. Myers.*] You are Locomotive Engineer employed by the Railway Department on the Westland Section?—Yes.

2. With your headquarters where?—At Greymouth.

3. How long have you held the position of Locomotive Engineer on that section?—For about four years and nine months.

4. What lines does your district or section consist of?—It has two separate districts—Greymouth and Westport.

5. It is the whole section or sections of line on the West Coast as far east as Otira?—Yes, and up to Ross at the other end.

6. You have shops at Greymouth and Westport?—Yes.

7. Have you train-examining stations?—Yes; one at Conn's Creek at the foot of the Denniston Incline.

8. Have you train-examiners stationed at Greymouth and Westport?—Yes.

9. And the only other examining-station is at Conn's Creek?—Yes.

10. Do you make periodical visits of inspection over your section?—Yes; about once a month as near as possible.

11. Do you when you make those visits inspect the work at the shops?—Yes.

12. And do you inspect the stock apart from any stock that may be in the shops?—Yes, I always have a look round.

13. What was the condition of the stock in general terms when you went to the West Coast as Locomotive Engineer?—In fairly good order.

14. That is four years and three-quarters ago?—Yes.

15. How would you describe its present condition?—I consider it to be in better order on account of the standardizing that was carried on, and the general upkeep.

16. When you speak of standardizing the stock on the West Coast, it has not been brought up to the same standard as the stock on the trunk lines, has it?—Not in all cases. The axles have all been renewed with modern steel axles; the sides of the wagons have been raised, and the hoppers have been rebuilt from the old hoppers to standard Q's, and the U wagons have been fitted with bond-chains and such things to bring them up to standard.

17. And that has all been done during your time there?—It has been carried on during my time and was started previously.

18. Apart from the improvements in that way, has the stock been maintained and kept up to a good standard?—Yes, thoroughly.

19. Have you had any broken axles in your time?—One.

20. What sort of vehicle was that on?—It was on an M wagon and was broken with an overload of stone just outside the Cape line. It came off the Cape line.

21. Is that the only broken axle in your time?—Yes.

22. And is that a passenger line?—Well, they carry passengers on it, but whether it is an authorized passenger line or not I could not say.

23. How long ago was that?—About three years ago.

24. Have you had any broken tires?—I have had one on a coal-wagon, and that was somewhere about the same time.

25. Have you had any derailments on running trains?—No; all the derailments we have had there have been due to accidents by running into something—into bullocks or that sort of thing, or split points, or points badly laid.

26. Those derailments would happen in shunting operations?—Yes.

27. How has the painting of the stock been kept up over in Westland?—It would compare favourably with any place in New Zealand, and I believe it is the best. That is my opinion.

28. Does that mean that it has been well kept up?—It has been well and thoroughly kept up. It could not be kept better.

29. Have you had many broken bearing-springs?—Very few.

30. And when you have had them have they been on wagons or on carriages?—Well, we have had a few on carriages, but very few. We have got no bearing-springs on the carriages; the bearing-springs are on the wagons. They are laminated springs on the carriages.

31. When you have had a wagon with a bearing-spring broken what have you done?—Stopped the vehicle and taken it out.

32. You say there are laminated bearing-springs on carriages: are there not coil bearing-springs as well?—Yes, there are, on the bogie-bar on top of the boxes. We get very few of those broken—in fact, none at all as far as I know.

33. I think that as far as the draw-bar springs are concerned you do get a great many broken?—Yes.

34. What does that happen on mostly—cars or wagons?—On wagons—on the Q's and UB's principally. Those are the coal-wagons—Q's.

35. Where are there the most broken—in Westport or in Greymouth?—In Westport.

36. Is there any particular reason for that?—The shifting of the wagons of coal in Westport is more frequent than what it is in Greymouth. There is more coal carried in Westport. At the mines they are on inclines from the bins, and they are very rough in their shunting, allowing the wagons to bank into each other.

37. Who is that done by, the railway servants or the companies' servants?—By the companies' servants.

38. And that causes a number of broken draw-bar springs?—Yes, and also the heavy trains. There are no continuous draw-bars either on the coal-hoppers.

39. You have four springs on each of the hoppers?—Yes, four springs on each vehicle.

40. When the draw-bar springs are found broken where are the repairs effected?—At the shops in Westport or Greymouth, as the case may be.

41. Supposing there is only one coil of draw-bar spring broken, what is done on your section?—We put in a washer to make up the distance and tighten it up.

42. Supposing there are more coils broken than one, what do you do?—They are taken out then and replaced with new ones or pieced springs.

43. When you speak of a pieced spring, you are speaking of a spring in how many pieces?—In two pieces.

44. Have you ever used more than two pieces for the purpose of building a pieced spring?—No.

45. Have you ever used pieced springs in carriages?—No, not in carriages.

46. Has this practice of using pieced springs in wagons been adopted by you throughout your term as Locomotive Engineer?—It was adopted previous to my going there. It had been in use by my predecessor.

47. How do these pieced springs work?—They work all right. I do not see any objection to them.

48. How do they work as compared with complete new springs?—As far as I know they are satisfactory, and as satisfactory as a whole spring.

49. Has that practice so far as you are concerned been adopted by reason of any shortage of draw-bar springs or for any other reason?—No; it is for economy. We have always had springs to go on with.

50. Do you think the efficiency is being in any way sacrificed to bring about that economy?—No, I do not.

51. Do you find that the use of pieced springs prejudices or affects the wear-and-tear of the undergear?—No.

52. Or the safety of the train or vehicle in any way?—No, it does not affect the safety in any way.

53. I think you have some particular view with regard to pieced springs. You put in two pieces, and what do you regard those two pieces as?—As two separate springs in juxtaposition.

54. I think you are now using a new type of draw-bar springs?—Yes; a double coil spring with a round section.

55. How long have you been using them?—Since last September.

56. How many of them have you used?—About ninety-nine.

57. Have you found any of them broken?—No, not so far.

58. Do you know that those round section springs had been used for some time before then in other parts of New Zealand?—No, I was not aware of that.

59. They were just sent to you in response to your order for draw-bar springs?—Yes.

60. Your experience so far is that they work quite well?—Yes, so far as we have seen.

61. Can you tell the Commission what staff there is at the shops in Greymouth and Westport respectively?—In Greymouth seventy-eight and at Westport sixty-six.

62. Have you anything to say about the efficiency or competency of those staffs or either of them?—They are quite satisfactory. I have no complaint to make at all. The work is carried out by them in an efficient manner.

63. And do you say the same with regard to the outside staff under your control so far as it goes?—Yes, they are equally good.

64. I refer to the examining staffs in the three places you have referred to?—Yes.

65. Whence do you draw your supply of spare parts?—Through the stores in Greymouth and Westport from Petone.

66. Do you keep a fairly substantial stock of spares on the West Coast?—Yes, we keep a fair stock.

67. Who is responsible for keeping that up?—The Foreman.

68. And if he runs short?—He would report to me.

69. How do you find the stock of spares maintained in Westland?—There has been no complaint at all about it made to me by the Foreman.

70. Do you know whether or not the requisitions are promptly complied with?—Yes, they are complied with. When we want them we get the goods. We have had no trouble so far.

71. We know that you have one Car and Wagon Inspector on your section?—Yes; he is the Foreman as well as the Car and Wagon Inspector.

72. And he inspects the stock, I presume?—Yes.

73. And he is under you, is he not?—Yes.

74. Have you ever given him or given the Workshops Foreman any instructions requiring the repairs to be curtailed?—No, certainly not.

75. Have you ever had such an instruction yourself?—No.

76. Are you given a free hand, then?—Yes, I have a free hand.

77. And your duty is presumably to maintain the stock in good condition?—I am responsible for maintaining the stock.

78. Certain wagon stock, according to the Loco. Code, is now lifted once only in three years?—Yes.

79. What do you say as to the sufficiency of that lifting?—It is quite sufficient. Three years is quite good enough for the wagon-stock lifting.

80. With regard to the canting of axle-boxes, supposing an axle-box becomes canted, what is done with it on your section?—It is lined up with a steel liner.

81. Does that depend upon the extent of the canting?—Yes. If it is very bad the horn-plate has to be taken off and welded up and brought into proper width again. That is done in the shops.

82. But if the canting is slight you put in a liner?—Yes.

83. Is that a modern or an old practice?—A very old practice.

84. Do you know of any objection to it?—No, and I cannot see any objection to it where there is a small cant.

85. I asked you before whether you thought the use of pieced buffer-springs or draw-bar springs affected the safety of the vehicle or train in any way, and you answered No?—Yes.

86. The practice, you say, has existed throughout your term and previously?—Yes.

87. To a small or considerable extent?—To a great extent.

88. Have you ever had an accident of any kind through the use of those springs?—No, we have had no accident.

89. Can you see how any accident could happen merely through the use of pieced draw-bar springs?—No, I cannot see how it would affect the safety in any way.

90. *The Chairman.*] You say that a large number of draw-bar springs are broken?—Yes.

91. Have you a sufficient staff to keep up with the work of repairing them?—Oh, yes, we can manage them.

92. If that is the case there should be no broken springs under the vehicles, or very few?—We have to take them in as we can get them. We cannot have them all in at once.

93. Then, I understand you have a staff sufficient, but there is a difficulty in getting the wagons out of service?—Yes.

94. What percentage of wagons do you think are running on your sections with broken draw-bar springs?—30 per cent. broken and pieced.

95. Or broken alone?—I should say there is not more than 15 to 20 per cent.

96. By broken alone, do you mean when the draw-bar is loose or when the draw-bar has been washered up?—When not been touched. Broken before we have done anything to it.

97. Those wagons are stopped as soon as possible, I take it?—Yes, as soon as possible.

98. And yet you think 15 per cent. are running with the springs in a broken condition?—Yes.

99. That is owing to the rapidity with which the breakages take place?—Yes, they are continually breaking.

100. Then this is a sore spot which has been known to the Department?—It has been known to me. Of course, we have never taken any actual account of broken springs; they have just been replaced and renewed by pieced springs, but the Department would know of the number by the number which has been issued.

101. Have you ever represented the large amount of breakage that is going on?—No, I have never represented it.

102. Do you come across many broken draw-bars?—No, very few. The majority of the broken draw-bars have been broken by derailments.

103. Have you observed for any length of time the behaviour of some specially pieced or repaired spring?—No, we have not taken any steps to notice it.

104. Have you formed any idea as to the breakages amongst the pieced and repaired springs—by "repaired" I mean washered up, as compared with breakages amongst new springs?—No, I could not say that.

105. Do you find many pieced springs broken again?—Yes, we find pieced springs broken.

106. How do the draw-hooks stand?—Very well.

107. What breakages do you get?—Very few. We get one occasionally.

108. *Mr. Marchbanks.*] How many carriages and wagons have you under your control?—In Greymouth there is a stock consisting of 1,046, and in Westport 775.

109. What is the stock of draw-bar springs at Greymouth and Westport?—At Greymouth we have twenty-three draw-bar springs, and at Westport fifty.

110. You have not sufficient springs to repair what you estimate are broken?—No; we are using bearing-springs for draw-bar springs now.

111. Are those coal-hoppers on the passengers-trains at all?—They are attached to mixed trains at times.

112. Have you had any broken axle-boxes?—A few.

113. On running trains?—We find them in the trains coming in. They may be caught against something, or the side of the wagons may have done it, but there is no danger. If there is they are noticed on the road.

114. *Mr. Maxwell.*] You said you had a broken axle on the Cape line?—No; off the line—it just came in.

115. Was it broken off or on the Cape line?—It was broken off the Cape line—just going over a crossing.

116. It came off the Cape line with a load of stone?—Yes.

117. It was overloaded?—Yes.

118. Who loaded the stone?—The Harbour Board.

119. So that your men are not responsible for the loading there?—No.

120. Do you remember what design the axle was?—No. It was on four-wheeled stock.

121. Was it a Harbour Board wagon?—No, an M wagon.

122. You said a great many springs were broken in rough shunting, and you spoke of the companies shunting. There are two companies there, are there not?—Yes, the Stockton Coal Company and the Westport Coal Company.

123. The Westport Coal Company has two mines some miles apart?—Yes, they have the Denniston and the Millerton Mines.

124. The Denniston terminus is only the company's branch?—Yes.

125. Do they do the shunting at that branch?—Yes. We keep an engine up there and draw the stuff out, for which they pay. We do the shunting, but they do a lot of the running down after they leave the incline. There is also another incline that runs it out on to the siding where they marshal the trucks.

126. You do part of the shunting and they do part?—Yes.

127. Then, at Granity Mine do they do all the shunting there?—Yes. It is done by gravitation.

128. Then there is the Stockton Mine, do they also do their shunting by gravitation?—Yes.

129. *Mr. Myers.*] With regard to draw-bar springs, have you a stock of those now in Greymouth and Westport?—Yes; in Greymouth we have of the draw-bar springs 23, and of the coil bearing-springs we have 63, while in Westport we have 50 draw-bar springs and 100 bearing-springs.

130. And have you had any advice of further supplies coming to hand immediately?—The stores are getting us some now. We have orders in the store for them.

131. And have you had any advice that they are coming forward immediately?—The Store-keeper told me he was getting them.

132. Do you know whether any springs went down to the Coast by the last trip of the "Kennedy"?—Yes, we have them.

133. Is that in addition to the numbers you have mentioned?—No, those are included.

134. But you have more on order?—Yes, more besides those on order.

135. *The Chairman.*] Are those springs you have drawn out of the stores, or are they springs the store holds or springs which you hold?—Springs which we hold.

136. You do not know what the stock in the stores is?—No.

137. It does not include the stock in the stores?—No.

(Witness called by Commission.)

ARTHUR WILLIAM WEST sworn and examined. (No. 61.)

1. *Mr. Myers.*] What are you?—A train-examiner at Greymouth.

2. How long have you been a train-examiner at Greymouth?—For ten years.

3. *The Chairman.*] You have formed some idea of the condition of the rolling-stock ten years ago as compared with the present time?—Yes.

4. How does the condition of the stock there now compare with what it was ten years ago?—Well, it has improved.

5. Is it in better condition or a worse condition?—It is in better condition.

6. How does it compare with the condition, say, four years ago?—It is in about the same condition now.

7. You do not think there has been any deterioration in the last three years?—No.

8. You have had some trouble with the breakage of draw-bar springs?—The usual. Just about the same as it has been for the last ten years.

9. We have been told there have been a very large number of breakages: is that so?—Well, I could not say there has been any greater number of late years—just about the usual number.

10. But the number of breakages has been large right through?—Yes, fairly large.

11. How many freshly broken draw-bar springs do you encounter in the course of a day's examination?—I could not tell you exactly. Some days I might have two or three, and on other days only one. Two or three a day would be about the average. Those are freshly broken ones.

12. You replace those with pieced springs?—Occasionally, but not always.

13. If there is a spring broken in two parts, what do you do?—We would have it replaced if it was badly broken, but we might have it made up to the 7 in. and then tighten it up and washer it. It all depends on what kind of fracture it is.

14. Can you form any idea as to how pieced and washered-up springs behave as compared with new springs: do you think they break more frequently?—No; they act just the same as a new spring.

15. You, therefore, do not think it is a waste of labour using a pieced spring or a washered-up spring?—No.

16. If you were to come across a broken bearing-spring what would you do?—I would replace it at once.

17. Have you many broken draw-bars?—Very, very rarely we get one.

18. Most of your draw-bars are the short draw-bars—non-continuous?—Yes; we have continuous and non-continuous, but most of them are non-continuous.

19. Do you come across many broken axle-boxes?—Occasionally, but they are very rare.

20. Where are they broken?—Sometimes in shunting operations. We might get a broken one in that way, but as far as train-running is concerned I do not suppose there would be any.

21. What part of the box do you find broken, as a rule?—On the side.

22. Do you ever find the backs of the boxes broken?—No, never the backs broken.

23. Have you come across any broken tires or axles?—No, never.

24. *Mr. Marchbanks.*] You said you may find one or two broken draw-bar springs in a day?—Yes.

25. How many wagons do you put through your hands in a day's examination?—I could not tell you the exact total.

26. Say, approximately, on a busy day would you have 200 or 300 coal-wagons coming in?—About that.

27. Do you examine the draw-bar springs on every vehicle?—Yes, as a rule.

28. On all coal-wagons?—Yes.

29. And you only get one or two broken in a day?—Yes, that is freshly broken.

30. Have you any idea of how many broken springs are in those wagons and running?—I could not say. There are not many. There are some pieced.

31. I do not mean those pieced, but actually broken?—There are very few running.

32. *Mr. Maxwell.*] Is it not a frequent occurrence when the river is bad that you may get nearly the whole of the coal-wagons stopped on the line?—Yes.

33. It is very difficult to give evidence as to how many you would see in a day when nearly all the stock may be there at one time?—Yes.

34. So that you have at times an opportunity of examining the whole lot at your leisure?—Yes.

WILLIAM JAMES WATSON SWORN and examined. (No. 62.)

1. *Mr. Myers.*] You are Workshops Manager at the Railway Workshops at Addington?—Yes.

2. How long have you been Works Manager there?—For two years.

3. Before that what were you?—I was at the Thames as Locomotive Inspector for one year, and before that I was on the West Coast, at Greymouth, as Workshops Foreman.

4. Were you there long?—Thirteen years.

5. You can tell us, I suppose, whether the practice of using pieced draw-bar springs was in existence when you were in Westland?—Yes, the whole time.

6. To a small or to a large extent?—As required. If the springs were suitable to return to the vehicles we put them in. Every broken spring is not suitable to be used a second time. It would depend upon the person dealing with them.

7. How many pieces do you put in to make up one spring?—Two pieces, or make pairs of them.

8. Did you ever use more than two pieces?—Never.

9. Did you ever on the West Coast use pieced draw-bar springs in carriages?—No.

10. Were those pieced draw-bar springs used in wagons on the West Coast because of a shortage, or for any other reason?—On the score of economy.

11. Did the use of the pieced draw-bar springs, in your opinion, impair the efficiency in any way?—In no way.

12. Or the safety of the train or vehicle?—It has nothing to do with the safety.

13. You can also tell us whether during your time on the West Coast liners were used to line up the axle-boxes which were slightly canted?—Yes, they were used throughout the whole period I was there.

14. At times a great deal of the stock is held up owing to shipping difficulties in Greymouth, is it not?—Yes, frequently.

15. Does that give any special opportunity to the shops and to the train-examiners to put right any defects there might be, such as broken draw-bar springs?—Yes, if the wagons are not under a load.

16. I am speaking of your own time: was advantage taken of any such opportunity?—Always.

17. You have been at Addington for two years?—Yes.

18. What staff have you there numerically?—615 or 620 men.

19. Have you any complaint to make as to the competency or efficiency of that staff?—No, no complaint to make. I am satisfied they are a very efficient body of men.

20. Will you give the Commission your opinion of the condition of the stock now as compared with its condition when you became Shops Manager at Addington?—It compares favourably at the present time.

21. What do you mean by that?—I mean that the stock has not depreciated in any way during the two years I have been at Addington.

22. Can you give us any further information to indicate what your comparison really is?—Steady progress is being made all the time in the matter of standardization, rebuilding vehicles, and other repairs as they go along. That is to say, when we get vehicles in and we find they want extensive repairs after a thorough examination the matter is reported, and we get authority probably to rebuild that vehicle.

23. That, of course, is how you keep the rolling-stock up to date and keep it maintained?—Yes, that is so. Each time a vehicle is overhauled it is really improved. That is to say, when a vehicle leaves the shop it should be a better vehicle than when it arrived at the shop irrespective of the purpose for which it has been sent. Probably there are other repairs or additions and improvements made on the vehicle prior to it leaving the shop.

24. Although it was only sent in for certain purposes, you may effect additional repairs or improvements?—Yes; that is, to standardize each vehicle before leaving the shop.

25. You do construct vehicles at the Addington shops as well as do repairs?—Yes.

26. Which class of work takes precedence, construction or repairs?—Repairs.

27. Is there any special order or instruction to that effect?—Well, it is a general instruction that repairs must be kept up to keep the rolling-stock in commission.

28. Then, we may take it that you do not subordinate repair work to construction work?—Never.

29. Have you in any way during your period of two years at Addington curtailed the repair work?—No.

30. Has it been curtailed in any way?—No, it has not.

31. You have a Locomotive Engineer, of course, with headquarters at Christchurch?—Yes.

32. Do you see much of him at the works?—He always goes through the shops when he is in Christchurch. He is not always here, but pays a daily visit to the shops when he is in Christchurch.

33. And are you yourself in the shops every day?—Oh, yes, very much so.

34. You are about the shops all day?—Yes, the greater part of the day.

35. What is the practice in this district so far as concerns the sending into the shops of vehicles: who sends them into the shops?—The Car and Wagon Inspector.

36. And the train-examiners?—Oh, yes. The train-examiners send them in through the Car and Wagon Inspector, I presume. They are under the jurisdiction of the Car and Wagon Inspector.

37. So that you receive into the shops vehicles from the various places on the line?—Yes.

38. And you receive with each vehicle a form, do you not?—We have a form for the necessary repairs—that is, Loco. 43.

39. And I think you have already said that if any further repairs are required, or a vehicle could be improved for the purpose of standardizing, that is done?—Yes, that is done every time.

40. After a vehicle is repaired in the shops is it inspected or examined by any one in the shops?—Yes; first of all by the leading lifter, and then by the leading carpenter who is in charge of the wagon-repairs, then by the Foreman, and then the Car and Wagon Inspector finally comes out to the shops and inspects all vehicles along with the leading carpenter and the leading lifter.

41. So that they are examined, first of all, by the leading fitter and the carpenter?—Yes.

42. It has been suggested that the condition of the rolling-stock has gone back and deteriorated; say, during the last three years: do you think there is any justification for any such suggestion so far as concerns the rolling-stock of the South Island which comes into the shops and leaves the shops?—No, I certainly do not think so.

43. The painting work is done in the shops, is it not?—Yes.

44. What have you to say in regard to the standard of painting?—I consider the standard at the present time is good.

45. Has there been any instruction to curtail painting?—None whatever.

46. Has it been, in fact, curtailed?—No.

47. Your shop is a very large one we know. Have you come across any instance of broken axles during your two years there?—There was one wagon which came to the shops with a broken axle.

48. Any carriages with broken axles?—No.

49. Have there been any vehicles with broken tires during your time?—No, none at all, neither carriages nor wagons.

50. Have you had any broken bearing-springs?—Yes; on wagons, but there have not been many.

51. What is done in the case of a broken bearing-spring?—It is replaced by a new one.

52. Have you ever known a vehicle to be in service with a broken bearing-spring?—No.

53. Broken draw-bar springs are more frequent, are they not?—Yes.

54. Do they occur mostly in this district on cars or wagons?—On wagons.

55. Why is that?—They are subject to more rough usage than the cars. They are subjected to a great deal more shunting and handling generally.

56. I think you have a record, have you not, of the number of new draw-bar springs that have been used?—Yes, for the year ending the 31st March, 1912, there were 1,275 for wagons and 75 for cars.

57. Is that the number of broken draw-bar springs replaced, or is it the number of broken draw-bar springs replaced by new springs?—Those replaced by new springs. That is the quantity of new springs put in.

58. Will you give the numbers in the different years?—In 1913, 1,315 wagons and 89 cars; 1914, 1,107 wagons and 93 cars; 1915, 1,122 wagons and 68 cars; 1916, 1,202 wagons and 86 cars.

59. That, of course, is the last completed year?—Yes.

60. Have you, in addition, used pieced draw-bar springs?—Yes, certainly.

61. The numbers you have given us of new draw-bar springs used are the numbers, I take it, put in at the shops only?—Yes, at the Addington works.

62. They are the number of springs in vehicles?—Yes.

63. You say you have also used pieced draw-bar springs?—Yes.

64. In cars, wagons, or in both?—Never in cars—only in wagons.

65. And what is the greatest number of pieces you have used in making up a pieced draw-bar spring?—Two pieces.

66. Have you any record of the number of pieced draw-bar springs that you have placed in wagons?—No, we did not keep a record.

67. But can you tell the Commission whether they have been few or many?—I cannot say that there are very many. We have a number in, but I could not state the exact number.

68. Have you had any hesitation in using them?—No, none whatever. I consider it good business to use them.

69. When you have used the pieced draw-bar springs can you say if you had in stock new draw-bar springs?—Yes, every time.

70. Did you use the pieced draw-bar springs by reason of any shortage of new springs?—No, not on account of any shortage.

71. You have had, I suppose, a big heap of pieces?—Yes, we always have.

72. You use them pieced because you consider it good business?—Yes.

73. Has it ever occurred to you that the safety of the train or vehicle or of any person on the train is affected by the use of those pieced draw-bar springs?—No, certainly not; they cannot be.

74. Is it possible, in your opinion, for the use of a pieced draw-bar spring to prejudice a vehicle so far as its wear-and-tear is concerned?—No, in no way whatever.

75. Is the wear-and-tear increased?—No, in no way.

76. And how have you found pieced draw-bar springs work?—Equally as well as whole springs.

77. Supposing you find there comes into the shops a vehicle with one or two pieced draw-bar springs, and repairs are being effected to that vehicle, do you disturb the pieced draw-bar springs?—No, not unless it is necessary for some other purpose to do so. We might have to take out the draw-bar for something else, and then we would disturb the spring, but not for the purpose of taking out the spring.

78. What would you do with the pieces then: would you put in a new spring or put back the pieces?—If they were considered serviceable we would put them back.

79. You have a storekeeper at Addington, have you not?—Yes.

80. And do you apply to him for your stores?—Yes.

81. Do you ever go into the stores yourself?—Yes, daily.

82. Is there a large stock kept there?—Yes, a very fair stock.

83. Are you delayed in any way with your work by reason of supplies not being available?—No; we have always a stock in the shops irrespective of the store.

84. But you run out from time to time, I take it?—We are very careful to avoid that. We are very seldom short of spares. They have a stock in addition to ours, and we can always get spares from the store. We do not hold all the stock, as it were.

85. Have you had any difficulty in obtaining supplies when you required them?—None whatever. We could get them in half an hour if we wished to.

86. *The Chairman.*] Since you have been at Addington have you ever received any instruction, written or oral, to reduce the amount of repairs of vehicles coming into the shops?—No, sir.

87. You are certain on that point?—Quite certain.

88. Have you received any such instructions with regard to painting?—No, sir.

89. *Mr. Marchbanks.*] In connection with your stock of springs, have you ever run out of your stock that had been issued for maintenance purposes and had to use those that had been issued for new vehicles?—No, I cannot say we have. I do not remember any occasion of that arising.

90. Has there been any shortage since the war broke out on account of the war conditions?—Practically we have been getting short of springs, and we have made inquiries to obtain them from other districts. In case we are getting low the Storekeeper gets some from Dunedin, but there has been practically no shortage.

91. And those that have been issued for A.O.L. have not been used for maintenance?—They may have been. I could not say definitely. If we had none on hand and a vehicle came in for repairs we would have no hesitation in taking them from A.O.L. stock.

92. And replace them later on?—Yes.

93. Have you formed any opinion as to which type of draw-bar spring is the best?—We only use one kind at Addington, the 4310—that is the standard draw-bar spring.

94. Have you any round section with the double coil?—We have not used any.

95. How does the 4310 compare with the previous spring so far as breakages are concerned?—The 4310 is a stronger spring than the bearing-spring was originally. One is a 5-ton spring and the other a $3\frac{1}{2}$ -ton spring.

96. That means they come up solid with $5\frac{1}{2}$ tons and $3\frac{1}{2}$ tons pressure?—No, it requires $6\frac{1}{2}$ and $4\frac{1}{2}$ tons to compress them solid.

97. Have you observed with which class of spring you get most breakages?—We are only using one, and therefore I cannot say. Prior to using the 4310 the breakages were greater than they are at the present time.

98. The previous spring was the 4414?—Yes.

99. I think you said you had replaced 1,288 springs in the cars and wagons at the shops?—Yes.

100. That is apart from what is put in in the yard?—That would be at Christchurch, yes—that would be apart from that.

101. Have you any idea of the number of vehicles which pass through your hands?—I think in the South Island there are a little over 10,000 vehicles, and I think apportioned to the Christchurch district there are, in round numbers, about 4,000.

102. That would mean 1,288 new springs had been put in at Addington for 4,000 vehicles?—Yes.

103. That is apart from any that may have been put in in the Christchurch yard?—Yes.

104. *Mr. Maxwell.*] In regard to the last question asked of you, of course the stock runs through from Bluff to Hurunui?—Yes.

105. And the vehicles you get in your district are constantly varying?—Yes.

106. Your operations are not confined to any particular stock?—No, it may come from Invercargill or Dunedin and be repaired here.

107. During the last four years have you been replacing any old axles with new ones of larger diameter?—Yes, they are steadily going on.

108. What sort of axle are you putting in?—They are on different classes of vehicles and the size varies. The old kind was $3\frac{1}{2}$ in., and we get some $3\frac{1}{2}$ in., and some of the larger vehicles carry larger axles.

109. I suppose you consider the stock is safer with an axle of larger diameter than with one of smaller diameter?—Yes.

RICHARD ARTHUR HAYDON sworn and examined. (No. 63.)

1. *Mr. Myers.*] You are Foreman Carpenter in the Railway Workshops at Addington?—Yes.

2. And you have been in that capacity for how long?—About fifteen months now.

3. Have you been present while Mr. Watson was giving his evidence?—Yes.

4. What are your duties as Foreman Carpenter?—I look after the carpenters in regard to lifting work, the material, and construction of all new work.

5. I simply want now to refer to the repair work: Have you charge of the repair work so far as the carpentering is concerned?—Yes.

6. And when the repairs are effected, do you make any inspection?—As a rule I make it a practice to go round and make an inspection before the Car and Wagon Inspector comes to inspect, and see it is all right for him when he comes along.

7. And then the vehicles are inspected and passed by the Car and Wagon Inspector?—Yes, finally.

8. Does it ever happen that he finds something that requires attending to which has been overlooked by the workshops men?—It is quite possible he might find something, but nothing serious. Everything is done correctly by the time he comes.

9. I want to ascertain whether or not the inspection made by the Car and Wagon Inspector is a rigid inspection?—Yes, very rigid so far as the Car and Wagon Inspector in Christchurch is concerned.

10. Where were you before you became Workshops Foreman Carpenter at Addington?—I was at Hillside for about two years.

11. Speaking of your fifteen months' experience at Addington, can you say whether, so far as you can see, the condition of the stock is well maintained, or does it become in a worse condition as time goes on?—It has certainly not got into a worse condition. We are endeavouring to standardize wherever we can, and to improve it.

12. That is the endeavour of the workshops?—Yes; at the car-shops, at all events.

13. *The Chairman.*] Have you received any instructions during the past three years to reduce the amount of repair work done on carriages or wagons?—No, I have received no such instructions, and do not know of any such instruction being issued.

14. When cars and wagons come in for repairs, on what lines do you carry out the repairs: do you do all the repairs you can to those cars or wagons, or only do a portion of them?—Everything is thoroughly overhauled.

15. Is there as much painting done nowadays as was done three years ago?—I think so. I think it is quite equal, although I do not have anything to do with the painting. From my own observation I think it is quite equal to what it was three years ago.

16. *Mr. Marchbanks.*] Have you as many men employed now as two years ago or when you first came here?—The same number but one as when I came here. I have lost one who has gone to the war.

17. In repairing wagons do you use pieced springs at times?—Yes.

18. Have you had any instructions to use pieced springs?—No, no definite instructions. It has been the practice for a number of years.

19. And there never was any instruction about them?—Not that I am aware of.

LOGAN PATERSON sworn and examined. (No. 64.)

1. *Mr. Myers.*] You are Car and Wagon Inspector in the employ of the Railway Department, with headquarters at Christchurch?—Yes.
2. What is your district?—The South Island main line and branches north of Studholme.
3. How long have you been Car and Wagon Inspector on that section?—Twenty years.
4. Have you a list of your examining-stations in that district?—Yes; they are Christchurch, Lyttelton, Ashburton, Timaru, Rangiora, and Culverden.
5. Have you an examining and repairing staff at each of those stations?—Yes.
6. Is there a stock of spares kept at each of those stations?—Yes.
7. For the purpose of effecting minor repairs?—Yes.
8. And the examiners obtain their supplies from where?—From Christchurch. Christchurch is the main depot and draws its supplies from Addington, and then Christchurch distributes to the different stations as required.
9. Is that done through you?—Yes.
10. Have you any difficulty in getting supplies for your main depot at Christchurch?—No, none whatever.
11. And is there any delay in sending supplies as and when required to your out-stations?—No, nothing to complain about. They do not complain to any extent. Of course, they get a bit irritable at times. They may order a thing to-day and want it the following day, and perhaps it may be a week before they get it, but it is nothing serious.
12. Do your train-examiners at those various stations decide what vehicles are to go into the shops for repairs?—The ones that go into the shops have to go to Christchurch, and the leading man in Christchurch will decide that. At Timaru the examiner there does it for their shop.
13. Do you make any inspection here at Christchurch?—Yes.
14. And is it left at times to you to determine whether or not a vehicle is to be sent into the shops?—Yes, if they have any doubt they hold the vehicle for my inspection.
15. What is the condition of the stock at the present time?—The stock is being kept up in a thoroughly safe and efficient condition.
16. How does it compare with the condition, say, three or four years ago?—It is equally as good to-day as it was three years ago.
17. When you say it is equally as good, just what do you mean? In the first place, have there been any improvements in the equipment during that time?—Yes, improvements are continually being carried out in the workshops. When anything is worn it is removed and standardized, new horn-plates are put on to the wagons, and suchlike.
18. Do the improvements you have referred to and the standardizing generally keep the stock just as good, or do they tend to improve it?—They have a tendency to improve it.
19. Well, has it been improved, in fact, by this standardization?—Yes, of course, it has.
20. When you speak of the condition of the stock being equally as good or being improved, have you in mind the painting as well as everything else?—Yes.
21. How is the painting kept up—is it as good as it used to be?—Yes; in fact, it is better.
22. I suppose you go about from time to time amongst your out-stations or examiners?—Yes.
23. How often do you inspect?—I make a periodical visit once a month as near as I can. Sometimes it might be six weeks or two months before I get round to certain stations.
24. When you are in Christchurch do you make any inspection of vehicles in the yard here?—Yes.
25. I suppose you know precisely the duties which are performed by your train-examiners?—Yes.
26. Can you say whether or not all the trains which pass through Christchurch are examined at Christchurch?—Yes, they are all examined.
27. Of what does that examination consist, and in this respect you can distinguish between various classes of trains if that distinction is necessary? Speaking generally, of what does the examination consist?—Sounding of the wheels and looking for cracked axle-boxes, examining the axle-boxes for heating, and examination of the undergear, draw-bars, bearing-springs, draw-bar springs, and underframe generally, and to see if there are any broken windows and suchlike in the carriages.
28. So far as the wheels are concerned, and the feeling of the axle-boxes, may it be taken that that is done in respect of every train?—Yes. Of course, we have certain exemptions in regard to certain trains just going out which are authorized.
29. Then, you have spoken of the inspection or examination of the undergear, does that apply to every train?—Yes.
30. And does the inspection of draw-bar springs—does that apply to every train?—Yes.
31. Do you mean that the examiner examines every draw-bar spring of every train?—Yes. When I say every train, there may be a train passing through, for instance, which may not stop for more than two minutes. They would not have time in that case to make a minute inspection, but at terminal stations they do so.
32. Take, for instance, the case of an express train, would they have time to examine every draw-bar spring carefully?—Yes, at Christchurch they have.
33. You have spoken of exemptions from examination: are they arriving trains or despatched trains?—They would be short-distance despatched trains which are outside the regular hours of the train-examiners.
34. Have you any particular exemptions in mind?—Just specials going, say, to Islington early in the morning, or to Belfast. They would catch them as they came back.

35. I asked you just now about the examination of draw-bar springs: have you used pieced draw-bar springs?—Yes.

36. Over what period?—As far back as I can remember.

37. And you have been here twenty years?—Yes.

38. Have you used them at all times or only when there is a shortage?—Principally when there is a shortage.

39. What do you mean by that? Have you used pieced springs when you have had other springs in stock?—Yes.

40. Why have you done that?—On the score of economy. It would be wasting material not to use them.

41. Have you used them on vehicles other than wagons?—No, only on wagons.

42. And in how many pieces?—Two.

43. You know that the period for lifting certain classes of wagons is once in three years?—Yes.

44. Is that, in your opinion, sufficiently frequent?—Yes, that is ample.

45. *The Chairman.*] The number of breakages of draw-bar springs is fairly large, is it not?—Yes.

46. Have you any difficulty in keeping up the repairs of those springs?—No, sir, I have not.

47. Have you a sufficient staff to deal with the repairs?—Yes. Of course, if they get too many the worst of them are picked out and sent to the larger shop at Addington.

48. At all events, the breakages of these draw-bar springs gives you a considerable amount of work?—Yes.

49. If the breakage of these draw-bar springs could be prevented it would be a big saving?—Yes, it would be.

50. Have you an ample staff to deal with the repairs, putting the breakage of draw-bar springs aside?—Yes. I could employ half a dozen more if it came to that, but if the repairs get too many I simply send the heaviest to Addington.

51. There is no difficulty in getting them done there?—No.

52. What accommodation have you for lifting?—I have a shed in Christchurch about 70 ft. long with a pit, which holds about three or four vehicles, and a siding which would hold about eight vehicles.

53. Is there any other shed accommodation at Lyttelton or elsewhere?—No, none at Lyttelton. At Ashburton there is shed accommodation, and at Timaru they have a shed also, but they have more standing-accommodation there.

54. Do you consider the accommodation sufficient?—I could do with more, and it would be better if there was more.

55. From the evidence we have had there appears to be two different methods of piecing springs which have been used. The first method is to take out the broken portions of the spring entirely and select two pieces from a separate heap which will make up 7 in. The second method, which is adopted in the case of wagons, is that if a spring be only broken in two parts, to allow those two parts to come together and be washered up with a washer behind. That represents the practice?—Yes, we do both of those methods.

56. Have you made any special observation of the springs in this way as to how they behave in practice?—No, no special observation.

57. What is your idea—do you think they break up rapidly afterwards or give good service afterwards?—I think they give good service afterwards.

58. As regards the traction of a truck and the resistance to buffing, do you think they give good practical service in that way?—Yes.

59. You cannot expect them to be as good as a whole spring?—No, they would not be unless they had the same range. If they had the same range they would be quite as good in my opinion.

60. You think that if a pieced spring is brought up to the same length it is as good as a whole spring?—Yes.

61. But a washered spring is hardly as good?—Yes.

62. *Mr. Marchbanks.*] When the train-examiners are making their examination, do you think they really actually look at the draw-bar springs, or simply examine the buffers and judge by the position of the buffers whether the spring is sound or not?—They look at every spring.

63. I understand you to say you have been using pieced draw-bar springs for twenty years?—Yes.

64. Have you used them largely?—No, not very largely.

65. Well, unless they break up rapidly there must be a large number of them still in the wagons?—Yes, there is a large number still there.

66. I think you said that the condition of the stock has improved owing to standardization. I do not quite see what you mean by that. The stock may have a good deal more money spent on it, but the condition must really depend upon the maintenance whether it is standard or not. If you have a standard range with sharp tires you would not say they are in good condition?—No, not with sharp tires, but a wagon that is getting repaired means making it as good as a new wagon.

67. But the fact of being a standard wagon, it does not follow that the condition generally is better. It depends on the amount of repair done to the undergear?—Yes. A wagon that has been repaired is better than a wagon that has not been standardized.

68. It depends on the amount of money spent on the undergear?—Yes.

69. Is there much rusting of the steel and undergear?—No; we might find it in special lines.

70. How do the sheep-wagons stand?—Well, we have ten that pit badly. They get equally repaired with the others, but still they continue the pitting. I consider it is bad material.

71. How are the R class of wagons standing?—Very well; there is no trouble.
 72. And the U wagons?—Just the same. It is only the ten wagons which are pitting badly, and we watch them pretty closely.
 73. Can you give us any idea of the number of draw-bar springs you put in in a year apart from those put in at the Addington yard?—Yes. In 1916, 317; 1915, 370, 1914, 378, 1913, 371; and 1912, 380.
 74. Those are all new springs?—Yes.
 75. You could not say how many springs were pieced?—No, I have no record of that.
 76. *Mr. Maxwell.*] You spoke just now about renewing wagons. If you have an old-pattern wagon with small-diameter axles, old narrow horn-plates, and lighter hooks which are weaker, and you reconstruct that wagon up to the newer standard, is not that a better wagon?—Yes, certainly.
 77. In regard to the examination of trains, take the express that runs through from Christchurch to Invercargill, the vehicles on that train are inspected at ten stations *en route*?—Yes.
 78. That train undergoes an examination several times a day?—Yes.
 79. The amount of examination varies with the train: some trains are only examined once a day, while others are examined seven times a day?—Yes.

(Witness called by Commission.)

HUGH THOMAS COX sworn and examined. (No. 65.)

1. *Mr. Myers.*] What are you?—A lifter employed by the Railway Department at Oamaru.
 2. How long have you been at that station?—Eleven years and nine months, and for some time as relieving train-examiner. I have been in the employ of the Department all that time at Oamaru.
 3. *The Chairman.*] During that eleven years you have seen a good deal of the rolling-stock?—Yes.
 4. What is your idea as to the condition of the rolling-stock?—I reckon it is in better condition to-day than when I first started.
 5. And, say, as compared with its condition three years ago?—I reckon it is better.
 6. Why do you think that?—Because they have improved it so much during the last few years by standardizing the wagons and bringing them up to modern ideas.
 7. Can you give me any instance how that has benefited the stock?—It has improved it and made it much stronger.
 8. There are a considerable number of broken draw-bar springs, are there not?—Not a great many; there are a few.
 9. More than there used to be?—No.
 10. Do you think the breakages remain about the same?—Yes.
 11. How many broken springs do you expect to detect in a week?—Sometimes we might get three and sometimes none.
 12. Do you have any trouble with hot boxes?—We get a few occasionally.
 13. Is the number increasing or diminishing in comparison with years gone past?—I could not say.
 14. When a box is found to be hot the wagon is sent in to you to lift?—Yes.
 15. Do you find more draw-bars broken to-day than there used to be in the past?—No.
 16. The draw-bars are heavier now than they used to be?—Yes, they are.
 17. What is your general idea of the condition of the stock which passes through your hands?—It is very good indeed.
 18. Do you consider it is perfectly safe?—Yes, quite safe, and in safe running-order.
 19. Have you noticed any falling-off in the painting?—No, sir.
 20. Do you think the painting has been about the same for the whole period?—It has been better.
 21. Do you come across many canted axle-boxes?—No.
 22. In the event of a vehicle being handed over to you with a broken bearing-spring, what action would you take?—Replace it with a new one always.
 23. *Mr. Marchbanks.*] Have you put in many pieced draw-bar springs?—I have put in a few, but not many. I put them in every now and again as I get them. If I have two good pieces I put them back.
 24. Have you had any instructions regarding the use of pieced draw-bar springs?—No; it is the ordinary practice.
 25. When you have been acting as train-examiner in the early morning mail-trains I think you cannot examine all the draw-bar springs, but in the case of ordinary trains do you examine them?—Yes.
 26. Do you actually look at them?—Yes, and both on the mail-trains too if we want to.
 27. *Mr. Myers.*] You say you use pieced draw-bar springs when you have a couple of pieces?—Yes.
 28. Are you referring to wagons only when you say that?—Yes.

(Witness called by the Commission.)

CHARLES NIGHTINGALE sworn and examined. (No. 66.)

1. *Mr. Myers.*] You are employed by the Railway Department as train-examiner at Oamaru?—Yes.
2. Are you the only examiner at Oamaru?—No; there is another besides myself.
3. And you have how many lifters?—Two lifters.
4. How long have you been train-examiner at Oamaru?—Ten years as train-examiner and seven years as lifter.
5. *The Chairman.*] What is your opinion as to the general condition of the rolling-stock to-day as compared to its condition, say, five years ago?—I consider it is about the same as usual.
6. What is its condition to-day as compared with, say, twelve years ago?—It is about the same.
7. Your opinion is that the rolling-stock of the railways has remained very much in the same condition?—Yes.
8. And what condition would you say it was in—a faulty condition or in a safe running-condition?—In a safe running-condition.
9. You have come across a certain number of broken draw-bar springs, have you not?—Yes, I have found a few.
10. What repairs do you find are most frequently required on vehicles?—As a rule it is generally the draw-bar springs.
11. They give you most trouble?—Yes.
12. You are aware that pieced springs are being used?—I am aware of it, but I do not do repairs.
13. Have you come across breakages in pieced springs as well as whole springs?—No.
14. Next to the failure of the draw-bar spring, what is the most troublesome failure?—The hot boxes.
15. To what do you attribute the hot boxes?—Partly the wear-and-tear. They are pulled out with a good load on and are constantly wearing, and when they are run continuously each day they are more likely to run hot.
16. Have the number of hot boxes increased of late years in proportion to the increase of traffic?—About the same.
17. I understand it is now the practice to keep the L and N wagons out for three years instead of two years before lifting: has that had any effect on the running of hot boxes?—Not at all. I think they are lifted quite often enough.
18. Do you meet with many broken draw-bars?—I have met with none during the last eight or nine months.
19. Where do they usually break?—Generally near the eye in the body of the rod.
20. *Mr. Marchbanks.*] Do you come across many defects in the Westinghouse gear?—It all depends on what part.
21. The defects that cause the vehicle to be cut out?—A few. They average about one a day or four in a week.
22. Is that owing to leaky triples or leaky brake-cylinders?—Leaky brake-cylinders.
23. In your examination of the draw-gear do you see many pieced springs in use on wagon stock?—Not such a great number.
24. Can you form any idea as to the percentage?—I have no idea. It would be equivalent to about two a week.
25. Do you come across many broken draw-bar springs?—They average about four a week.
26. Have you time to really examine the draw-bar springs of every vehicle?—Not on every vehicle.

(Witness called by the Commission.)

CHARLES HECTOR WILLIAM ARCHER sworn and examined. (No. 67.)

1. *Mr. Myers.*] You are a train-examiner in the employ of the Railway Department at Timaru?—Yes.
2. Are there any other train-examiners employed there?—Yes, one other, and one lifter.
3. How long have you been a train-examiner at Timaru?—Close on fourteen years at Timaru, except for twelve months' broken time in Christchurch.
4. *The Chairman.*] How do you think the condition of the rolling-stock compares to-day with the condition of the stock, say, fourteen years ago?—Good. It compares well with it.
5. What is the condition of the stock at the present time, generally speaking?—Good.
6. Is it safe to run?—Yes, quite safe.
7. Have you seen any evidence of risks being taken?—None whatever. We do not run any risks.
8. In what condition do you find the tires?—Generally good.
9. Do you come across any sharp flanges?—Not sharp: not detrimental to the running of the wagons.
10. If you met with a vehicle with sharp flanges, how would you treat it?—If it was dangerous to run it I would take the wagon off and apply for a pair of wheels to replace the sharp ones.
11. Do you meet with many broken bearing-springs?—No, we meet with only a few.
12. Are they coil springs or laminated springs?—Coil springs.
13. How long ago did you meet with one?—Some time ago—four or five months ago.
14. Was it a coil or laminated spring?—A coil spring.

15. On a car or wagon?—On a wagon.
16. Do you meet with many broken draw-bar springs?—Not a great many; we meet with a few.
17. And with pieced springs?—I am unable to say whether they are pieced springs or broken springs before.
18. It is hard to discriminate between a pieced spring and whether a complete spring before?—Yes.
19. Are you much troubled with hot boxes?—We have a few, but we do not get a great deal of trouble.
20. Is the trouble increasing or remaining about the same?—About the same.
21. There is nothing you wish to bring under our attention as being a defect in the upkeep of the railway rolling-stock?—Nothing at all.
22. You think it is all satisfactory?—Yes, all satisfactory.
23. *Mr. Marchbanks.*] Are there many broken draw-bar springs in wagons running on ordinary goods-trains?—No, not a great many.
24. What percentage, do you think?—I find about one or two a day.
25. How many wagons do you examine?—It all depends. Some days we examine a few hundred—the number varies.
26. Did you work Timaru yesterday?—Yes.
27. Did you find many broken draw-bar springs?—Yes, I found about three.

(Witness called by the Commission.)

ROBERT HENRY EMMS sworn and examined. (No. 68.)

1. *Mr. Myers.*] You are a train-examiner at Christchurch, employed by the Government Railway Department?—Yes.
2. How long have you held that position?—Three months.
3. What was your previous position in the Railway service?—A lifter at Addington.
4. How long were you there as a lifter?—Three to four years.
5. So that during the last four years or thereabouts you have had to do with the railway rolling-stock going through Christchurch?—Yes.
6. The last three months at the stations and previously at the shops?—Yes.
7. Before that were you employed in the Railway service?—Yes, I have been in the service just over six years.
8. *The Chairman.*] Have you noticed any alteration in the condition of the stock during the three years you have been on the road lifting and examining? How does the condition compare to-day with what it was three years ago—do you think the stock is in worse order or better order?—I do not notice any difference; it is in about the same running-order.
9. You have not noticed any deterioration?—No.
10. Have you noticed any improvements in the stock?—Yes, I have.
11. Have those improvements been valuable improvements, do you think?—Yes.
12. Tending to reduce the repairs?—No, not in that way, but for the safety of the public.
13. You consider the stock in safe order at the present time?—Yes, generally speaking.
14. *Mr. Marchbanks.*] Do you get many broken draw-bar springs during your examinations?—Yes, a few.
15. Do you put through and examine many goods-wagons in a day?—Yes, a good many; but I could not give you an idea of the number.
16. Would you average two hundred in a day?—I would not like to give an idea.
17. How many broken draw-bar springs would you find in a day's work?—I could not give you an idea, but not very many badly broken.
18. Do you come across many pieced springs?—It is difficult to tell a pieced spring from a broken spring.
19. Surely it is slack if it is broken?—Not necessarily so; it may be tightened up.
20. Then it becomes a pieced spring?—Yes, but it is a broken spring all the same.
21. Look at those two pieces on the table. If you get two pieces like that which make up the proper length and you put washers in, they will act just as well?—There may be a slackness on the buffer at the other end.
22. But if tightened up with two proper pieces would they not act as good as a new spring?—Oh, yes.
23. If a spring is loose you consider it is broken?—Yes.
24. And what happens?—If badly broken we have to send the vehicle for repairs. If there is a good deal of play we have them taken up and sent for repairs.
25. Do you come across many broken axle-boxes?—No; I do not think I have come across one since I have been in the yard.
26. Or broken draw-bars?—No, no broken draw-bars.
27. *Mr. Maxwell.*] Whenever you find a spring slack on the bar do you not tighten that up?—It depends on whether it has much play.
28. If you find there is a lot of play backwards and forwards, do you not tighten them up?—Yes, if we consider they are too slack.

(Witness called by the Commission.)

JAMES TIMBS sworn and examined. (No. 69.)

1. *Mr. Myers.*] What is your position in the Railway service?—Leading lifter, employed at Christchurch.
2. How long have you been lifter there?—Four years, and I have been about twenty-four years in the employ of the Department.
3. Your work during the last four years has been of the same character?—Yes, just about the same. For the first ten months I was examining, and since then I have been leading lifter.
4. *The Chairman.*] During the time you have been leading lifter have the repairs increased?—No, they are just about the same.
5. You have been able to keep the condition of the stock up to what it was previously?—Yes.
6. Has the condition of the stock deteriorated in any way?—No, I cannot say it has.
7. How does it compare with what it was, say, six years ago?—Similar. If anything it has slightly improved.
8. If you were asked your opinion generally as to the condition of the stock, what would you say?—Good.
9. Have you noticed any defects in the stock which you desire to point out to this Commission?—No.
10. You come across a number of broken draw-bar springs, I believe?—Yes.
11. We have been told that the replacing of the draw-bar springs is the heaviest portion of your work?—Yes, the chief work we do.
12. Do you use pieced springs?—Very rarely.
13. You put in whole springs?—Yes.
14. I suppose you come across a great number of pieced springs?—No; I very seldom come across a pieced spring.
15. So that when you have a vehicle with a broken spring you almost invariably renew it with a whole spring?—Yes, we do in Christchurch.
16. What is your opinion as to the most troublesome repair next to replacing broken draw-bar springs?—Hot boxes.
17. Is the number of hot boxes increasing of late years?—No, about similar to what it always has been.
18. Do you have many broken draw-bars?—No, not a great many.
19. Or canted axle-boxes?—Very few.
20. What do you do when you come across one?—We put liners in the sides if it is a certain class of box, but if the vehicle wants repairs we send it to Addington.
21. Do you consider the staff big enough to cope with the number of repairs at the present time?—If we cannot do all the repairs we send some to Addington, and the work is done.
22. What proportion of your men's time is taken up in replacing broken draw-bar springs?—About two-thirds of their time, I should say.
23. And the remainder of one-third is taken up in general repairs?—Yes.
24. Do you find you get many broken draw-hooks?—Occasionally, but not a great many.
25. *Mr. Myers.*] You say that two-thirds of the time of your men is taken up in attending to broken draw-bar springs?—Yes, and draw-gear generally.
26. When you say that do you mean two-thirds of one man's time or how many men?—Of one man. We have only one lifter in the shop.
27. So that two-thirds of one man's time is taken up in repairing draw-bar springs and draw-gear generally?—Yes. We have four train-examiners and one lifter.
28. *The Chairman.*] How many springs do you consider would be a fair thing for a man to put in in an average day?—It is hard to say.
29. Supposing you had two men working continuously on draw-bar springs over a period of, say, one month, what number would you expect them to put in on the average in a fair day's work?—It is a very difficult thing to get at. We come across some draw-bar-spring nuts that you have to cut in the wagons, and it takes half a day sometimes, and at other times it may take only half an hour.
30. But what would be the average over a long period—some days you have a good run of work and on other days a bad run?—It is difficult to give an opinion. I think if a man did five a day, taking it all through, that would be all he could do.
31. Five springs or five vehicles?—Five vehicles. That is for one man.
32. *Mr. Myers.*] That would be ten springs?—Yes.

(Witness called by the Commission.)

EDWARD EDGAR TAYLOR sworn and examined. (No. 70.)

1. *Mr. Myers.*] You are a lifter employed in the Railway service at Timaru?—Yes; I have been there as lifter for four years.
2. Had you done work as a lifter previously?—Yes, at Addington. I was there for about two years. Then I was four or five years in Christchurch as a train-examiner and lifter after coming from Addington.
3. So that during the whole of your service you have had passing through your hands one way and another the stock in this district?—Yes.
4. *The Chairman.*] In what condition do you consider the stock is at the present time?—In good order.
5. And perfectly safe?—Yes.

6. In what condition do you consider it was six years ago?—In good satisfactory order and condition.

7. Has there been any improvement since then or any deterioration?—There have been improvements.

8. What do you find to be the most troublesome repair—the repair you have most to do?—Well, the buffer-springs, as a rule.

9. And next to the buffer-springs?—We have hot boxes.

10. And next to them?—The general repairs.

11. Those two stand out prominently?—Yes.

12. I suppose there are more broken draw-bar springs than hot boxes?—There is a fair number.

13. How many broken draw-bar springs have you got to replace in a day on the average?—Some days I may put three in and other days only one. I average about two a day.

14. How many hot boxes would you come across in a day?—Sometimes none, and sometimes there might be one. We average about one in two days.

15. What is your idea as to the cause which leads to the breakage of the draw-bar springs—have you formed any opinion?—They get more usage now and more rough handling.

16. Where do they get that rough handling?—In the yard.

17. You think the shunters are rougher to-day than they used to be?—Yes, I think so.

18. Do you know the reason of that?—No, I could not say.

19. *Mr. Marchbanks.*] Are all the cars with broken draw-bar springs found at Timaru sent to your shop for repairs?—Yes.

20. Do they send a car with a spring broken in two?—No; I do not think it is necessary to replace it if it is only broken in two pieces.

21. Even if not washered up?—If there was any slack we would washer and tighten it up.

22. The train-examiner would send it to you?—Yes.

23. Do you do any Westinghouse-brake repairing?—No.

ALFRED LUTHER BEATTIE sworn and examined. (No. 71.)

1. *Mr. Myers.*] You are an engineer at present living retired?—Yes, on the retired list.

2. You were Chief Mechanical Engineer in the New Zealand railways?—Yes, for about fourteen years.

3. And you retired in what year?—In 1913.

4. You had had a pretty considerable service in the railways?—For thirty-six years in the New Zealand railways up to the time of my retirement.

5. And in various capacities?—I was a District Locomotive Engineer for most of the time before I became Chief Mechanical Engineer.

6. You also had some English experience?—Yes, nine years' training at Home.

7. I think before you left the service there was one special improvement you had effected in regard to axles?—Yes; the original axles on most of the wagon stock were iron, but they were not good enough for the later heavier work, and they were replaced while I was Chief Mechanical Engineer by modern high-class steel axles.

8. Did you regard that as a considerable improvement?—I regarded it as a very considerable improvement. It enabled us to carry heavier loads and to carry them more safely, and practically all the iron axles were renewed before I left the service.

9. It has been done gradually, I take it?—Yes, so-many a year.

10. And that presumably would have increased your repair bill per annum very considerably?—Yes, undoubtedly by a considerable amount per annum.

11. That would all go into your total expenditure?—Yes, it came into working-expenses each year.

12. And would come under your expenditure in connection with repairs?—Yes, it did.

13. I suppose in your time as at present there were occasionally canted boxes, or, to use the technical term, drunken axle-boxes?—Yes. I referred more particularly to the older type of axle-box. The more modern type of axle-box was designed to obviate that tendency to intoxication.

14. Would you mind saying how this canting was rectified when it happened?—Well, so long as it was not excessive for temporary repairs we used liners, which were quite effectual and enabled a wagon to run till it was due for overhaul.

15. Is that what you mean by temporary repair?—Yes. To save taking the wagon out of service until it was due for overhaul we used liners in the axle-boxes quite safely and quite effectively.

16. Was that the practice that obtained throughout your term as Chief Mechanical Engineer?—Yes, and before that. It obtained from practically the earlier days of the railways, as soon as this wear causing the canting began to become apparent.

17. Can you say whether the practice obtained anywhere else?—I have seen the same thing done in the railways in Australia.

18. During your term as Chief Mechanical Engineer was anything done to strengthen or improve the draw-gear?—Yes. There had been a previous strengthening in Mr. Rotheram's time, and during my term as Chief Mechanical Engineer there was further strengthening done.

19. Do you remember what the strengthening done was in Mr. Rotheram's time?—That was the enlarging of the diameter of the draw-pin and strengthening the draw-hook.

20. And the improving and strengthening in your own time?—Was the further enlargement of the draw-pin and the further strengthening of the draw-hook.

21. Was there any strengthening or improvement in the buffer-spring?—Yes, the buffer-springs were made considerably stronger in my time.

22. Stronger in what way?—It took a much greater pressure to compress them. Roughly speaking, I should say they were nearly doubled so far as resistance was concerned.

23. Would it be a heavier spring?—Yes, capable of standing a heavier blow.

24. You see this complete spring on the table here [draw-bar spring produced]?—Yes; I recognize that as the spring I think I was responsible for, and it was approximately twice as strong as the spring which it replaced.

25. In your time was the practice known of using pieced draw-bar springs?—It was regularly done with my knowledge and with my approval.

26. Are you able to say whether the same practice had obtained in the time of your predecessor, Mr. Rotheram?—It did to my own knowledge, and with Mr. Rotheram's knowledge and approval too.

27. Had you ever considered the questions, firstly, of the efficiency of a pieced spring, and, secondly, the question of safety?—I had carefully considered both the questions and carefully observed the effect in service.

28. What do you say as to the efficiency of a pieced draw-bar spring?—Well, I have not seen any tests made since I left the service, but, speaking from my knowledge as the result of my own observations whilst in the service, a pieced spring, pieced with reasonable judgment, was to all intents and purposes practically as good as an entire spring. The loss of efficiency meant a very small percentage, so little as to make no difference in actual work, and certainly no difference in the matter of safety.

29. In your time were pieced draw-bar springs used in all vehicles or only in particular classes of vehicles?—Only in wagon stock, not in carriages. For the information of the Commission I might perhaps say that it was not as a matter of safety that the pieced springs were not used on carriages, but pieced springs were a little noisy, and in a carriage a noisy spring was an objection. That was the reason they did not put them on carriages.

30. But so far as efficiency and safety are concerned would you have had any hesitation in putting a pieced draw-bar spring under a carriage?—None whatever.

31. Does it affect the question of safety at all?—Absolutely not, in my opinion.

32. So far as the travelling public are concerned or so far as the train or the vehicle is concerned?—I have no hesitation in saying as one who has had experience that there is no question of safety involved in the use of a pieced spring. I cannot be too clear on that point. There is no question of safety involved at all.

33. Either to passengers or to the train or vehicle?—That is so.

34. Does a pieced spring create more wear-and-tear to the undergear than a whole spring?—No, there should be no reason for that. Going back I might possibly volunteer a statement in regard to the early history of the railways in New Zealand. We were for some reason, which I can hardly now remember, I think, short of a shipment of draw-bar springs. We were without draw-bar springs for a number of new sets of new wagons, and in order to get the wagons into service where they were badly wanted, in the absence of springs we put in wooden blocks. We ran those wagons quite safely and satisfactorily with wooden blocks and no draw-bar springs. That was done in Mr. Alison Smith's time and with my concurrence.

35. Would you mind telling us whether the use of pieced draw-bar springs was due to a shortage of springs, or was it due to a question of economy?—It was a question of economy, not throwing away what was otherwise usable material. There might have been at odd times a temporary shortage of springs, but nothing to affect the question; but the reason for using pieced springs was to get the ultimate use out of the springs and not throw away material that could be utilized.

36. And safely utilized?—Yes, and efficiently utilized.

37. In 1911 while you were Chief Mechanical Engineer I think you made some alteration in the system of painting?—Yes. I think it was about 1911 we did away with the elaborate system up to that time in force of a great many coats of varnish on the carriages, and we went in for what had been done at Home on several English railways, and also the Australian railways. That was a system of using varnish colour—that is to say, the last coat of colour is mixed with a very considerable percentage of varnish. It dries with a good gloss and saves very considerable expense. It is quite effective, and several English railways were doing it before we adopted it.

38. Does that necessitate the more frequent application of paint than under the old system?—Well, I do not think in practice it did, because the carriages were put through the shops regularly, and even if you put six coats of varnish on at the shop you had to renew it, and also had to renew the varnish colour in about the same time.

39. So that you made the alteration because what you were doing was much more economical?—Yes.

40. And made the vehicles quite as efficient?—Quite as efficient in practice, yes, or, at any rate, sufficiently efficient to warrant its adoption. I may say that if I were again responsible for the upkeep of the carriage stock I should again go in for the varnish colour.

41. Your system has been adopted up to the present time?—I did not know that.

42. You say if you were in charge now you would continue the system—you would not revert to the old system?—No.

43. I think your retirement has been a real one, and you have not worried about railway stock since you left the railways?—I have not been near the railway since I retired. I have made two or three railway journeys during the last two or three years, but have no knowledge of the rolling-stock except a casual glance as I passed through.

44. And I think you yourself communicated with the Railway Department and not the Department with you in regard to giving evidence?—That is so. I was in Wellington about ten

days ago, and offered to give evidence on the matter before the Commission if my evidence was likely to be of any service to the Royal Commissioners. It was my own proposal.

45. *The Chairman.*] The breakage of draw-bar springs has always been a source of trouble to the Department?—Yes, had always been a source of trouble.

46. Have you formed any opinion as to the cause?—Well, I think one reason one may give is that the original design of the rolling-stock did not admit of a spring of sufficient range, and I think the springs we necessarily had to use suffered in consequence. If we had had a bigger range of spring I think we should have done away with a certain amount of the breakage.

47. Have you formed any opinion as to the present condition of the stock as compared to what it was when you left the service?—I have not had the opportunity of doing so, but, speaking as a railway man, and with a trained way of looking at things, as I passed over the railways it appeared to me that everything was as good as ever it was. I only saw a portion, and I have not made a detailed examination of anything.

48. *Mr. Marchbanks.*] Have you any recollection as to the number of draw-bar springs that were used annually in the maintenance-work?—I could not give you that information. I have not it by me. I know it was a very large number, and would have been an immense number had we not economized by utilizing the available broken pieces.

49. Have you any idea of the percentage of pieced springs that were put in?—No, I have not. I have not the figures by me. I could have told you when I was in the service. It was a very considerable percentage. It was a regular practice to use them, and, as I say, it obtained from the time of the introduction of the spiral steel springs up to the time I left.

50. There were no special instructions in regard to them?—There was no instruction in the Loco. Code, but it was a practice which I think grew up from the beginning of the use of spiral springs, and certainly it was known to me and approved of by me from the time it was started, and was approved by me up to the time I left the service.

51. With regard to car-painting, I think the cars in the service usually received a coat of varnish every year?—Yes, that was the usual practice. Once a year was considered the usual time for touching them up.

52. As for car and wagon repairs, the amount of expenditure was what you considered reasonable?—Yes. In that time the cost of car and wagon repairs was enhanced by new steel axles, which were put in sometimes to the number of two thousand a year. Each axle cost in the rough about £3, in addition to which was the work on them, so that that put up my expenditure on wagons considerably during my term of office as Chief Mechanical Engineer. However, before I left the service the iron axles had been replaced by steel axles.

53. Every year there would be a certain number of axles to go in. You give them a certain life and then renew them?—That is rather a moot point. If you put in a suitable steel axle—a mild steel axle—its life is a very extended one. If you put in a hard steel one you get crystallization very much earlier, and if you put in very hard steel axles you get failure earlier. After those steel axles were put in we never had occasion to renew them.

54. What do you think is a reasonable life for those axles?—That is also a moot point. I should certainly say it would not be less than twenty years. It depends on the mileage run, but these steel axles ought to be good for twenty years.

55. If there were 50,000-odd axles, it means, roughly, multiplied by two thousand a year?—Yes. None of them were renewed during my time.

56. You must give them some life, and when the life runs out it is part of the expense of maintenance?—Yes. I might say, with regard to American railways systems, the tendency was not to fix a definite life for axles, but to condemn them or remove them to a lighter class of traffic after a certain amount of wear. It was not the practice to definitely fix the years of life.

57. The English practice is to give a definite life?—Yes, I think so.

58. *The Chairman.*] Did I understand you to say that the whole substitution of steel axles for wrought-iron axles was completed before you left the service?—Yes. We had a lot of iron axles, and when I left I had reason to believe that all the iron axles had been renewed with steel.

59. *Mr. Maxwell.*] Did you hear one of the witnesses say they had been replacing iron axles during the last four years?—No, I did not hear that. I have a knowledge of the whole of the New Zealand railways up to the time I left. The District Officers were enjoined over and over again to trace the iron axles, and I had reports before I left certifying that all iron axles had been traced, and so far as the lists were concerned which were made out I think they had all been traced. So far as I am concerned, I do not think there were any iron axles in use when I left the service.

60. What were the first wagons run—were they 6-ton wagons?—Yes. We had some old Port Chalmers stock, but they were not standard.

61. Do you remember when the continuous draw-bar was introduced?—Well, so far as my memory serves me, it was in 1882 or 1883, and I have always had the impression that the President of this Commission was the officer responsible for designing the continuous draw-bar.

62. Do you remember that in 1880 there was a very severe economy practised throughout the colony?—Yes; I have good reason to remember it because I suffered by it.

(Witness called by the Commission.)

DANIEL JOSEPH ROUND sworn and examined. (No. 72.)

1. *Mr. Myers.*] What are you in the service of the Railway Department?—Foreman Painter, stationed at Addington.

2. How long have you been in the Railway service?—For thirty-eight years, and Foreman for nine years.

3. Have you been in the South Island all that time?—No; I was on the Auckland Section for nine years nine years ago. The last nine years I have been down here.

4. You have had experience of the painting under the old system prior to 1911 and the system of painting since?—I have.

5. Can you say whether there is as much painting done now as there used to be prior to 1911?—I can state that there is not as much done—certainly not.

6. What do you mean, as many coats or what?—Certainly not as many coats.

7. But I was thinking rather of the number of vehicles that are painted and the frequency of painting?—That is a different point.

8. What do you say as to that?—We are handling practically the same number of vehicles, but we are not doing the same amount of work on them. They are passing through the shops practically about the same time.

9. The vehicles are now dealt with for painting purposes as then?—Not quite, but there is very little difference.

10. What do you say as to the efficiency of the present system?—Well, as far as the protection of the vehicle is concerned, it is quite sufficient to protect the vehicle; but as far as appearances are concerned, of course, it is nothing like the old system.

11. I suppose the protection of the vehicle goes to the question of efficiency?—Yes. It does not require the staff to keep it up as previously.

12. Would you say there is very much difference in the cost?—Yes, a great difference. The present system is much cheaper than the old system.

13. We have been told that the alteration took place in 1911—does that agree with your recollection?—In 1910.

14. *The Chairman.*] You say the alteration in the system of painting and varnishing took place in 1910. Has there been any alteration since that date?—Yes; we have discontinued the lining. We only discontinued the varnishing in 1910.

15. And since then has there been any alteration in the system?—None whatever.

16. You have carried on since 1910 in exactly the same way as during that year?—Yes.

17. *Mr. Marchbanks.*] Is there only one coat of varnish colour put on a new car?—Two coats.

18. Two coats of lead and two coats of varnish colour?—No, practically no coats of lead. The two priming coats are practically alike—a special mixed colour.

19. You do not use lead at all?—No.

20. And two coats of varnish colour?—Yes. The new cars get two coats of priming, and the window-sills and beads, which get the most wear, get an extra coat, and then I finish off with two coats of varnish colour. The first coat does not carry so much varnish as the second. I mix the varnish colour in a certain way, or have it mixed under my supervision.

21. Do the cars usually get a coat of varnish every year?—No; my cars usually run from eighteen months to two years. When they come in they get cleaned down and the faulty places touched up. The majority get two coats of varnish colour again. The last coat is a very strong varnish colour.

22. How does that stand?—It stands well, and my stock is in first-class order. It has not the appearance as formerly, but so far as standing the wear is concerned it is quite satisfactory.

23. How long will a car run before being stripped off?—I reckon my painted cars will run for twenty years.

24. You have not as many men employed at the work now?—No.

25. Does the wagon-painting come under your supervision?—Yes.

26. Are you putting as many wagons through now as you did some years ago?—Practically about the same.

27. I do not mean touched up, but painted?—Yes, painted all over.

28. Have you as many men engaged at painting wagons as previously?—No, not at present. We are short-handed, but until recently I have had the same number.

29. It is on account of the war—the men have gone away?—Yes.

30. On steel wagons the paint does not seem to stand?—That is on account of the backing and loading and knocking against by carts, but the ends of the wagons that do not get the wear-and-tear stand better.

31. But I mean in regard to pitting?—That is owing to their getting bruised and getting down to the iron. If not touched up again they get worse. Perhaps we do not get that wagon in for months, and it is pitting all the time.

32. Do you use any red-lead on them?—We use oxide of iron on them, but no red-lead.

GEORGE EDWARD RICHARDSON sworn and examined. (No. 73.)

1. *Mr. Myers.*] You are Locomotive Engineer in the New Zealand railways?—Yes.

2. The section of which you have charge now as Locomotive Engineer consists of, what?—The South Island main line and branches.

3. That is from Hurunui to Bluff?—Yes.

4. Your headquarters, of course, are at Christchurch?—Yes, Addington, Christchurch.

5. How long have you held that position?—Nineteen months.

6. But I think you have been Locomotive Engineer in various centres for what length of time?—On and off since 1897.

7. And in 1914 I think you were at Petone as Locomotive Engineer?—Yes.

8. Do you as part of your duties make a periodical visit of inspection to the section of which you have charge?—Yes, I go over the section as often as possible.

9. And how often is that?—At least once a month.
10. Do you find that you are able to cope with the work on the section?—Yes.
11. I wanted to find out whether you suggest there should be some assistant, or whether you had too much to do?—No, I can manage the work.
12. And, in addition to making your inspection on your section, do you inspect at the shops?—Yes, when I am at Addington I go through them every day.
13. And are you at Addington every day when you are in Christchurch and not inspecting?—Yes; my office is at Addington.
14. Now, speaking of the stock as far as you know it, what is its present condition?—In good condition.
15. You have been here nineteen months: can you compare the present condition with its then condition?—If anything it is better.
16. To what is that improvement due?—To careful maintenance and gradual improvements.
17. You mean gradual improvements in equipment, I take it?—Yes.
18. Apart from those gradual improvements, the Commissioners doubtless want to know from evidence, apart from their own inspection, whether the actual maintenance is well kept up?—Yes, it is.
19. We know that in regard to certain classes of wagons the regulation as to lifting provides that lifting shall take place every three years?—Yes.
20. It used to be every two years?—Yes.
21. What do you say as to the sufficiency of the present arrangement?—Once in three years is quite sufficient.
22. Did you have the opportunity of considering this question before the regulation was altered?—Yes, I considered it for fully nine months, and came to the conclusion after watching it that three years was ample.
23. The regulation was altered by the Head Office naturally?—Yes.
24. But you were consulted about it?—I was.
25. And do you know whether the other Locomotive Engineers were consulted?—I am certain they were, though it is not within my own knowledge.
26. As a matter of fact, when the regulation provided for the lifting every two years, was it or could it have been done?—No.
27. As a matter of fact, although under the regulation the lifting was really required to be done every two years, how often was it done?—It would probably average three years then—certainly not two.
28. So that the alteration in the regulation really did not affect a departure from the previous practice?—No.
29. In 1914 when you were Locomotive Engineer at Petone you issued a circular with regard to the use of pieced draw-bar springs?—Yes.
30. Will you look at this circular and see whether it is a correct copy of the circular [Exhibit B handed to witness]?—Yes, as far as I remember, that is a copy of it.
31. First of all, was the use of pieced springs a new practice as far as you were concerned?—No; it was in use and had been the practice to a certain extent before.
32. Had you known this practice to have existed previously?—Yes.
33. Then, how did it come that you issued the circular?—Because only one or two places were doing it in the district, and I wanted to make it universal.
34. And do you remember whether either before or after the issue of the circular you saw the Workshops Managers and the Car and Wagon Inspectors with regard to this instruction?—I saw them both before and after.
35. The point I want to ascertain is whether you gave them an oral explanation of what you wanted in addition to your circular?—Yes, I did.
36. You say here in your circular, "If this," meaning the use of pieced springs, "is attended to properly a large sum of money will be saved each year"?—Yes.
37. What was it that induced you to issue the circular—was it due to any shortage of draw-bar springs, or was it a desire for what you thought proper economy?—What I thought proper economy, to utilize springs which to my mind were absolutely good and were on the scrap-heap.
38. You say in the circular, "The practice of throwing draw-bar springs on the scrap-heap when one or two coils are broken off is to be stopped, as it is quite unnecessary to do this on any vehicle except cars"?—Yes.
39. Did you ever in any way authorize the use of pieced draw-bar springs in cars?—No.
40. Has the practice of using pieced draw-bar springs in cars ever been adopted?—Not to my knowledge.
41. As far as safety is concerned, would you have any hesitation in using a pieced draw-bar spring even on a car?—No.
42. Did you consider at any time, either before or when issuing the circular, whether the use of pieced draw-bar springs affected the question of safety in any way?—Yes, I did. I was quite certain it did not before I issued the circular.
43. And that is still your opinion?—Yes.
44. Can the use of a pieced draw-bar spring, as far as you can see, increase the wear-and-tear of the vehicle to which it is attached?—No, in my opinion it cannot.
45. Then you proceed in your circular, "In future, when draw-bar springs are found with one, two, or three coils broken the space is to be made up by using suitable pieces of springs." What did you mean by that? Did you mean that two or three pieces might be used to make up a spring?—Only two pieces which were suitable, and to see that they fitted together.
46. Did you explain what you wanted orally to those to whom the circular was addressed?—Yes, and took pieced springs up to show them myself.

47. To your knowledge have pieced springs ever been made up of more than two parts?—Not to my knowledge.

48. I want now to refer to a circular issued by you in September last. I suppose you knew that the question of using pieced draw-bar springs had been mentioned in Parliament?—Yes; I saw it in the papers.

49. That was about July of last year?—Yes.

50. But you did not know whether a Royal Commission would be set up?—It did not worry me in the slightest.

51. Did you after the question was mentioned in Parliament issue this circular [produced]?—Yes.

52. It reads: "*Broken Draw-bar Springs*.—When replacing broken draw-bar springs in wagon stock, please arrange to make up the space with pieces of springs, but not more than two pieces should be used together, and care must be taken to see that they fit together. With this arrangement a considerable saving of springs will be effected, and the safety of the wagon will not be impaired." That was in September, 1916?—Yes. [Circular put in, Exhibit O.]

53. So that notwithstanding the asking of the question in the House your opinion was not in the least altered?—No, not in the least.

54. Had you at any time prior to or about the time of the issue of your first circular in 1914 made any tests of a pieced spring?—I made one test at Petone. The first wagon I fitted there was an L wagon with no floor in it.

55. Was that before the issue of the circular?—Yes. From what I saw there I was satisfied it was all right.

56. Has that opinion been confirmed by what you have ascertained since with regard to the use of those springs?—Yes, quite confirmed.

57. And you told us it was your desire for what you thought proper economy that you issued the circular in 1914?—That is so.

58. In September, 1916, when you issued the last circular, were you suffering from any shortage of springs?—No.

59. It was still a matter of what you thought of putting good material to economical and proper use?—That is so.

60. I think you have here figures which show the total number of draw-bar springs replaced at Addington, Hillside, and Invercargill Workshops from the several Car and Wagon Inspectors at Christchurch, Dunedin, and Invercargill?—Yes.

61. Well, does that include the draw-bar springs replaced at the out-stations as well?—Yes; they are returned in the statement of the Car and Wagon Inspector.

62. Is it to be taken then that those figures give the total number of new draw-bar springs which were used on your section?—Yes.

63. Let us take, first, the year ending the 31st March, 1913?—Yes; the figures for the various years are as follows:—

	In Cars.	In Vans.	In Waggons.	Total.
1911-12	92	8	2,925	3,205
1912-13	130	18	3,365	3,513
1913-14	201	35	4,064	4,300
1914-15	151	19	4,180	4,350
1915-16	205	30	3,736	3,971
1916-17 (eleven months)	...	...	...	4,173

64. So that over the whole section you have taken the averages, have you not?—Yes.

65. Tell us what they are?—The average percentage of springs replaced is 21 per cent. per annum. That is 21 per cent. of the total stock of springs. The number of springs replaced per week is eighty, and per day thirteen.

66. The figures you have given are figures representing the number of new draw-bar springs used?—Yes.

67. Have you any figures which would help to indicate the number of pieced draw-bar springs fitted?—I have some figures, but they are not complete.

68. You may give them as far as you have been able to obtain them?—From the 1st April, 1914, to the 23rd January, 1917, at Hillside 171 vehicles were fitted with two-pieced springs. At Invercargill for the year ending the 31st March, 1915, 2,000 springs were put in; 31st March, 1916, 392; and from the 1st April, 1916, to the 1st April, 1917, 366. That is all the information I could get as to the number.

69. Do you know that others have been fitted?—I know that a large number of others have been fitted, but, unfortunately, they kept no records, and I have not been able to get any further information on the point.

70. I now come to the question of repairs. Can you say whether the repairs have been kept up to the same standard during your term here as previously?—Yes, they have.

71. You appear to have issued on the 5th December, 1916, this circular [Exhibit N handed to witness]?—Yes.

72. It reads, "The workshops are being overcrowded with repairs, and in some cases vehicles have been sent to workshops which could easily have run for months, the repairs required being very slight and not affecting the safe condition of the vehicle in any way. Car and Wagon Inspectors will please endeavour to regulate the supply of vehicles to workshops, and send only those vehicles that require repairs to keep them in safe condition to run. The running-gear and Westinghouse brake must be kept in first-class order"?—Yes.

73. You might first give some indication of what you mean by very slight repairs not affecting the safety of the vehicle—you may be able to illustrate that?—Well, wagons were received at the

shops with perhaps the capping-iron lost. That is an iron that runs along the top of the wagon. Wagons were coming in with probably a little bit of that lost, or in some instances gone, but it affected the wagon absolutely in no way at all. In my opinion the wagons do not want it. Then perhaps there would be a small split in a plank, or a small piece off the side of a plank. Those are what I call trivial repairs.

74. Your object in issuing the circular was to prevent congestion in the shops which was causing a difficulty in carrying on the traffic?—It was causing a certain amount of congestion in the shops, but the principal feature was that it was causing very great inconvenience to the traffic. The Department was pushed very much for wagons at that time for wool. Everything was blocked, and shipping was blocked.

75. This circular was issued some months after the period mentioned in the Commission, but at the same time it is proper that it should be handed to the Commission?—Yes.

76. Did you refer orally to your officers about this circular?—Yes; I spoke to them all about the circular, and indicated to them what I considered to be the trivial matters.

77. You say, "The running-gear must be kept in first-class order"?—That is so.

78. Apparently, therefore, the first part of your circular did not refer to the running-gear?—Not in any way.

79. Apart from that, has there been any other instruction issued that you are aware of with regard to sending in wagons?—None whatever.

80. Or in regard to carriages?—No, none.

81. Have you received any instruction from Head Office which you could interpret as an indication that you were to curtail repairs?—No, none.

82. Have you issued any such instruction disregarding that circular?—No.

83. Have you figures, as a matter of fact, which show the extent of the repairs that have been effected?—Yes.

84. First of all, what was the total stock on the South Island main line and branches at the beginning of each of the years 1913, 1914, 1915, and 1916? When I speak of the beginning of the year 1913 I take it you mean 1st April, 1912, to 31st March, 1913?—Yes.

85. Will you give us the total stock at the beginning of each of those years?—Yes.

1913	..	..	8,749	1915	..	..	9,604
1914	..	..	9,181	1916	..	..	9,906

86. Now, will you give us the total number of vehicles to which repairs were effected during the same years?—Yes.

1913	..	..	6,471	1915	..	..	8,338
1914	..	..	7,756	1916	..	..	7,974

87. There does not seem to have been the same percentage in 1915 as in 1916?—No, there was not quite so many.

88. And of the 7,974 that went to the shops in 1916 there may have been many that went in more than once?—Yes.

89. I think you have also a return here of the paint work?—Yes.

90. The amount of work done, where?—At Addington, Hillside, and Invercargill Workshops.

91. The return will speak for itself, but does it show that the painting work is being kept up?—Yes, it does.

92. Does it, as a matter of fact, show any increase?—Yes, it shows an increase from 1913. The total put through was 5,601, and in 1916 it rose to 6,798.

93. At any time during the last three years and a half either at Petone or Addington have you experienced any shortage of supplies or any difficulty in obtaining supplies?—No, no real difficulty.

94. And does that observation apply to draw-bar springs as well as to other articles?—Yes.

95. Are you in a position to say what the percentage of broken or pieced draw-bar springs would be met with in a day at any particular station?—No, I am not in a position to say.

96. Would any train-examiner be able to give anything like accurate information?—Yes, he should be in a position to.

97. That is, if he has facilities?—Yes; if he carries out his duties properly he should be able to give some idea.

98. We have heard of the examination of a train while a train is standing at the platform, but what other examination is made of a train than that?—They are examined when standing in a siding at the station-yards by the train-examiners and lifters.

99. So that the examination by the staff is not limited to the examination while standing at a station?—No.

100. *The Chairman.*] As to the circular you issued at Petone on the 10th June, 1914, it reads: "In future, when draw-bar springs are found with one, two, or three coils broken the space is to be made up by using suitable pieces of springs." That circular rather reads that an indefinite number of pieces of springs may be used?—It was badly worded. My intention was to replace the whole spring by two pieces.

101. I think you also said just now that you gave oral instructions about this matter in addition to the circular?—Yes.

102. Did you make it quite clear in the oral instructions to all the Car and Wagon Inspectors?—Yes, to all of them, that only two pieces were to be used. In fact, I showed them two pieces off the scrap-heap.

103. *Mr. Marchbanks.*] When you issued that circular was there any shortage of draw-bar springs?—No.

104. I notice in parliamentary paper D.-6 that the Car and Wagon Inspector at Wellington says that broken draw-bar springs have been pieced up owing to the shortage, but this in no way affects the safety of the vehicle, and then the Workshops Foreman at Wanganui says much the same thing—"So far as spares are concerned, there has occasionally been a shortage of draw-bar springs, but nothing else, and on wagon stock we have had to use two half-springs, which is not in any way unsafe or detrimental to the stock. No half-springs have been used on cars or bogie wagons. To my knowledge half-springs have been used on wagons for many years"—I do not remember the shortage.

105. It may be judged from the reports that there was a shortage?—It may have been for a week till other supplies came forward, but I do not remember a shortage. It certainly was not a serious one.

106. In the figures you gave you say that 4,300 springs were put in in the last three or four years on this section. That does not mean all broken springs were replaced?—No.

107. There would still be a proportion of whole springs on the section?—Yes.

108. With regard to stores on this section, do you know the total amount expended on stores for repairs to cars and wagons?—No, I have not those figures.

109. In regard to painting, could you say whether there have been more or less wagons painted entirely on this section in the last three or four years? Have you the figures for that?—I do not mean touched up?—The wholly painted wagons in 1913 were 1,923; 1914, 2,048; 1915, 1,770; 1916, 1,492.

110. There has been some slight falling-off?—Yes.

111. The carriages painted seem to have been about normal?—Yes; they have increased.

HARRY HUGHLINGS JACKSON sworn and examined. (No. 74.)

1. *Mr. Myers.*] You are Chief Mechanical Engineer in the Government railways?—Yes.

2. I think you have been in the service for a long time?—Yes, a little more than forty years.

3. You started as an apprentice and have gone up to the position of Chief Mechanical Engineer?—Yes; I have filled most positions, I think, in the railways in the Locomotive Branch.

4. Your experience has been a practical one throughout?—Well, I think so.

5. You might just indicate shortly the different positions you have held?—I joined the service in November, 1876, and served an apprenticeship of five years. After that I worked as journeyman fitter for three years and a half. Then I was appointed Locomotive Foreman at Wanganui, a position I held for one year. After that I acted as relieving officer for two years. During that time I was Workshops Foreman Fitter at Hillside for six months, in charge of the Picton-Nelson Sections for about six months, the Locomotive Branch in Napier Section for another six months, and the balance of the time I was relieving various Locomotive Foremen, and so on.

6. That brings you up to 1888?—Yes. From 1888 to June, 1913, I was Locomotive Engineer in charge of the various sections, the last thirteen years of which I was in charge of the Hurunui-Bluff Section, and from June, 1913, I have acted as Chief Mechanical Engineer.

7. When you took over the duties of Chief Mechanical Engineer, were you satisfied with the then condition of the rolling-stock?—I was, perfectly. I considered that the rolling-stock was then in a high state of efficiency, just the same as it has always been maintained all the time I have been in the Railway service. At the present time it is as good as it has always been, and possibly a little better.

8. Mr. Beattie told us that prior to his leaving the service he had substituted steel axles for iron axles, and that an improvement had been effected throughout the stock?—Well, it was practically complete when Mr. Beattie left, but not quite. Since he left we have come across a few odd iron axles, which have been replaced—a few stragglers, but the bulk of the work was done before Mr. Beattie left. He made a great point of getting that work finished before he left the service.

9. I suppose he wanted to leave the stock in good condition for his successor?—He did, and axles are a most important feature, and cause a good deal of trouble.

10. You say you have in your time as Chief Mechanical Engineer maintained the stock in as good order, and you think it is now in better order than ever it was?—Yes, better if anything.

11. The question was asked in the House in July, 1916, whether there was a shortage of the necessary equipment for renewals in the Stores Department. Was there such a shortage?—Not that I am aware of. Of course, I cannot speak altogether for the Stores Department, but as far as my branch was concerned there really has never been a shortage of any material up to the present.

12. You speak of this matter in this way: that you and your officers have to procure your supplies from the Stores Department?—Yes, that is so.

13. Well, had you up to that time been able to procure supplies?—Yes.

14. Had you and your officers experienced a shortage?—No, we had not.

15. And upon you and your staff is cast the responsibility for the renewals?—That is so. I might mention in connection with the alleged shortage of draw-bar springs that I have searched my files from 1907. It is the duty of the local officers, if they get short of any material which the stores cannot supply, to refer the matter to me, and my files show various extracts of what applications have been made to my office for draw-bar springs since 1907, or to my predecessor, and I will read those extracts. The first is on the 19th November, 1907. The District Manager, Whangarei, reports, "I have not a single spring left on section, and a good many are broken on draw-bars." The next was in November, 1907. Locomotive Engineer, Newmarket, reports, "Stores have orders for 1,487 draw-bar springs. Over 1,000 wanted for wagons running with"—

the next word is not very easily decipherable. Mr. McDonald, the Locomotive Engineer, was not a very good writer, and I have read the word as "single"—"single draw-bar springs." The reply was that supplies were arriving early. No further application was made from him. In January, 1908, the extract is, "Newmarket again asking for draw-bar springs to clear wagons out of shops."

16. Those may have been new wagons?—Yes. Then in February, 1908, "100 springs sent to Newmarket from Addington." Those were evidently to allow him to release those wagons. Then on the 19th November, 1908, "Stores unable to supply all orders for Addington." The reply was, "Shipment on water due for early delivery." But there was no actual shortage at that time, because that was an application I had made, and I was looking ahead. Then on the 5th November, 1913, "Car and Wagon Inspector, Wellington, short of draw-bar springs." He was advised that springs were on order and due to arrive. No further application was made, or could have been supplied from A.O.L. stock. Then on the 10th August, 1915, "Newmarket reported Car and Wagon Inspector nearly out of draw-bar springs. Supplies forwarded from other centres." No further application was made. Then on the 16th October, 1915, "Petone reported shortage on section. Supply landed shortly afterwards." On the 16th October, 1916, at Dunedin there were 450 B.P., 4,310 A.O.L. stock in shops for draw-bars, and 3,550 bearing-springs, which could have been utilized for draw-bar springs, and in Hillside Store alone there were 1,800 bearing-springs at that time, so that if any further application had been made by the Locomotive Engineer at Petone there were ample supplies at that shop alone to more than meet his requirements.

17. Then, what did you deduce from your search of the files as to the existence at any time of a shortage?—That there never has been a shortage. I am not prepared to admit that there ever has been a shortage, and certainly not during the last few years.

18. Has any report ever been made to you by any officer concerned with the rolling-stock that the condition of the rolling-stock was such that he declined to carry the burden of responsibility on his shoulders?—No; I have not had a report of that sort from any officer.

19. Have you had any report from any officer indicating any dissatisfaction with the condition of the rolling-stock?—No.

20. Or any suggestion that the rolling-stock or any part of it was unsafe or was deteriorating?—No.

21. You make periodical visits of inspection throughout New Zealand, do you not?—I do very frequently.

22. I think you can give the Commission some indication as to the proportion of your time occupied in actual inspection?—Well, during the time I have been Chief Mechanical Engineer I have spent eight days per period of twenty-eight days on the average away from headquarters on inspection trips.

23. And when you make these inspectorial visits one would like to know whether it is a casual inspection or a close inspection?—I think some of my subordinates could answer that question better than I can. My own opinion is that I make a very close inspection. I have a pretty keen eye, and I think if there is anything amiss I would see it as soon as anybody. In fact, more than one of my men have said I have an eye like a shark. I do not know whether they mean it is particularly keen, but I take it in that way. When I have been hauling them over the coals for not spotting some little defect some of them have remarked that my eye is too keen. I do not think anybody can say that when I travel round the country I do not take a very keen interest in the work, and make a very rigid inspection of the stock.

24. We have heard a great deal said about the use of pieced draw-bar springs. Has it ever been denied by you that pieced draw-bar springs have been used?—No, never. They have been used, I think, ever since I joined the railways.

25. Is it a practice of which you have approved and of which you do approve?—Yes, it is.

26. Does your approval of that practice extend to the use of pieced draw-bar springs in carriages?—No; I should prefer not to use them in carriages. They are quite satisfactory in carriages and quite safe, but we try to give the travelling public as much comfort as we can, and if those springs are not kept tight and the draw-bar happens to get a little slack, as Mr. Beattie said, there would be greater noise owing to the banging of the two pieces of spring. I do not know that there is any other objection.

27. At all events, you have not used them in carriages?—No; they were not used in carriages by my predecessors, Mr. Rotheram and Mr. Beattie, and it has not been done by me.

28. But the practice has been adopted with regard to wagons?—Yes.

29. Is it a practice that has been brought about by the shortage of whole springs?—Not since I have been Chief Mechanical Engineer, and I do not think so at any other time. Of course, I remember years ago on more than one occasion there was a shortage of springs. Mr. Beattie spoke about wooden blocks in wagons. I remember when I was an apprentice practically all hands in the car-shop were called out to take the draw-bar springs out of the ballast-trucks in order to put them into the ordinary wagons, and the ballast-trucks were fitted with wooden blocks. I cannot remember how long they ran in that way, but probably some time.

30. Does the use of pieced draw-bar springs, in your opinion, effect a real economy?—Undoubtedly. At the present time the price of draw-bar springs is going up alarmingly, and they are practically unobtainable in England.

31. Have you had any draw-gear failures in the service on running trains?—We get them from time to time—broken springs, broken draw-bars, and broken hooks.

32. Are they a matter of frequent or rare occurrence?—Very rare occurrence. I might say that during the whole of my term in the Railway service, and I have travelled a good deal on the trains, there has never been a broken bearing-spring or a broken buffer on a train I have been travelling on.

33. Well, from that fact do you make any deduction, apart from your own knowledge, as to the safety or otherwise of using pieced draw-bar springs?—I consider a pieced draw-bar spring is absolutely as safe as a whole spring.

34. And what about its efficiency?—Well, it is practically as efficient as a whole spring, and any tests we have made have shown that.

35. Since you became Chief Mechanical Engineer have you brought about any improvements in the draw-gear?—Well, there has been one alteration made, and according to the trials I think it is going to turn out an improvement. That is doing away with the cotter on the draw-bar. The cotter-hole was always a source of weakness, and quite a number of draw-bars used to break through that cotter-hole. In the last eighteen months that cotter-hole has been done away with, and the collar goes up against the square shank of the draw-bar now.

36. You think that will turn out to be effective?—We have not had a draw-bar broken in that position since, so far as I am aware.

37. When you became Chief Mechanical Engineer the type of draw-bar spring in use was the rectangular section spring of this type here [produced]?—Yes.

38. Are you using any other type now?—Yes, at present we are using a round section type—a small coil spring inside another.

39. About when did you start using that type?—When I was on the Hurunui-Bluff Section broken draw-bar springs were of very frequent occurrence, and I think I was the only officer to keep any returns of those breakages. They have since been kept up in this office, and shortly after I went to Wellington I made some inquiries with a view to seeing whether we could not get a spring that would stand better. The result was that about October, 1915, we decided to try a few thousand of those springs I have referred to—the round section. They may not have been actually put into service in October, 1915, but the first of them must have been put in towards the end of 1915.

40. You procured several thousand?—Yes, three or four thousand.

41. Do you find them satisfactory?—So far they have proved very satisfactory. They have not the range that these rectangular springs have, but we have had none broken yet, and none have closed up as far as I know.

42. And I suppose you have in view the continued use of them?—They are practically the standard draw-bar spring now. As far as I am concerned, I will not go back to the old type of rectangular section spring.

43. Apparently you were not induced to make that alteration by reason of the representations or speeches of members of the House?—No; I think I got in a little bit ahead of them so far as that is concerned.

44. Well, is there anything further you desire to say with regard to the use of pieced draw-bar springs?—No, I do not know that there is. I might perhaps explain this point: It may happen that sometimes a partly broken spring may be found in a carriage. Well, occasionally the carriages get knocked about a little and the springs get broken, and it may not be convenient at the time to stop the particular carriage and renew that spring at once, so the practice is that if the two pieces are good to screw up the draw-gear and allow that carriage to run temporarily with a shorter spring. That has been done to my knowledge on many occasions on carriages. I have no doubt that if you were to go round the yard at any time you might see two or three carriages with a spring in two pieces. That has been admitted, and there has not been the chance to put it right immediately, and in the course of a few minutes you can tighten up the draw-gear to allow the carriage to go out on a country trip and come back again, when it is attended to. I have seen carriages in the last fortnight with springs in that condition, and I have known the reason for it.

45. You have already told us in regard to this question asked in Parliament that there was no shortage of the necessary equipment for renewals?—That is so.

46. Then, another part of the question was whether it was a fact that where broken springs had been found under carriages two springs were put into one as there was not sufficient springs available?—That is not correct.

47. Although, as you have said, it was the practice ever since you have been in the Department to use pieced draw-bar springs in wagons and not in carriages?—Yes, that is so.

48. You heard Mr. Wilford give evidence in Wellington, did you not?—Yes.

49. My recollection is that what he had in mind was that broken springs were used, and that that was unsafe. What he had in mind apparently was the safety of the public, according to his evidence?—I gathered from his evidence that a spring was a spring, whether a draw-bar spring or a bearing-spring. He did not know the difference.

50. I think you have already said that in your opinion he need not worry so far as the safety of the public is concerned?—No, I am sure he need not.

51. Or the public need not worry?—I do not think so. I do not think they do—in fact, I am sure they do not, or else some of them would have been here to speak about it.

52. I come now to the use of liners in axle-boxes. You heard Mr. Veitch at Wanganui complain of that practice?—Yes.

53. First of all, is it a new or old practice?—Very old practice, and I believe there are less liners in the boxes now than at any time.

54. Is it to your knowledge a practice that is adopted elsewhere?—Yes, I have seen it adopted elsewhere—in Australia.

55. Is it a proper and safe practice?—I think so. Although it has been in use for the last forty years there have been no accidents, and no trouble has been caused owing to that practice being adopted.

56. Then it has been said that the painting of vehicles has not been maintained?—Well, I do not agree with that.

57. What do you say about the painting?—I think the painting is well maintained—as well as necessary.

58. You knew, of course, in 1910 or 1911, or whenever it was, that Mr. Beattie made an alteration in the system?—Yes.

59. You have not considered it necessary or advisable to alter Mr. Beattie's system?—No.

60. Are you satisfied with the efficiency of the system which he adopted in 1910 and 1911?—Yes. I have figures here.

61. And it is your opinion that he was correct in saying that the alteration in the system means a considerable economy without in any way impairing the efficiency?—Yes.

62. You have some figures you can place before the Commission?—Yes. Starting from the year ending the 31st March, 1912, I will read out the particulars of cars, brake-vans, and wagons painted as taken from the annual statement. I am not particularizing between thoroughly painted and touched up, but just giving the total number.

					Cars.	Brake-vans.	Wagons.
1912	...	...	...	...	982	315	8,561
1913	...	...	...	...	1,026	296	9,500
1914	...	...	...	...	1,084	341	9,662
1915	...	...	...	...	1,127	321	10,014
1916	...	...	...	...	1,209	373	10,470

63. You have now dealt with three of the complaints that have been made. It was suggested by one of the witnesses that the extension of the period for the lifting of certain classes of wagons from two years to three years was a great mistake, and had had bad results?—Well, I think it was proved by the returns sent in by that witness that his statement was not borne out by facts.

64. You are referring to Mr. Shaw, of Hawera?—Yes. I might tell you that this question had been represented by one or two local officers. They represented that we were simply throwing money away in lifting the wagons every two years, because on many occasions when the wagons came in it was found that nothing was required. During late years we have had a very large number of carriages, and wagons, and vans fitted with standard axle-boxes, which permit the men to make an examination of the brasses in a few seconds. The question was very fully considered, and the opinions of the whole of the officers—the Car and Wagon Inspectors, Workshops Managers, and Locomotive Engineers—taken, and it was then decided to extend the period of lifting certain wagons from two years to three years.

65. You say the officers in the various branches were consulted?—Yes.

66. Was there a general consensus of opinion?—I do not think there was a single objection raised as far as I can remember. When the draft instruction was finally sent out I think everybody agreed to it.

67. You have said it was represented that useless expenditure was being incurred, but was the old regulation really carried out?—As a matter of fact, it never has been.

68. Could it be?—I do not think it could with the facilities we have.

69. Do you think any harm can result from the alteration in the extension of time?—No.

70. In any case, is it not a fact that during each term of three years the majority of the vehicles are brought into the shops and overhauled?—Yes.

71. Have you during your term as Chief Mechanical Engineer issued any instructions for the reduction or curtailment of repairs?—No, never.

72. Or of the expenditure on repairs?—No.

73. Or have any instructions been issued to that effect by any one else with your authority or knowledge?—No. There has been no interference whatever with the local officers. The instructions laid down in the Loco. Code have never been varied, and I do not think any officer would interfere in a thing of that sort without consulting me.

74. Has your own discretion been in any way interfered with by the Head Office or management?—No, never.

75. Have you had any instructions from the management that you were to cut down or curtail the expenditure in repairs?—No, I have not; and if I did get those instructions I should certainly not allow it to interfere with the safety of the rolling-stock.

76. But you have not received any such instructions?—No, and am not likely to.

77. Was there any instruction that the amount of money at your disposal for expenditure on repairs was to be restricted or limited?—No, no such instruction.

78. So that you are responsible?—Yes, I have had the responsibility. I spend whatever money I like on repairs, and if I spend too much I would get hauled over the coals, but that would not worry me very much. I spend what I think is right and proper having regard to the safety and efficiency of the stock.

79. Have the speeches in Parliament in July and August of last year in any way altered the methods adopted, or brought about any instructions from you to speed up repairs, or anything of that kind?—No; I do not think any one has been caused very much trouble by the speeches in Parliament. I am quite certain that no one has given any instructions to speed up repairs.

80. Has the work of your workshops and the work of your officers proceeded on the same lines since July last as previously?—Exactly the same. I have a return here which shows the number of wagons turned out of the shops from August to January for the last five or six years. There are certain classes of wagons that we cannot afford to spare during what we call our busy season. For instance, stock-wagons, frozen-meat wagons, and fruit-wagons. We require every one of those in service from November till the end of April, so that as a rule we try to rush them through the shops at a certain time of the year in order that they will be in first-class condition when wanted,

81. Well, in taking a particular portion of the year, from August to January, are you taking what you think is a fair illustration or a fair test?—I am taking it from the time of the speech made in the House, in July, up to January, when it was practically decided to appoint the Commission, so I take that period.

82. Well, if you have the number of vehicles available you might just give them. I assume that the totals which you give comprise the total number of vehicles turned out of the shops of repaired vehicles?—Yes. The number are as follows:—

August to January.				Cars.	Brake-vans.	Wagons.
1912-13	...	...	...	653	164	4,674
1913-14	...	...	...	725	202	5,155
1914-15	...	...	...	696	192	5,814
1915-16	...	...	...	663	189	5,917
1916-17	...	...	...	750	208	5,912

83. Now I want to go back again to bearing-springs and draw-bar springs. All those springs, I take it, are drawn in the first place from the stores?—Yes, that is so.

84. Will you just say how they are dealt with?—Well, a certain number of draw-bar springs are drawn out for car repairs, out for wagon repairs, and a certain number out for what we call A.O.L.—that is, additions to open lines, new rolling-stock—and we have always had large quantities of springs on hand for new rolling-stock, and our practice is at any time if the stores are unable immediately to supply our requirements in draw-bar springs, and we are short, to simply take the springs from our A.O.L. stock, and replace them as soon as the stores can supply them. That is the practice that has been going on for a number of years.

85. An officer from Picton was giving evidence before the Commission, and he was asked to send in a statement from his records of the number of bearing and draw-bar springs renewed on the Picton Section for the three years ending the 31st March, 1916. Have you that information?—Yes. The figures are as follows:—

	Cars.	Wagons.	Vans.
Broken laminated springs	...	2	...
Broken coil bearing-springs	...	...	...
Broken draw-bar springs	2	40	2

86. That is over a period of three years?—Yes.

87. You have handed to the Commission, I think, the various drawings that have been asked for?—Yes.

88. And you have also handed to the secretary of the Commission, at the request of the Commission, a number of returns?—Yes.

89. You have not personally made up those returns?—No, I have not.

90. But they have been made up by your office under your instructions?—Yes, practically all of them, except those received from the stores, which are signed by the Comptroller of Stores.

91. And I suppose you have no reason to believe but that all those reports and returns are accurate?—No. All those prepared in my office I am prepared to stand by as being perfectly accurate.

92. And you have no reason to doubt the accuracy of any of the other reports?—No; they are simply taken from the records.

93. I think you remember that in Wellington one of the returns asked for by, I think, Mr. Wilford, was a return of the fines inflicted on members for draw-bar failures on running trains?—Yes.

94. You asked the Head Office to look into that matter for the purpose of preparing a return?—Yes. I have not seen the return, but I know there have been no punishments during my time. I am quite certain of that.

95. Some of the train-examiners have been asked if they could give the percentage of broken or pieced draw-bar springs met with in a day. Knowing their duties as you do, do you think they could do that?—I doubt whether they could. For instance, perhaps a train of sixty or seventy vehicles will come into the yard; the examiners will get to work to examine the trucks and tap the wheels—I am speaking of the terminal stations—and before they are at it for any length of time the shunters will come and rush the train out of the yard, and the train is broken up before they get a chance to know what springs are defective in that particular train. In all the big yards and in the smaller yards the men are continually going round the yards and inspecting the vehicles. Practically all the trains are inspected before they leave, and the express and passenger trains are inspected before they leave and also on their arrival. The chief part of the inspection takes place in the inspection-yards, where the men have more time. I want to make it clear that the inspection of trains at the platforms is not all the inspection the vehicles get.

96. Do you think that a train-examiner can thoroughly examine every draw-bar spring on every vehicle that passes through his hands during the day?—At some time or other I am sure he can. On most trains they examine them at the terminal stations when the trains remain sufficiently long at the platforms. They are expert train-examiners, and we have a splendid class of train-examiners throughout New Zealand. They can go through a train very quickly, and I am sure that if I went after them I would not find many things they had missed. I am quite certain we have a good train-examining staff, taking them all round, all over New Zealand. From one end to another they are thoroughly capable and reliable men.

97. Take the running of express trains which stop at stations, what have you to say in regard to examination of them?—We do not attempt to examine the draw-bar springs on such trains. In fact, it takes us all our time to go round the expresses with two men and examine a train before it leaves. In most cases we have to have two men at an examining-station while the train

is at the station, and I think our examining-stations are closer in New Zealand than they are in most countries. I should say the average distance between the examining-stations would be fifty miles.

98. I want to revert for a moment to the question of repairs. So far as the expenditure on repairs is concerned, is the expenditure as great as it was prior to your taking over the duties of Chief Mechanical Engineer?—I think in the first year it was greater, but during the last two years it has not been quite as large.

99. Has the difference been appreciable?—Well, hardly, but there is a very good reason for it, and I have some figures on that point. In regard to the repairs to vans and wagons, the expenditure has gone down about £2,000 in the last two years.

100. £2,000 in a total of £136,000?—In 1912–13 it was £132,000. One reason of the reduced expenditure is on account of the small number of new axles put in. Another reason is that the raising of the sides and ends of the L wagons was practically stopped, while another reason has been the substitution of the lead-line bearing in place of the old bronze bearing. There is a difference of nearly 10s. each in the value of those bearings. Those three reasons will, I think, more than fully account for the fact that we spent £2,000 less. In 1913–14 we spent £6,727, and in 1914–15 £1,174, while in 1915–16 only £1,145, raising sides and ends of L wagons. Of course, the cost necessarily varies. In one year you may get quite a lot of heavy repairs, and in other years we may get a lot of the stock knocked about through a series of accidents, while in other years we may have a good run and get no damage at all.

101. In regard to draw-bar springs, I think you have had certain tests carried out and have worked out the results on blue-prints?—Well, we have had tests made from time to time, and those results have been tabulated on a print.

102. Have you that print here?—Yes; they are just extracts from our files showing the results of springs which are tested when they first arrive.

103. But it shows the pieced draw-bar springs as well?—Yes.

104. Have you that available?—I can hand that in. Of course, so far as the testing of those springs is concerned, Professor Scott will have some better means than we have, but for all practical purposes I think our tests will be found to be satisfactory. [Blue-print handed in. Exhibit P.] I think the print is quite clear, and does not require any explanation.

105. So far as the accommodation is concerned for effecting repairs in the shops and at the sidings, speaking generally, do you think it is sufficient?—There are places where we are very cramped.

106. For instance, Palmerston North, I suppose?—Of course, if we had better facilities at Palmerston North no doubt it would save us sending wagons to the shops at either Napier, East Town, or Petone. Palmerston North has been under consideration for some little time, and as far as I know it has been practically decided to give us improved facilities there. It means improving the arrangements in the yard and all sorts of things, such as closing the streets, which cannot be done in five minutes. There are other places where we can do with more room, as, for instance, Dunedin, and it means that if we cannot do the repairs in the yards we have to send them a mile to the workshops.

107. But may one take it that the question of the sufficiency of accommodation at all places is a matter which you and your officers always have in mind, with a view to improving as you go along and as opportunity offers?—Yes. I would like to say in connection with repairs that at most of the shops we have new carriages and wagons building. Should it happen that we got jammed up with the repairing of wagons, we would simply throw aside the carriage or wagon building and put more men on to the repairs. If we got into a very bad state it would simply mean that in some of the shops we would abandon new building altogether if we had not the room to carry on both.

108. I think I have covered the ground as far as I remember, but is there anything that you think I have omitted to ask you about upon which you think there is any observation you can make?—I do not think so.

CHRISTCHURCH, SATURDAY, 10TH MARCH, 1917.

Mr. Myers: A little difficulty has arisen, sir. I mentioned yesterday the question of calling Mr. Valentine, and I understood from the Railway officers that he was then in Christchurch. Through some misunderstanding between Wellington and Wanganui—not, so far as I am aware, through any fault of Mr. Valentine—he is not yet here. A ticket for the steamer was taken out for him at the Wellington office for Wednesday night, but apparently through some misunderstanding, the nature of which I have not been able to ascertain, he did not leave Wanganui. It was not till last night that we ascertained that, but he has been instructed to leave Wanganui to-day, and therefore cannot be here till to-morrow morning. I would ask the Commission, therefore, if possible, to take his evidence on Monday morning or some time on Monday. It cannot take very long, and then I desire very shortly to address the Commission on two or three points; but, plainly, it would be undesirable and difficult to do that until the evidence is concluded.

The Chairman: You desire to produce Mr. Valentine on Monday?

Mr. Myers: Yes, sir, if that is convenient to the Commission. I can arrange that his evidence can be taken at any time on Monday which is convenient to the Commission. I should like his evidence to be concluded before the evening, because naturally we would all like to return to Wellington by the steamer leaving here on Monday evening.

The Chairman: You consider that his evidence will not occupy a very long time?

Mr. Myers: It cannot take long, and my own observations, I can assure the Commission, will be very brief.

The Chairman: The Commission will sit at 2.30 p.m. on Monday afternoon to hear Mr. Valentine's evidence, but we do not wish to curtail your address.

Mr. Myers: I shall not detain the Commission very long with my remarks.

The Chairman: Presumably the afternoon will be sufficient.

Mr. Myers: Easily. I should not think the proceedings will last for more than an hour altogether.

The Chairman: Then the Commission will sit for the taking of evidence at 2.30 p.m.

HARRY HUGHLINGS JACKSON further examined.

1. *Mr. Myers.*] You said yesterday that you did not think the remarks of the members of Parliament who referred to the question of the railway rolling-stock had worried any of the officers of the Department, but did you take exception to the statements made?—Yes; I took very strong exception not only to the statements they made about the condition of the rolling-stock, but also to the reflections they cast on the statements of the officers who had submitted reports on the matter, and it was owing to those reflections and the statements made that the officers unanimously demanded that the Government should hold an inquiry so that the matter should be settled once and for all. As a matter of fact, if it had not been for this inquiry hanging over my head the probability is that I should not have been in the Department at the present moment, but I could not very well go out and leave a thing like this hanging over the head of my successor.

2. You yourself have completed your forty years' service, I think?—Yes, more than forty years.

3. And during the last three years the main responsibility for the condition of the rolling-stock has been yours?—That is so.

4. Now, in the first instance when reports were asked for as a result of the question asked in the House without notice, did you endeavour to produce full reports from yourself and your officers with a desire to avoid the expense of the Commission that had been asked for by the same question?—Yes, I did.

5. And you say that after the reports had been made you felt that the remarks that followed in the House were such as that you should not leave the Department owing to the fact, in your opinion, that you would be leaving your successor in a very difficult position?—That is so. I thought it would be very unfair to leave and allow my successor to carry the responsibility. Not only that, there was a very strong reflection on myself, and I desired to have that cleared up before I left.

6. And upon your officers also?—Yes, and upon my officers.

7. *The Chairman.*] You made some very important statements yesterday. One statement you made was to the effect that no instruction or suggestion had come from the General Manager to you to in any way reduce the repairs of the rolling-stock. Is that correct?—That is quite correct.

8. The second statement you made was that you accepted the full responsibility for the present condition of the rolling-stock?—That is quite correct.

9. That being the case, the statement which was made in the House to the effect that a person was able to prove that in connection with draw-bar springs alone the Department had not maintained the rolling-stock as efficiently as previously is not correct?—That is not correct.

10. The suggestion has also been made, and made also in the House, that the painting of vehicles was considerably behindhand?—That statement also is not correct.

11. A further statement was that a broken spring is no spring at all—practically it is a solid piece of metal?—Well, I do not agree with that statement. I think from the practical tests that have been made that a pieced spring is almost as good as a new complete spring.

12. The statement refers to a broken spring—it would depend upon the degree?—Yes, it depends upon the manner in which the spring is broken. If a spring is shattered it is no spring, but when those springs are found they are taken out.

13. I gathered from your evidence yesterday that you had for some years been aware of a considerable breakage amongst draw-bar springs?—Yes, that is correct.

14. Also that the matter had had your serious attention?—Yes, it has had attention for a considerable time, and as a result we have decided now to adopt another type of spring.

15. You have devised a spring to endeavour to cope with the trouble?—Yes.

16. Can you tell us at what date the drawings of this spring were made?—An order for springs was sent away in October, 1915, and the drawings would be sent some time before. The springs arrived about the end of 1915: we got them very quickly.

17. And the application of the springs commenced, when?—Almost immediately afterwards.

18. And the result so far?—Has been very satisfactory. None of them have broken, and none of them have closed up.

19. It would appear that you have had no such trouble in connection with bearing-springs?—No, not as far as my experience goes.

20. Are you completely satisfied with the present type of draw-gear?—Yes; I think the present type is quite satisfactory. The spring is the weakest part of it, and the spring is the portion that usually goes. It is possible that if we strengthened up the spring considerably more important parts would have to stand the shock, and would entail more expense in effecting repairs. The draw-gear has been materially increased since the railways first started. Originally the draw-

gear was only $1\frac{3}{8}$ in. in diameter, and in those days the draw-bars used to snap through very quickly. Now they are 2 in. in diameter, and I think that is quite strong enough for the work we are doing.

21. Have you considered at all the desirability of continuing the use of the present type of draw-gear?—That matter has been considered, but it would be most expensive to make an alteration, and very awkward, and I am not satisfied that an alteration is really required.

22. We have been told by Mr. Beattie that a very marked improvement was made in the stock as regards safety by the substitution of steel axles for wrought-iron axles?—Yes, that is so.

23. I think it is a fact that tires play an equally important part in the safety of the running of vehicles?—Yes, I think so; but I think we have more failures with axles than with tires.

24. With regard to tires, can you tell the Commission the process by which the safety of tires is ensured?—Well, we have printed instructions showing the Workshops Managers, the Foremen, and the staff how the tires are to be dealt with, and the Car and Wagon Inspectors would never pass a vehicle out of the shops if the tires were below the minimum at which we allow them to run. Those instructions are printed in the Loco. Code, of which I think you have a copy.

25. Are the instructions illustrated by drawings?—Yes, by diagrams.

26. You consider this matter to be completely safeguarded?—Quite; and I think the fact that we have had so few broken tires shows that the instructions have been properly carried out and are quite sufficient.

27. The Commission has been struck by the lack of lifting-facilities at the various centres, especially at Palmerston North and Wellington. Perhaps you can give some explanation?—Well, I might say, sir, that when I took up my present position schemes were got out for improving practically all the workshops and repair-depots and a large number of engine-sheds. Unfortunately, the war came on and money was scarce, and in most cases those improvements had to be held over. The facilities at Auckland have been very much improved; the workshops have been largely added to, and a new car and wagon depot at Newmarket is now practically finished; but in the other places the work has had to stand over. Palmerston North, Thorndon, and Dunedin require extra facilities; but as far as Dunedin and Thorndon are concerned, both those depots are very close to the workshops, and it only means sending the vehicles which cannot be attended to at the depots to the nearest shop, which is only a few miles away. As regards the facilities in the shops, the practice has always been to give repairs the first consideration, and should the repairs of wagons and carriages accumulate, then the work on the new rolling-stock is stopped, and more accommodation and more staff is provided to push the repairs along.

28. We may take it that the Department has had under consideration the providing of better facilities at Palmerston North and Wellington?—Yes, for some considerable time, and I think both Palmerston North and Wellington will probably be taken in hand almost at once. As a matter of fact, although I had not the time to ascertain definitely before leaving Wellington, from what Mr. Evans said in his evidence I believe the Thorndon increase has been already arranged for.

29. It would appear from the parliamentary railway returns that the cost of repairs has decreased during the last three years. I think you gave some explanation in regard to that matter?—The cost of repairs, I think, for the last two years has decreased by a very small amount. In the case of wagons I think it was about £2,000 for the whole year, and carriages about £4,000. As far as wagons are concerned, I think I explained that about three years ago we started to ease down the work of raising the sides and ends of the wagons. That was an expensive work, and the wagons were no sooner completed and side doors put on than they came back to the shop with the doors torn off. No doubt the Commission will have noticed a large number of wagons running about with the ends raised and the doors torn off. The practice now is that the doors are not replaced when they are torn off, because they are not necessary. As regards carriages, the reason for the apparently reduced expenditure during the last two years, I think, is accounted for by the fact that the previous year included the cost of replacing and repairing rolling-stock that was smashed at Whangamarino, and also in installing the electric light in the sleeping-cars.

30. From what you said, am I to understand that you can honestly affirm that there has been no reduction of repairs with a view to showing in the parliamentary returns a good result in the working of the railways?—I can honestly assure you that such is not the case.

31. As you are aware, that has been suggested?—Yes, but such is not the case. I have had absolutely a free hand, and I have had as much money to spend as I wanted. I think those people who know me well would know that I would not skimp the repairs of the rolling-stock in order to make a good showing in the railway returns.

32. *Mr. Marchbanks.*] When did the replacement of the iron axles by steel axles commence?—I could not say definitely. It has been going on for many years quietly, and three or four years before Mr. Beattie left he wrote to all his officers in very strong terms stating that the old iron axles had to be got out. The work was then expedited and pushed through as fast as we could push it through. He was particularly anxious before he left the service that every iron axle should be taken out. I think as far as he knew all were taken out when he left, but nevertheless we still find an occasional iron axle.

33. Previous to that it had been going on slowly?—Yes.

34. And I recollect they were issuing new stock in 1882?—Yes, and perhaps further back than that.

35. Giving those axles a life of twenty or twenty-five years since you started to put the steel axles in—it must be twenty-five years ago?—Yes, I suppose it is getting on for that, and some of those axles have already been renewed.

36. The total number of axles is 54,778, and the normal replacements in twenty years would be 1,800 a year. In 1911–12 you put in 2,357, in 1912–13 the number was 2,182, and in 1915–16 the number was down to 198. That would mean that some of those axles would have a fairly

long life?—I do not think so. In 1913 most of the stock, or a great portion of it, had just been fitted with new axles, and up to that time our new building had been going on very slowly, so there would not be a very great many axles coming forward for renewal now. As they get up to the age-limit they are being gradually taken out. They may not all be taken out, but the work is going on just as formerly.

37. Well, in connection with the expenditure on stores, it seems to me there has been a fairly large decrease in the last four or five years. I am referring to car and wagon repairs?—Yes. Well, I have the figures here for the last three years, but they are only for the large depots—viz., Newmarket, Addington, Hillside, and Petone. I have not taken out the figures for the small sections.

38. Has the reduction in the expenditure on cars and wagons been due to the difficulty in obtaining stores?—No; up to the present we have had really no difficulty.

39. Your expenditure should really increase, because you are paying more for your stores?—As a matter of fact, we are not, because we had very large stocks when the war broke out. We had nearly seven hundred sets of material for new wagons which had been ordered when Mr. Hiley took charge. Our stocks then were very large, and I was anxious that the work of building new rolling-stock should not be delayed, and we sent Home an order for material for 700 vehicles. That material arrived very quickly, but I am not sure whether it arrived before or after the war broke out.

40. Is that material used for maintenance?—For any purpose that it is required for.

41. How is it charged up?—It is held in store and drawn on, and charged against the work it is required for.

42. It appears to me that the Christchurch stores ought to be slightly greater. Wages have been considerably increased. In 1912–13 the expenditure on wages for car and wagon repairs was £127,855, while in 1915–16 it had gone up to £135,850?—Of course, the material varies considerably from year to year.

43. One would expect some reason for the decrease on account of the difficulty of getting stores since the war broke out, and the higher prices?—Well, I can say this confidently: that there has been really no shortage of material, and nothing has been neglected for the want of material. Of course, I might say this: that since I have been in my present position I have been round the workshops in the various centres very frequently, and I have impressed upon my officers the necessity of being economical, and, although I say it myself, I think I have reduced the expenditure in many ways without in any way impairing the efficiency. In some years our expenditure is much higher than in others, and there are various reasons for that. For instance, occasionally we have bad luck, such as very serious accidents, and the rolling-stock has got to be rebuilt. In other years we may have good times and do not have any of this trouble.

44. It seems to me that there has been a greater diminution in the expenditure on the South Island main lines and branches. In 1911–12 the expenditure on stores was £25,076; in 1912–13, £27,031; in 1914–15, £14,142; and in 1915–16, £14,880. It struck me that possibly some of the material for additions to open lines has been borrowed and not been repaid. Is that not possible?—I do not think that is so. Of course, it is possible, but that would be due to the neglect of the officer who has the material, or the fact that job tickets for repair material could not be fulfilled by stores.

45. But that may account for the apparent decrease?—That may be possible. I have not taken out the figures. No doubt if I went through my books I could explain that. [In 1912–13 the following items were in excess of similar items in 1915–16 for material: Renewed axles, £4,267; raised sides and ends of L wagons, £1,629; rebuilt cars, £1,400; Westinghouse-brake repair parts, £2,204. These are the chief items, and account for £9,500.]

46. Those figures I have quoted are taken from the annual reports?—Yes.

47. Then there is another matter: in your evidence you expressed the opinion that there was no shortage of draw-bar springs?—That is correct.

48. I think, in Auckland a witness before the Commission stated that in 1914–15 there had been a shortage of draw-bar springs for some months?—What I meant to convey was this: that if there had been any real shortage the various officers would have communicated with me and asked to be supplied with draw-bar springs. I read out from my file yesterday extracts which gave all the information available, and although there have been one or two applications for draw-bar springs, whenever the officers were told that shipments were expected early they made no further application. All the officers are aware that there are large stocks all over New Zealand which could be drawn upon at any time. At the present time we are drawing very largely from A.O.L. stocks.

49. The impression in my mind was that owing to the war there had been a delay in obtaining this material?—There has been a great delay in obtaining material, but I do not think that has affected the position, as we have had A.O.L. material to draw from. At the present moment, although we have not lately had any new springs—say, for the last six months—still in Dunedin alone we have a very large number of draw-bar springs, and other springs which could be used for draw-bar springs if we were absolutely stuck.

50. The Car and Wagon Inspector at Wellington speaks of a shortage, and having to use three hundred to four hundred pieced springs. The train-examiner at Palmerston North spoke to the same effect, and also the Workshops Manager at Wanganui, and as far as I can judge it seemed to be confined to the North Island?—Yes. Of course, in the South Island they simply continued the practice which has been in existence for many years. When they get short they go to the A.O.L. stock and take what they require, and replace it afterwards. In September, 1915, I got only one application from the Locomotive Engineer at Petone saying there was a shortage, to which I replied, but he made no further application for springs.

51. Mr. Evans mentioned it in his evidence?—Yes. After he received that advice from my office, if he had wanted them badly Hillside could have supplied him with draw-bar springs.

52. The lifter at Wellington also spoke of the difficulty of getting material?—Yes, they had a local shortage there.

53. Apparently the A.O.L. stock was not drawn upon in the North Island?—No.

54. As far as better facilities at Wellington are concerned, could not temporary accommodation be provided at a slight cost in the Lambton yard? There is practically no shed or pit accommodation there?—No; it is very poor. I think that matter has now been arranged, and additions have been authorized. It is very difficult to get material, and in regard to any work I have asked the Chief Engineer to do, his excuse has been that he cannot get material. There has been a paint-shop approved for Wanganui, but there is a great difficulty in getting material for it.

55. Then in regard to the painting of carriages, so far as I can judge the painting is quite normal. Leaving out the cars touched up, in 1912-13 there were 567 painted and varnished, about the same number in 1914, and in 1915-16 the number went up to 605. I take it that is about normal?—Yes, about the usual quantity.

56. In regard to the painting of wagons, there seems to me to be some falling-off. In 1912-13, according to the annual report, there were 4,076 painted?—Well, my figures are arranged differently—they show painted and touched up.

57. In 1912-13 the number was 4,076, and in 1915-16 the number had decreased to 3,354?—Taking the total number of cars, brake-vans, and wagons, the number touched up and painted has increased. It has gone up from 5,601 in 1912-13 to 7,398 in 1915-16.

58. In regard to the repairs of vans and wagons, in 1912-13 5,504 wagons received heavy repairs?—Yes.

59. In 1913-14 the number that received heavy repairs was 5,794; in 1914-15 the number was 6,008; and in 1915-16 5,722?—My figures are not quite the same. They show that the repairs to vans and wagons were as follow:—

				Heavy.	Light.	Rebuilt.
1912-13	...	...	...	5,195	12,950	...
1913-14	...	...	...	5,461	12,437	88
1914-15	...	...	...	5,716	13,549	61
1915-16	...	...	...	5,419	14,318	42

60. That includes vans, does it not?—Yes.

61. I make it rather more. The total expenditure per train-mile for car and wagon repairs in 1912-13 was 6·02d. Is that correct?—I have not those figures. I know the expenditure has come down, and no doubt those figures are correct.

62. Then it came down further. In 1915-16 it was 5·80d., and yet the mileage increased by 340,000 miles?—Yes, it has come down. One item that has caused it to come down is the expenditure on lubrication. When I first went to Wellington the amount of oil used for lubricating cars and wagons was something enormous. A return was prepared, and it was discovered that in the South Island the oil used for lubricating cars and wagons was very much lower than in the North Island. The return was sent round to all the officers, with the result that the oil-consumption came down considerably, and it is practically the same now all over New Zealand. That has effected a considerable saving. The greater the mileage the less should be the cost per train-mile.

63. Is the cost of oiling the cars and wagons charged to working-expenses?—Yes.

64. In regard to the painting of carriages, is the system now in vogue thoroughly satisfactory?—I think it is under the conditions. Of course, personally, if we had the facilities and the time, and it was considered necessary to keep the outside of our carriages in perfect condition, I should like to see them varnished. It gives the trains a much better appearance; but the method of painting we adopt now is quite sufficient for preserving the timber as formerly, when we used to give them five or six coats of varnish. Even then, although we put on five or six coats of varnish, perhaps a week or so afterwards the carriages would come in absolutely black on account of passing through tunnels, and the framing would be covered with grease and black smoke.

65. *The Chairman.*] There has been a statement made that during the three years under consideration the undergear of the carriages and wagons has been wearing out, and that there has not been a supply of sufficient spares available during that time?—I say that is not correct. The undergear of the cars and wagons has been maintained as well as ever it was while I have been in the railways, and there has been no shortage of spares up to the present.

66. *Mr. Maxwell.*] It would be within your knowledge since your apprenticeship expired that the Department went in for the use of the Timmis spring?—Yes.

67. Have you recollection when you ceased to obtain the Timmis springs?—It was in Mr. Rotherham's time. The Timmis spring was a very expensive spring. The price was continually going up, as far as I can remember, and a new type of spring was obtained which was considered to be quite as good or perhaps better, and was so much cheaper. I could not give you the date.

68. Would it be in the "eighties"?—I think it was. It was a very long time ago.

69. Are you aware whether some of the Timmis springs are still alive and running?—Yes.

70. So that they have not all been failures?—No.

71. Would it be within your knowledge that prior to 1881 all the rolling-stock was designed in England?—Yes, I remember that.

72. And it was designed for a very light system of railways?—Yes.

73. Do you remember that in those days all the stock was lighter—the engines lighter, and the rails, bridges, and the whole system was on a much lighter basis?—I remember that very well.

74. And that all the rolling-stock and engines were designed for light railways?—That is so,

75. And I dare say you remember that no rolling-stock proper was ever designed or built in New Zealand until about 1881, or thereabouts?—Possibly it might have been a little later than that.

76. Then the designs for the stock on the railway system have from time to time been altered, improved, and made heavier, made suitable for faster travelling, carrying heavier loads, and in every way is a superior type of railway and equipment compared to what was started in 1870?—Yes.

77. And which you saw in 1880?—Yes, that is right. There have been very marked advances, in my opinion.

78. Then this superseding of the light style of railway has been going on practically ever since 1881?—Ever since the railways started, and ever since I finished my apprenticeship, which was in 1881.

79. And you are still continuing the system which has been pursued for a great number of years?—Yes, still improving as we can afford it. It is practically the same system that I learnt from my old chief, Mr. Rotheram, after I completed my apprenticeship.

80. Then the date of the introduction of the steel axles was during the “eighties,” was it not?—That I cannot say. I do not remember. I think it was in force in 1888, but I would not like to say before that.

81. My own knowledge enables me to say that it was?—Yes, I think it was before 1888.

82. When you were referring to the question of stores you did not mention the prices. The prices of all stores were cheaper before the war?—Yes, they were; but as far as we are concerned our prices have not gone up very materially.

83. Had you not fairly large stocks on hand?—Yes, we had.

84. And are those stocks not issued afterwards at the prices they were bought for under the contracts?—Yes.

85. And you would still have cheap stores?—We still have some of those stores in hand now.

86. So that the heavy prices you have to pay at the present time will not become manifest in your returns till later on?—That is so.

87. *Mr. Myers.*] You have spoken of the difficulty of obtaining supplies from England now owing to the war conditions?—Yes.

88. Is an endeavour being made to meet that difficulty by obtaining supplies from other parts of the world?—Yes, that has been going on for some time.

89. And are you, by obtaining supplies elsewhere during the war, able to keep up the supplies pretty well?—So far we are. I was merely giving my opinion, and it is my opinion that we are going to feel the pinch from now on.

90. But so far you have kept up very well?—Yes, we have kept up in the matter of supplies.

ERNEST HAVILAND HILEY sworn and examined. (No. 75.)

1. *Mr. Myers.*] You are General Manager of the New Zealand railways?—I am.

2. And have been General Manager since what date?—1st November, 1913.

3. During the whole of your period, then, of service as General Manager Mr. Jackson has been Chief Mechanical Engineer?—Yes, that is so. He was appointed about six months before I took charge.

4. During your term as General Manager have you given instructions or caused any instructions to be given in the direction of limiting the expenditure on repairs?—No, none whatever, either written or verbal.

5. Is the discretion with regard to the expenditure left with the Chief Mechanical Engineer?—The discretion as to the manner in which he spends the money allocated to his branch is entirely in his own hands. At the commencement of every financial year a certain sum is allocated by me for expenditure by the Locomotive Branch, and the Chief Mechanical Engineer at that time indicates more or less the lines upon which he wishes to spend it, but there is no rigid restriction from the General Manager as to how he should spend it.

6. Is the allocation in the first place based upon the Chief Mechanical Engineer's estimate or upon yours?—On the Chief Mechanical Engineer's estimate of what he requires. I might perhaps give the figures showing the allocation for the last few years.

7. Yes, if you have them handy?—I have a statement showing the amount allocated to the Locomotive Branch for the years ending the 31st March, 1911, 1912, 1913, 1914, 1915, 1916, and 1917. For the year 1911 the total allocation was £913,282, and I might draw attention to the fact that the actual amount expended was £30,000 more. I will refer to that again because it shows that the management do not limit the expenditure strictly to the allocation if the Chief Mechanical Engineer finds it necessary to spend beyond that figure, provided the money is available. Each year under review the revenue has been rising, and there has been no necessity to restrict the expenditure. In the next year, 1912-13, the allocation was £982,482, and the actual amount spent was £1,059,292. That was £76,810 more than the allocation. I may say that the amount overspent in one year assists us in arriving at the allocation for the next year; if it is found that the money can be profitably spent the allocation is increased. In 1913-14 the allocation was £1,136,000, and the actual amount spent was £1,154,309, which was £18,309 above the allocation. In 1914-15 we allocated £1,171,000, which was again an increase. The amount actually spent was £1,182,713. In the next year, 1915-16, the allocation was £1,172,055, and the amount expended £1,160,705, which you will notice was less than the amount allowed. It was not required by Chief Mechanical Engineer. For the current year, which will be completed within the next few days, we allocated £1,190,000, which was again an increase, but I cannot say yet exactly what has been spent this year.

8. That is the total allocation?—Yes, for Locomotion Branch, exclusive of A.O.L.

9. But is there a special allocation for any particular part of the work which is under Mr. Jackson's jurisdiction as Chief Mechanical Engineer?—No; there is no division between locomotive or carriage and wagon repairs in the allocation. Of course, new rolling-stock, construction-work is provided for under the A.O.L. grant (additions to open lines). The allocation I have referred to is all for repairs, running-expenses, or maintenance.

10. Those figures you have given are exclusive of A.O.L.?—Yes.

11. You have told us that the discretion as to the expenditure on repairs is left with the Chief Mechanical Engineer, but supposing you found as General Manager that the repairs were not being properly dealt with, may one take it that you would then interfere?—Yes. I should treat any disregard of the maintenance of stock as the gravest dereliction of duty that the Chief Mechanical Engineer could perpetrate if he had had no instructions to the contrary, and he has had none in this instance. His allocation of funds was what he required, and was liberal. I could imagine no greater offence than allowing the efficiency of the rolling-stock to deteriorate.

12. I suppose you are about the country quite a great deal?—Yes, I am a great deal about the country. That is part of my duties.

13. That is in connection with your railway-management, of course?—Yes.

14. Have you any reason to suppose that there has been any deterioration in the rolling-stock?—No. I have every reason to know that the reverse is the case. I know that the regulations and the instructions in regard to the maintenance of the rolling-stock are very complete. I think they are as complete in New Zealand as on any railway in any country. They are certainly quite as complete as those in force in the two railways I have been intimately connected with in the Old Country—viz., the North-eastern and the Great Northern Railway Companies, and on these railways they have maintained their rolling-stock in absolutely first-class order. I know from my own personal supervision that Mr. Jackson is constantly out inspecting. Of course, every time before he inspects he reports to my office that he wishes to go away and where he proposes to go, and therefore I know his movements quite well. I know he is frequently out on the road, and I know also that his inspection when out is extremely and exceptionally keen for a Chief Mechanical Engineer.

15. You put it, then, that he is a keen, practical officer?—I think he is an exceptionally keen, practical officer, and the best practical proof I can give of that is that although he can retire when he wishes to do so I have personally asked him to stay on, because I have the greatest confidence in him, and I am glad to say he is staying on for some time to come. I would also like to say that, apart from Mr. Jackson's natural inclination to see things for himself, it has always been a very strong point with me—and I emphasized it in my special report of 1914 in regard to the supervision of the railways—that the heads of the branches, the Chief Traffic Manager, the Chief Mechanical Engineer, and the Chief Engineer should be given more opportunities and greater freedom for getting about the system and seeing things personally for themselves. They were in 1914 too much confined to the office. I made a particular point of the necessity of allowing them to get out, and in order that they should have that opportunity I recommended—and the recommendation has since been carried out—that assistants should be appointed to each of the officers mentioned.

16. Then, as a railway man you regard the outside supervision by the chiefs of the branches as absolutely important?—I consider it is absolutely vital. I do not see how any officer, unless he sees his own men at work and sees for himself first-hand the condition of the stock under his charge, can possibly be carrying out his full duties.

17. And you emphasized that in your special report?—Yes; and I think it necessary to refer to it now because it shows that the General Manager has not only been in sympathy with the personal inspection by the Chief Mechanical Engineer, but has encouraged it and assisted it as far as he could. In my report dated the 1st August, 1914, I state,—

It is apparent throughout the system that the principal officers have to spend too great a portion of their time on office-routine duties, instead of being able to devote themselves to matters of principle affecting the administration of their respective branches and obtaining first-hand information as to the requirements of the wide area served by the Government railways. This is distinctly detrimental to efficient control. The officers themselves realize the importance of personally supervising such matters, but are debarred from doing this to the extent necessary owing to the fact that they have not sufficient responsible assistance to carry on the routine duties of the business during the absence of the chief officers from headquarters.

And I again refer to the question of supervision under the Chief Mechanical Engineer's Branch at page 4 (D.—2B) as follows:—

The supervision of the Locomotive Branch is good in so far as the limits of the present staff organization will permit. The Chief Mechanical Engineer, who has control of the branch, is charged with responsibility for the condition of the whole of the rolling-stock equipment of the New Zealand railways, as well as with the supervision of the various railway workshops. He is, however, confined too much to his office, owing to his having no qualified assistant. To remedy this I propose to strengthen the Chief Mechanical Engineer's Office by adding to it a technical officer, who, as office engineer, will be capable of dealing with many of the questions of a technical character, thus relieving the Chief Mechanical Engineer of routine work, and enabling him to watch more closely matters that effect the administration of the branch.

18. As a result we have been told that Mr. Jackson has been able to do a great deal more inspection-work than his predecessor was able to do?—Yes, I believe that is so. I know Mr. Jackson's instincts were to get outside frequently, and he is now able to do so.

19. I think you took exception also, did you not, to the statements that were made in the House with regard to the condition of the rolling-stock?—I took the greatest exception to it both in writing and verbally to Mr. Herries. I might say that the first time Mr. Wilford made his statements I regarded them as rather frivolous and irresponsible statements. I wrote to Mr. Herries, and said that we were prepared to hand in a statement containing reports of each of

the responsible officers, including the Chief Mechanical Engineer, the Locomotive Engineers, and every responsible officer in charge of the rolling-stock, but intimated that I did not think any inquiry was justified unless Mr. Wilford produced some facts to substantiate his statements. When the parliamentary paper D.-6 was laid on the table of the House containing the statements of myself, Mr. Jackson, and every other officer responsible for the condition of rolling-stock, Mr. Wilford took upon himself to again repeat his statements in regard to the unsafe condition of the rolling-stock, and also said that he preferred to believe the statement of his unnamed informant against the considered statements of the responsible officers, and most emphatically repeated his allegation as to the unsafe condition of the rolling-stock.

20. You regarded that as the effect of his speech?—Yes; and then I asked, in conjunction with other officers, that the inquiry suggested by Mr. Wilford should be held, because I considered it both unfair and unwise that things should be left where they were.

21. In the interests of the travelling public and the Railway officers?—Yes.

22. In addition to what was said in the House, did you have a memo. from the Minister dated the 15th July, 1916, of which the material part was as follows: "Mr. Wilford, in subsequent conversation with me alluded especially to the under-carriages, springs, &c."?—Yes.

23. Further, "It was said that instead of new springs being put in old ones are repaired and put in new carriages. He has got his information from some of the staff, and said he would be prepared to substantiate the charges and bring up witnesses if an inquiry was made"?—Yes, I received that.

24. The reports in D.-6 were apparently prepared after that?—Yes, I think they were. Those remarks you have read were attached to the memo. I wrote to Mr. Herries saying that statements would be submitted by the responsible officers.

25. A reference has been made by one or more members of the Commission, and also by some of the witnesses, to the facilities at various places, particularly at Palmerston North and Wellington, for lifting vehicles at the stations?—Yes, that is so.

26. Is there anything you can say with regard to the accommodation generally at the repair sidings, and particularly at such places as Palmerston North and Wellington?—In regard to repair sidings generally, in reviewing the railway facilities before making my report in 1914, my attention was called by the Chief Mechanical Engineer and others to the lack of accommodation at certain places, and I indicated very clearly in the 1914 report that additional facilities were necessary, and that the new works should be taken in hand without delay. The requirements of Palmerston North and Wellington were dealt with in particular. At Palmerston North the facilities for not only lifting wagons, but for dealing with goods, passenger, or every description of traffic are altogether inadequate, and I included this station in the list of new works which should be taken in hand at once. The list of new works was a large one, as the report included a programme for the next five years, the sum to be expended amounting to over £3,000,000, because it involved new stations, yards, &c., at Auckland, Wellington, and Christchurch. The new station, yard, and lay-out at Palmerston North involved a sum of over £40,000. Palmerston North I regarded as perhaps the most pressing of all the new works I have mentioned, because the traffic there has entirely outgrown the accommodation, and although the general programme has been held up I hope to be able to start at Palmerston very shortly—perhaps next year. Cabinet adopted my report, and Parliament afterwards approved it, and it has only been the war and subsequent financial stringency which has prevented such works as those at Palmerston North being gone on with at once. The same applies to Thorndon Station.

27. As far as Palmerston North is concerned, the Commission can take it that Palmerston is a matter you have been somewhat anxious about so far as facilities are concerned?—Yes; it has been brought under my notice on more than one occasion by the Chief Mechanical Engineer, and I knew there was a lack of facilities there. They were good enough in previous years, but the business is increasing, and it is intended to make improvements as soon as we can.

28. And but for the war I suppose they would have been carried out long ago?—Yes, or, at any rate, well in hand. The same applies to Wellington. Wellington is, however, a much bigger scheme, and it is no good starting on Wellington new station unless we were sure of £400,000. In consequence the Wellington scheme is in abeyance, and it has been found necessary at Wellington to deal with one or two urgent requirements at once, and one of the matters involving expenditure which has been authorized by me is the enlargement and improvement of the lifting-shed for the repair of wagons.

CHRISTCHURCH, MONDAY, 12TH MARCH, 1917.

The Commission met at 2.30 p.m.

JOHN VALENTINE further examined.

1. *Mr. Myers.*] You are being recalled, Mr. Valentine, at your own request, I think?—That is so.

2. You are acquainted with Mr. Wilford?—Yes.

3. For about what length of time have you been acquainted with him?—About twenty-four years intimately.

4. Do you remember being in Wellington on the 10th July, 1916?—Yes, I do.

5. Did you see Mr. Wilford on that day?—Yes; I saw him on the morning of the 10th in his office.

6. What did you call for—have you any objection to saying?—I called on private business in connection with the winding-up of my son's business who joined the 19th Reinforcements.

7. And who was then in camp?—He was just proceeding to camp that week.

8. Had you called primarily to see Mr. Wilford, or to see some one else in the office in regard to that business?—I called primarily to see him. I did not know who would transact the business, but I called to see the business carried out.

9. Was Mr. Wilford attending to it or some one else in his office?—I think Mr. Wilford had it in hand at first, but I was not aware he had relegated it to some one else until I went there, when he told me that Mr. Flaws, his managing clerk, had the business in hand.

10. Well, having transacted your business with Mr. Flaws, did you see Mr. Wilford?—I did.

11. At your own desire?—Well, I looked in at the door and saw him there. I never made any appointment or had any desire particularly to see him, but I went into his room.

12. Did you go to see him with regard to a railway matter or in regard to any other matter in particular?—Purely on private business.

13. You are still referring to your son's affair?—Yes.

14. You were seeing him in regard to some special matter other than that which you discussed with Mr. Flaws?—Yes, in connection with my son.

15. Did you discuss that private matter with Mr. Wilford?—Yes.

16. And did you during the interview have any conversation with him in regard to railway matters?—Yes, I did.

17. First of all, tell me who introduced the conversation about the railway matters, Mr. Wilford or yourself?—Mr. Wilford himself.

18. I will get you directly to give me the whole conversation in your own terms, but first I want to ask you just a few specific questions. Did you in that interview say anything condemnatory as to the condition of the rolling-stock?—Nothing whatever.

19. You were an officer concerned with the rolling-stock, of course?—Yes, I was Car and Wagon Inspector for the Wanganui district.

20. Did you make any representation to Mr. Wilford with a request that he should pass it along?—No, sir, none whatever.

21. Did you say that you declined to carry the responsibility, presumably for the condition of the rolling-stock, on your shoulders, and that you made representations to Mr. Wilford for that reason, and did you ask him to pass it along?—No.

22. Did you discuss with him the question of your giving evidence before an inquiry or before a Committee of Parliament, or any other form of inquiry?—No, I did not; I was not asked.

23. Did you make any such statement as this: "Mr. Wilford, even if I have to go before a Committee of Parliament and give my evidence I am prepared to do so. You can call on me if you want to, and if you get an answer from the Minister stating that no such thing exists I will come to your aid, because I have only a few more years to go as far as my superannuation is concerned, and I am prepared to take any risk there is"?—No, sir, I never made that statement at all.

24. When you went to Mr. Wilford's room, was it in your mind to have any conversation with him regarding the rolling-stock?—None whatever. It was as far distant from my mind as the Pole.

25. Well, would you mind just telling the Commission in your own words how the conversation started, and give the conversation as nearly as you can remember it?—When I went into the office to Mr. Wilford we exchanged the usual courtesies—the usual talk that takes place between friends. I had not seen him for some time. After we had a little chat he told me that he was going to set up or ask to be set up a Board of inquiry in the House—going to move for it, and he named Mr. Marchbanks as a gentleman who would probably be upon that inquiry. He then turned and said, "Is it a fact that they are using broken springs?" and I said, "Yes; it is inevitable owing to the war and the shortage of springs."

26. Well, go on?—He then said, "Well, any one will be privileged to come along and give evidence in regard to that matter." I said, "Unfortunately, I have been blamed for putting those springs in," and I said, "Certain members of the service have been along to the General Manager and have passed remarks about me which are not very complimentary, and I feel rather sore upon the matter, and I do not think it is right that they should do so." Immediately he mentioned the springs I had in my mind that probably the same men were at work again, and as I had not received any definite satisfaction that I was not responsible I felt very much hurt on the subject.

27. You knew you had issued a circular in June, 1914, in regard to the use of pieced springs?—Yes.

28. And did you know that Mr. Whisker had referred to that matter in an interview that the Executive of the Amalgamated Society of Railway Servants had with Mr. McVilly?—Yes; I got a copy of the report of the deputation.

29. What else happened between you and Mr. Wilford?—Nothing else.

30. Was the word "responsibility" mentioned, do you remember?—Yes; I said I did not feel inclined to take the whole of the responsibility, and I was being wrongly blamed for it.

31. Did you tell Mr. Wilford, can you remember, how it was you issued your circular to the train-examiners?—Yes; I told him that I had only acted in accordance with the instructions I had received.

32. Meaning the instruction from the Locomotive Engineer?—Yes, from the Locomotive Engineer.

33. Was there any discussion between Mr. Wilford and yourself as to the question of the safety of the public being involved by the use of those springs?—No, sir; it was never introduced in any shape or form.

34. Did either he make to you or you to him any representations in regard to the use of pieced springs as bearing upon the safety of the public?—The safety of the public was never introduced nor discussed between us at all.

35. Have you given us as far as you can remember the whole of the conversation that took place between yourself and Mr. Wilford upon this point?—Yes, that is pretty well the whole conversation. I was not in his presence more than thirty minutes altogether.

36. You say the conversation was opened by you not telling him anything, but by his saying he intended to move for an inquiry, and then he asked you the question?—I had no idea when I went into his office that any question was to be asked or the subject discussed.

37. When you say you said you did not think you should have placed upon you the responsibility, what did you mean by that?—I was of opinion that as this had happened I should be blamed wholly for it. I could see no other course for it at that time.

38. You mean if there was an inquiry?—Yes.

39. I think I asked you the question in Wanganui if you have ever suggested that the use of pieced draw-bar springs on wagons in any way affects the safety of the public or train?—No, I do not think it affects the safety of the public, because considering the trouble I took in consulting with Mr. Richardson, and the trouble I took to go round to my staff and instruct them in the manner of putting them in so as to get the best results from the springs, I could not possibly think so.

40. Are you of opinion that it could have no effect on the safety of the public?—I am certain. I do not think I could ask a man to do it and still think there was a danger to the public. I would not do so.

41. You see how Mr. Wilford put it in the House. I will repeat his words: “Now, I have had it stated to me by a man who was himself concerned with that rolling-stock that he declined to carry the burden of responsibility on his shoulders, and that he made his representation to me for that reason, and asked me to pass it along”—I never did anything of the sort. The only responsibility I said I would not carry was the instruction in regard to the use of pieced springs—saying I would not carry the whole responsibility.

42. Then he says, “I went to the Minister of Railways and told him privately that I had been informed of the condition of some of the railway rolling-stock of this country.” Did you have any conversation with Mr. Wilford regarding the condition of the rolling-stock other than the conversation that you have already referred to regarding the question of pieced springs?—I never discussed it for one moment with Mr. Wilford.

43. Now, you say that was on the 10th July?—Yes.

(I would point out to the Commission that Mr. Wilford’s first question without notice in the House was asked on the 10th July, which was on the evening of the same day he had seen Mr. Valentine.)

44. And you say that Mr. Wilford, when he spoke to you, said he was going to ask or would ask for an inquiry?—Well, I am not positive whether he said he would ask, or whether he was going to ask. I would not be sure upon that point.

45. But he told you he was mentioning the name of Mr. Marchbanks as a person to be asked to make the inquiry?—That is so.

46. I would like you to be sure, if you can, about the date of the 10th July?—Well, that is the time I feel sure I was on leave. I applied for leave.

47. You saw Mr. Wilford on the Monday morning?—Yes, on Monday morning, the 10th July.

48. And according to *Hansard* it was on the evening of the same day that he asked the question?—Yes.

49. Was there any talk between you and Mr. Wilford on the question of your superannuation?—None whatever. It was never mentioned.

50. Would it be correct to say that during that interview you were worried about the condition of the rolling-stock?—No, I do not think so, considering that such a time had elapsed. I think there was more worry about my own private affairs, if there was any worry at all; but I do not know that I was worried.

51. Had you any reason to be worried about the condition of the rolling-stock?—No, none whatever.

52. Was there any reason for your saying or suggesting that the condition of the rolling-stock was so serious as a matter of public safety that you could not take the responsibility?—I could not possibly have said that, and never did say it.

53. You have already said, I think, that the use of pieced springs was in no way dangerous to the travelling public?—Yes.

54. You have said you did not say so at that interview, but did you suggest such a thing?—The question of whether they were dangerous or not was never introduced.

55. Then, if it were said that you stated that pieces of draw-bar springs were being put together instead of the use of one spring, and that that was dangerous to the public, what have you to say to that?—I have to give it a total denial.

56. Now, have you seen Mr. Wilford at all or had any discussion at all in regard to the question of springs or rolling-stock since that date?—I have not seen Mr. Wilford since that date. To be perfectly true, I saw him in Wanganui when he delivered a patriotic lecture. I was in company with my wife, but no conversation took place between Mr. Wilford and myself.

57. How long ago was that?—I do not know. I know I went with my wife to hear the lecture, but I have never since had any conversation with Mr. Wilford.

58. We have been told that no personal communication was sent to you in connection with this matter. Are these two telegrams which were despatched on the 6th February and received by your wife addressed to her [telegrams handed in; Exhibit Q]?—Yes.

59. The first one was sent out at 9.30 a.m. on the 6th February: "Mrs. J. Valentine, Hutt Road, Petone. Could you wire me Jack's address to-day, please?—THOMAS WILFORD." The second telegram, sent on the same day at 11.25 a.m., reads, "Mrs. J. Valentine, Railways, Wanganui. Could you wire me Jack's address to-day, please?—THOMAS WILFORD." Was any reply sent to them?—Yes; I sent a reply myself.

60. What was the reply?—"My address is Carlton Terrace, Gonville, Wanganui."

61. Did you have any further communication from Mr. Wilford?—None whatever.

62. Did any envoy or agent of Mr. Wilford's discuss this matter with you?—I do not remember. I do not think so; in fact, I am not positive. If you will tell me the date on which Mr. Wilford sent his envoy out probably I will be able to tell you.

63. Well, Mr. Wilford gave evidence on the 19th February at Wellington, and this is what he says, "I sent a friend of mine unknown to him" [that is to you] "last week who jumped into a train and chatted the thing over with him" [that is you] "without the man knowing it was coming from me, because I expected he" [that is you] "would come to me and say, 'I will see the thing through.' That is what I would have done. The friend I sent said, 'I suppose Mr. Wilford will produce the man who told him so,' and the man" [that is you] "said, 'I hope he won't.'" Did you have any such conversation?—No. That would probably be between the 6th and 19th. I might state that from the 2nd January practically I had a month's holiday. I made a flying trip to Auckland in conjunction with my wife, intending to go to Whangarei, but I turned back because I was not very well. For the balance of the time I was practically in bed at Wanganui sick. My holidays finished about the 2nd February. I went to Wellington also in conjunction with my wife during the holidays. I returned from there not feeling very well, and I had to take to bed again and put in the balance of my time in Wanganui.

64. That is all prior to the 2nd February?—That is up to the 2nd February.

65. It is after that I want you to come to—after the 6th?—From the 6th to the 16th I was never away from Wanganui, which my vouchers will show. I had finished my holidays, and I had to pick up my office-work, and I was not away until Friday, the 16th, when I went along with some papers from this Commission to get signed. Anyhow, up to the 9th, or from the 6th to the 16th, I was never absent from Wanganui.

66. Would you have been travelling in any train during that period?—No farther than Aramoho, and I was in Aramoho on the 9th February.

67. It is suggested that somebody, I do not know who, got into the train and discussed this matter with you, and said, "I suppose Mr. Wilford will produce the man who told him so," meaning the person giving him the information, and you said, "I hope he won't"?—Well, you see how utterly impossible it is for that to have taken place. My usual method, as a rule, is that when I go to East Town I go by the 9.20 a.m. train. Invariably I travel in the guard's-van, because I can go out by the Palmerston train and alight at the bridge, and that saves me a little walk from the station. I suppose four times in a dozen I may go in by train, but I invariably take the tram in because it is more convenient.

68. Well, you say that such a conversation did not take place?—It could not possibly, and never took place at all. If it was possible for the thing to have taken place, surely the man would have come to my office. I was not on the train.

COUNSEL'S ADDRESS.

Mr. Myers: May it please the Commission. In the speeches which were made in Parliament by Mr. Wilford and Mr. Veitch a number of allegations were made. It may be suggested that they were not all made in express terms, but my observation upon that is this: that if they are not made in express terms, some at least are made by necessary implication; so that of the whole of those charges which I am now about to indicate it can be said that they were all made either in express terms or by necessary implication. The charges are these, as will be seen by a reference to the *Hansard* reports of the speeches:—

1. That broken springs had been pieced together for use in *carriages*. That is necessarily implied from the question which Mr. Wilford put in the House on the evening of the 10th July.

2. That the use of pieced springs increased the wear-and-tear of the under-carriages of vehicles. That is involved in the speech which was made by Mr. Veitch.

3. That the use of pieced springs prejudices the safety of the travelling public.

4. That there was a shortage of the necessary equipment for renewals in the Stores Department, and that this shortage was quite irrespective of the conditions created by the war. That is to be gathered, I think, from the speeches, because it was suggested by the Minister during the course of the discussion that there might be some shortage owing to the war, and Mr. Wilford said that of course he would not complain of that. It follows, therefore, that the shortage of which he complained was a shortage that was not in any way due to war conditions. Of course, the Department does not admit that there ever has been a shortage due to war conditions or to anything else, but my point is that that is one of the charges which were made against the Department.

5. That the painting of the vehicles was neglected, and that there was consequent deterioration which would involve enormous cost in the future. That was part of the burden of Mr. Veitch's complaint.

6. That the present General Manager was not maintaining the rolling-stock in the high state of efficiency in which it was handed over to him, and that the policy—presumably the policy of the Department—had been not to maintain the rolling-stock in as high a state of efficiency as previously.

7. That, generally, the rolling-stock had been neglected, and that its condition had been allowed to deteriorate. As to this point, it seems to me that if ordinary English conveys any meaning at all, that is the meaning to be extracted from the speeches which were made in the House. It certainly was implied, it seems to me, by Mr. Veitch, and it seems to me that that point was put just as strongly, if not more strongly, by Mr. Wilford.

8. That the reports of the responsible officers on these matters were prejudiced, unreliable, and untrue, and that they were not to be believed as against the word of an anonymous officer whom Mr. Wilford alleged he had in readiness to prove his charges.

Now, those are the eight charges, if it please the Commission, which I suggest are conveyed by the speeches which were made in the House; and the speech of Mr. Wilford and the references made by him were of a virulent character. I do not make the same statement in regard to Mr. Veitch. Those charges conveyed a very grave reflection upon a number of men. They reflected upon the Chief Mechanical Engineer, upon the Locomotive Engineers, upon the Car and Wagon Inspectors, upon the train-examiners, and, incidentally, I suppose, upon the General Manager and those associated with him. I should say that if the charges were true, then it is quite plain that a good many changes would be required in the administration of the railway system in this country—I mean a good many changes in the personnel of the staff concerned in the administration of the railways. On the other hand, if the charges are untrue, then the minds of the travelling public should be reassured on a matter which seriously affects their safety, and, besides that, the officers upon whom the statements reflect are entitled to be cleared. But it does seem to me that the charges are of the gravest possible nature. Either they are true or they are untrue, and if they are true, then the men who are in charge of the rolling-stock—I do not care whether it be in the Head Office or in the Chief Mechanical Engineer's Office—are not men who should be there to perform those duties. I want to emphasize one point, and that is this: I apprehend that there may be, perhaps not now but later on, a good deal of discussion with regard to this Commission and the causes which have led to its being set up, and I want to emphasize the point that it is a member of Parliament—I refer to the member for Hutt—who is responsible for this Commission. He is responsible in the first place, and he is responsible in the last place. He is responsible in the first place because he asked that there should be some Commission or an inquiry similar to that which has in fact been set up. He was responsible in the last place because the officers concerned made their reports, and he nevertheless doubted their veracity, and continued to ask for an inquiry. Now, members of the Public Service can stand a good deal: they are bound to stand a good deal; they are there to be criticized, and it is quite proper that they should be criticized and criticized harshly. But when their honour and their veracity are impugned—and it has to be remembered that they cannot hit back, and they cannot defend themselves—it is time that the public should look into the charges which are made, and to see whether or not it is right that public servants should be attacked in this way and have their veracity impugned. We hear a good deal from men who occupy public positions as to what their duties are, and it is felt by the officers of the Railway Department, having regard to what they have experienced in this case, that men who delight to parade what they call their public duty should be taught that they cannot lightly make irresponsible and foundationless statements reflecting upon public servants, especially when those statements are of an alarmist nature respecting the public safety. No one suggests that any member is wrong in asking a fair question; to ask a fair question is one thing to which nobody can take exception, but to follow up that question by making rash and alarming statements upon no evidence at all, and by vilifying inferentially, if not expressly, a body of public men who are not in a position to defend themselves is something of quite a different nature. In the present case the officers of this Department would probably have had the greatest difficulty in having themselves cleared from the charges made against them but for the fact that Mr. Wilford had himself, in the first place, asked for a Commission or for an investigation of some kind. It was that request that enabled the officers of the Department, who had first of all endeavoured to make full reports and to avoid the expense of a Commission, to ask themselves that the inquiry which had originally been asked for by Mr. Wilford should be set up so that all these charges might be inquired into, and so that it should be ascertained whether there was anything in the charges, or whether they were, as it is contended they are, absolutely without foundation and without the least justification. And what has happened since the inquiry has been set up? The members who spoke in the House attended before this Commission and have given evidence. Mr. Veitch, the member for Wanganui, certainly gave his evidence in a frank and manly way. He said frankly what his charges were, and I shall show a little later—I submit the evidence shows it quite plainly without any analysis of that evidence being made by me—that the charges amount to nothing at all. On the main question to which he addressed himself in the House, it will be remembered by the Commission that, after a demonstration by the Chairman of the Commission by a model which was upon the table in Wanganui, Mr. Veitch admitted—to a certain extent, at all events—that he had been mistaken; and I submit it is plain enough that his main complaint, being based on a misapprehension, necessarily falls to the ground.

The portion of his evidence to which I refer is contained in page 74 of the notes of evidence. The Chairman put to Mr. Veitch this question :—

You really do not contend that a broken spring is no spring at all?—No, not so far as that.

There is a little matter that we had better clear up before we go any further. I think there was some discussion in the House between yourself and the Minister of Railways as to the draw-spring being portion of the running-gear.

And so on. Then the Chairman says,—

Now, turning to your speech again, you say, “Given a train with two draw-bars on each vehicle, and 100 vehicles, you have 200 draw-bars, in each of which the spring is broken into two parts, &c.

Then Mr. Veitch said.—

What I had in mind was this: that, owing to the weakness of the springs, the normal strain of handling a heavy load would bring those springs up solid, and that when any abnormal shock came along—that is to say, in hauling a large train, because I was thinking of the haulage of trains principally for the moment—these weakened springs would under normal conditions become solid when they should not, and that there should be a whole spring there which should have a little life in it. It is the final shock which brings the spring up solid which has to be met, and therefore, owing to the weaker spring giving way and becoming solid under normal pressure, that from time to time throughout the day's work the train would be very severely strained, and there would be an extra strain on the vehicles.

Then the Chairman said.—

I think you are under a misapprehension if you were considering the haulage of the train, because each spring only pushes the vehicle to which it is attached?—The spring next to the engine hauls the whole train—it has the whole weight of the train on it.

No?—Surely it has the weight of the whole train on it?

No?—Do you mean to say that the guard's van has the same weight as the buffer of the engine?

What I mean to say is this: that the buffing-spring or draw-spring under the brake-van has not the whole weight of the train on it—it is simply in traction pushing the brake-van along?—The spring at the back, yes.

And in the case of each carriage during traction, the springs are only pushing the single carriage to which they are attached?—But power is transmitted from one to the other. There must be a greater pressure on the draw-gear at the front than at the back. Supposing an engine is hauling a train and exerting certain pressure on a coupling-hook, it takes so much power to pull the whole train, and the spring at the end of the front vehicle has upon it the whole weight that the engine is exerting to pull the entire train.

That is what you consider to be the case?—Yes.

I think it would be as well at this stage of the inquiry if that point were cleared up. I think your supposition is an erroneous one.

[The Chairman then produced a model of the draw-gear of a carriage, with which he demonstrated to the witness that in traction the draw-springs on each carriage or wagon had the effect of pushing each carriage or wagon along, and that each spring only carried the load due to the traction of the vehicle of which it formed part, and this irrespective of the position of the vehicle in the train.]

Do you now understand the position?—Yes. If the spring is weak it will not do its work as well in buffing.

I take it that after your inspection of that model and consideration of what I have put before you, you do not desire the Commission to accept as accurate the statement you made partially under a misapprehension of the construction regarding the 600 in. of slackness in a train?—The model which has been shown to me certainly proves that the position would not be quite as bad as that.

I might say, however, that it was upon that supposition of his that he based the statement that the General Manager was not maintaining the rolling-stock in as high a state of efficiency as when it was handed over to him, and it is because what he has said has been clearly shown to have been said under a misapprehension that I say his chief charge falls to the ground. I certainly think that Mr. Veitch, after the demonstration with the model, might have been a little more generous than he was and gone the length of saying that he was completely wrong. However, he did not go so far as that, although he admitted that he was wrong to a certain extent, but apparently he did not know to what extent he was wrong. It is submitted that the demonstration showed, and the facts show, that he was completely and entirely wrong in the premises upon which his opinion as expressed to the House was based.

Mr. Wilford took an entirely different attitude before the Commission. He had acted, so he told the House, on evidence which he was prepared to call. Now, we know that members of Parliament very often ask for an inquiry or for the setting-up of a Commission, and they frequently know when making the request that the request is one which will never be granted; and Mr. Wilford's attitude before this Commission justifies the suggestion that at the time when he spoke in the House he probably never expected that his request would be granted, and that a Commission would be set up. Be that as it may, the Commission was set up primarily on his application and at his request. Mr. Wilford had stated in the House that he had evidence which justified his charges, that he had evidence which he was in a position to call, and that he had evidence whereby he could prove his charges. But what has happened? He did not call a single witness, and now that we have heard Mr. Valentine, perhaps the reason why he called no witnesses is pretty plain. And I want to make this point, and at this stage: that if Mr. Wilford in his speech in the House had been referring only to the draw-bar springs, there was absolutely no reason why he should have taken up the attitude of refusing to call Mr. Valentine, because when he gave evidence before the Commission he had seen parliamentary paper D.—6. He knew that Mr. Valentine had said exactly what Mr. Valentine said in the box to-day he told Mr. Wilford. He knew that Mr. Valentine had said, as every other officer had said, that pieced springs were used in wagons. If Mr. Wilford is correct in saying that all he had in his mind when he made his speech was draw-bar springs—or springs, as he calls them—he would not be committed to draw-bar, or bearing-springs, or any other springs; but if that is correct, then there was no reason whatever why he should not call Mr. Valentine, because Mr. Valentine had already made his statement in D.—6. Further, Mr. Valentine had given evidence before the Commission, and in both his statement contained in D.—6 and his evidence before the Commission he said without the least hesitation that pieced draw-bar springs had been used in wagons. Now, I suggest that the inference to be drawn is that when Mr. Wilford made his speech he had a great deal more in

his mind than draw-bar springs, and that inference is certainly supported by the language which he used in his speech. Instead of calling witnesses he comes before the Commission and poses as having asked the question as a public man, and says that he made the charges in the performance of his public duty, and he says even at this late stage, bear in mind, that he does not withdraw a word of what he said in the House. He says at page 83, "I do not take back anything I said. I believe I did the right thing, and I would do it again under the same circumstances." And then he tries to justify himself—I was almost using a much harsher term—by relying upon the question of springs and springs only. And he says, forsooth, that his case is proved by the admission of the officers that pieced springs have been used. Now, in the first place Mr. Wilford said, or necessarily implied, that pieced springs were used under the carriages. That can only mean under *the cars*; and he also said or implied in the House, and he has said over and over again when giving evidence before this Commission, that the use of those pieced springs was prejudicial to the safety of the travelling public. Both the statement, or the implied statement, that pieced springs have been used under the carriages or cars and the statement that their use is in any way prejudicial to the safety of the travelling public are alike devoid of foundation, and are alike without justification. And I want to point this out to the Commission: that if all Mr. Wilford had in mind when he made his speech was the pieced draw-bar springs, then his question in the House on the 10th July was unnecessary and unwarranted, and his speech condemning the rolling-stock and the officers might be characterized in much stronger language, and I say this because the matter of draw-bar springs had been fully gone into a year before. That will be seen by reference to page 96 of the notes of evidence. The Commission will remember that Mr. Wilford asked somewhat dramatically that Mr. McVilly or I should be called upon to produce the report of an interview which certain representatives of the A.S.R.S. had had with Mr. McVilly in July, 1915. It was apparently suggested that the file relating to the interview was being hidden and secreted from the Commission. Of course, up to that point we had not had an opportunity of putting it in. As a matter of fact, frankly, we had not thought of it, and I am very much obliged to Mr. Wilford that he should have made the complaint and the request he did make, because it shows that his question and his speech in the House were not *bona fide* addressed to springs and springs alone. It shows that any question with regard to these springs was absolutely unnecessary and unwarranted. Mr. Wilford did not apparently think of that at the moment when he was before the Commission, but fortunately when we produced the file it had attached to it the history of the matter following the interview between the representatives of the society and Mr. McVilly. The interview between Mr. McVilly and the representatives of the society took place, I think, in July, 1915, and on the 14th September, 1915, Mr. Hiley, the General Manager, replied to the society stating that the instruction to use pieced draw-bar springs "was issued by direction of the Locomotive Engineer, and as the Chief Mechanical Engineer concurs with it I can see no valid reason why it should be withdrawn. I desire also to state that the strictures made on the Car and Wagon Inspectors by your executive were unwarranted, and should not have been made." But the file showed that after that, and only a fortnight after—namely, on the 28th September, 1915—Mr. Veitch asked the Minister of Railways,—

Whether an instruction has been issued in his Department directing that when broken draw-gear springs are discovered in vehicles other than passenger-cars they are to be replaced with parts of broken springs; and, if so, does he consider that this is in the interests of the public safety?

The Minister of Railways replied,—

An instruction was issued on lines indicated applicable to draw-bar springs of wagons, and only in cases where the standard strength could be reinstated by the utilization of a portion of a spring properly fitted to the draw-bar. The matter has been looked into carefully by responsible officers, and the Chief Mechanical Engineer, who is in charge of the rolling-stock, considers the safety is in no way impaired.

Now, that was in September, 1915, and Mr. Wilford, who must have known that that question was asked and answered, now suggests that all he had in mind when he asked the question on the 10th July, 1916, and made his speech in the House a little later on the motion that the reports of the officers do lie upon the table, was this question of draw-bar springs. Well, I will leave the circumstances to speak for themselves, and I will leave the wording of his speech to speak for itself. And now, if it please the Commission, Mr. Wilford comes forward before this Commission and says he has proved his case, because something has been admitted which has been proved to have been a recognized railway practice for at least thirty-six years, and which was fully and publicly stated in Parliament a year before he asks this question, and which was further fully and publicly admitted in that statement, D.—6, which followed the asking of Mr. Wilford's question. So that here we have something which has been going on from time to time for the last thirty-six years, something which was stated publicly by the Minister in the House, and something which was afterwards stated in those reports comprised in D.—6, and then Mr. Wilford comes forward before the Commission and says, "Here is my case proved." Mr. Wilford says that at the time when he made his speech he had not had an opportunity of reading D.—6. Assuming that to be so, there is still the fact that this practice is a practice at least thirty-six years old in the New Zealand railways, and there is at least the fact that here in *Hansard* of a year before we find the self-same question asked and the self-same question answered, and answered in precisely the same manner as it has been answered before this Commission. I suggest that really it is childish to come forward now and say, "Here is my case proved because the officers have admitted that they have used pieced draw-bar springs on wagons." It will be remembered by the Commission perhaps that Mr. Wilford, in his short address to the Commission, says at page 80—

I want to say that I express my extreme gratification that *all I said* in Parliament has been proved already by the Commission, and that the Engineers admit that broken springs have been used, *as I said*.

The Engineers have admitted no such thing, and it is contrary to fact to say, as Mr. Wilford suggested or implied, that pieced draw-bar springs have been used under carriages or cars. They

have been used, and have been used for thirty-six years past, under wagons, which is quite a different thing, so that Mr. Wilford is wrong when he says that the admission made by the Engineers goes so far. It does nothing of the kind. And he says he is gratified that all he said in Parliament has been proved by the Commission. The only thing so far as his charges are concerned that has been admitted by the officers of the Department, and the only thing that is true, is that pieced draw-bar springs have been used *in wagons*. Mr. Wilford goes further, and he says, and has said throughout, that the use of pieced draw-bar springs is prejudicial to the public safety: and then he comes and says that all he said in Parliament has been proved. Well, all I can say is this, by way of comment upon that attitude of Mr. Wilford's: that if he can see anything that has happened before this Commission that can gratify him he is very easily gratified and pleased. Now, sir, it may be that I am speaking somewhat strongly; but I am only speaking strongly as the representative of the officers of the Railway Department who have had these unfounded charges made against them, and I speak strongly because they feel strongly; and they are desirous of showing, in the only way that is open to them before this Commission, their resentment at this method of attack which has been adopted, and adopted in a foundationless way, in regard to the matters which are the subject of this inquiry. And I put it to the Commission that when a man comes forward under circumstances such as those under which Mr. Wilford has come forward and tells the Commission, and, through the Commission, the public, that he is gratified that all he has said has been proved, such an attitude is only a method of endeavouring to save that man's face; and I say without hesitation that the member for Hutt would have been entitled to much greater respect had he frankly admitted he made a mistake, and had he in a manly and straightforward manner expressed his regret for making charges for which it was found there was no foundation or justification. But perhaps there is a charitable way to regard the position in which Mr. Wilford finds himself, and that charitable way is to assume unreservedly the correctness of Mr. Wilford's statement at page 80 of the evidence, where he says, "I profess absolute ignorance on the subject"; and where, at pages 81-82, referring to Mr. Mackley's statement, the Chairman said, "I would point out that Mackley is referring there to bearing-springs," and Mr. Wilford replies, "What is the difference? Frankly, I do not know. Will you tell me that"; and where, at page 85, when Mr. Wilford is under cross-examination by myself and when I am asking him about draw-bar springs and bearing-springs, he says, "I know nothing about such subjects. I am not going to express an opinion. I know as much about it as you do about the fourth dimension of space." Well, the most charitable way in which the officers of the Railway Department who have been attacked by Mr. Wilford can regard his attitude is to assume unreservedly the correctness of those statements, and to believe that Mr. Wilford misunderstood Mr. Valentine in the conversation that took place between him and Mr. Valentine at his office on the 10th July, and that he unconsciously and unintentionally exaggerated what Mr. Valentine had said to him.

Now I want to refer briefly to some of the statements Mr. Wilford made. I have already referred to the gratification he expressed, and to his candour in professing absolute ignorance of the subject. That is at page 80, and at page 83 he says he does not take back anything he said. And I desire to point out in this connection that when a man makes charges, and then tells you that he is absolutely ignorant of the subject, but says, "Nevertheless, I decline to take back anything I said," well, that person cannot complain if he finds himself subjected afterwards to some severe comment. Then there is no doubt as to what Mr. Wilford had in mind in regard to the use of pieced draw-bar springs. We find at page 84, when he is asked what it was he had in mind, Mr. Wilford says, "*Broken springs being put together causing danger to passengers. . . . I was considering the safety of the public in regard to the broken springs.*" Also on page 84 he says, I had in mind that pieced springs were being put *in the cars.*" At page 84 he says, "I believed that broken springs were being used in connection with the running of *carriages*, and that there was a shortage of spares of those broken springs, that that is why they pieced two together, *and that it was dangerous to the travelling public. I still think so.*" At page 84 the question is put to him, "At all events, what you had in mind was springs," and he replied, "Yes, springs." And in reply to the question, "The use of which endangered the safety of the public," he replied, "Yes, patched springs." At page 88 he says, "What he" [his informant] "*told me about the springs and about their being dangerous to the travelling public has been proved by the witnesses whose names I have mentioned in the statement.*" Why, there is not one word in any statement to which he referred about the use of pieced springs on wagons or anything else being dangerous to the travelling public. Quite the contrary. Every one of the witnesses who made a report says with the utmost distinctness that the use of pieced draw-bar springs on the wagons in no way affects the safety of the public. I go further, and I say the evidence shows that even if pieced draw-bar springs were used on carriages the safety of the public would be in no way prejudiced. But they have not been used on cars; they have only been used on wagons. Then Mr. Wilford says again, at page 89, "I think he" [his informant] "*told me the truth that pieces of draw-bar springs were being put together instead of the use of one spring, and that that was a danger to the public.*" Well, is it not too ridiculous to think that Mr. Valentine could possibly have said that the use of pieced draw-bar springs was a danger to the public, that the use of pieced draw-bar springs such as have been used on wagons was a danger to the public? And that is why I say that the probability is that Mr. Wilford may quite unconsciously and quite unintentionally have exaggerated what Mr. Valentine told him into those alarmist statements which he made in the House. Of course, there is this observation to be made: that, even assuming the charitable view which I have said the officers of the Department are quite willing to take, Mr. Wilford has had several opportunities of finding out his mistake. He has made no inquiries of any sort or kind. He has read none of the evidence apparently, as I gathered from what he said in Wellington, that has been given before this Commission, and

although he has had every opportunity of ascertaining the position and of taking the course which in similar circumstances is generally regarded as the correct course between fair-minded and fair-dealing men, he has done absolutely nothing except to come before this Commission and practically repeat the charges that he made in the House, and to attempt to show, contrary to every bit of evidence which has been given, that the charges he made were true.

Now I come—and I propose to deal very shortly with them—to the charges or matters of complaint that have been made before this Commission. They are five. Firstly, a good deal of evidence has been given with regard to the use of pieced springs, and the complaint made by Mr. Wilford, and to some extent by Mr. Veitch (though to a certain extent withdrawn by Mr. Veitch), that the use of pieced springs is detrimental to the vehicle and prejudicial to the public safety. Secondly, there is the charge of neglect in regard to the painting of vehicles. Thirdly, there is the complaint or allegation made by Mr. Veitch of the use of liners in the axle-boxes where a box has canted. Fourthly, there is the complaint made by Mr. Shaw, the Hawera witness, of the increased number of hot axle-boxes; and, fifthly, there is the complaint, which I think also was made by Mr. Shaw, that the extension in the time for lifting certain classes of vehicles from two to three years is unsatisfactory and prejudicial to the condition of the rolling-stock.

What I have to say upon these points is only by way of submission, and as conclusions merely from the evidence that has been given. I do not desire to stress these matters, because apart from the evidence the Commission has had the opportunity and advantage of a thorough personal inspection of the stock from Auckland to Invercargill. I do not know but that it may have been even north and south of those points, but, at all events, a thorough inspection has been made of pretty well the whole of the rolling-stock of the New Zealand railways. It may be, of course, for all I know that the Commission may have found some defects, although I have not heard from the officers of any defects that they themselves have noticed during the time the Commission has been sitting, or during the time that the Commission has been making its investigation and its inspection.

Now, with regard to the use of pieced springs, I have already dealt at some length with that point when I was discussing the charges made in the House. It has been proved that those pieced springs have been used only in wagons. It has been proved that the use of pieced springs is a practice which has been adopted from time to time for many years. One witness who has been thirty-six years in the service says it had been adopted from time to time during the whole period of his service. Mr. Beattie has said that during the whole of his period they were used from time to time, and the whole consensus of opinion, and the whole body of evidence that has been called, goes to show that the use of pieced springs in wagons in no way prejudices or affects the safety of the travelling public, and in no way causes deterioration of any of the vehicles or injures the undergear of the vehicles. Furthermore, it would appear that the use during the last three years, at all events, of pieced springs in wagons has been due to a desire to use economically materials that are really good rather than to any shortage of draw-bar springs. The probability is—indeed, I should say the certainty is—that in some places there may have been a temporary shortage, but there was always a reasonable supply of draw-bar springs at one or more places throughout New Zealand, a supply which could have been drawn upon had there been any real shortage in any other places. It would therefore appear that what some of the officers have said is perfectly correct—viz., that the use of pieced draw-bar springs was due to a desire, and a proper desire, to economize, and to use good material which otherwise would have been wasted and thrown away.

With regard to the use of liners, there has not been very much complaint. I think the only person who made a complaint was Mr. Veitch, and he did not appear to be aware that the use of liners in canted axle-boxes is generally known and a perfectly proper practice, and has been the practice in New Zealand ever since there was a railway. I do not propose to in any way dilate upon the evidence on that point.

As to the alleged increase in the number of hot axle-boxes, the only person who made a complaint was Mr. Shaw, of Hawera; but when his own figures come to be searched it is found there have been fewer hot axle-boxes than previously. I do not suggest that Mr. Shaw was not absolutely honest and making a statement which he thought was absolutely true, but when the records which he himself keeps come to be turned up it is found that, as a matter of fact, his statement was erroneous.

Then there is the question of painting, which I think I omitted to refer to when I was listing the charges or matters of complaint that have been referred to in evidence before the Commission. All the records show, and the evidence shows, that there has been no neglect whatever so far as the painting of vehicles is concerned, but that the painting is kept up as it has always been. There is a difference in the method or in the style, but that was an alteration made by Mr. Beattie in 1910 or 1911 after due deliberation, and apparently the alteration is satisfactory. The new system is apparently, as far as the evidence goes, quite efficient, and it is very much more economical than the painting under the old system.

Then there is the question of lifting wagons every three years. The evidence shows the reason why that was done, and a number of witnesses who have been asked the question say that they see no reason to deprecate the regulation which extends the time. That is an alteration which was made after consultation by the Chief Mechanical Engineer with all his officers who have to deal with the rolling-stock, and it would seem to have been a reasonable alteration, because it must have been impossible to carry out the previous regulation requiring the lifting every two years. When the lifting every two years was required by regulation it was found it could not be done, and that in practice the wagons of the classes to which the alteration applies were lifted only once about three years. That was found to be sufficient, and therefore the alteration in the regulation was made. The alteration, therefore, was not a real alteration—it had not altered the actual practice that subsisted previously.

Those are the various complaints which seem to me to have been made before this Commission by Mr. Wilford, Mr. Veitch, and one of them by Mr. Shaw. But the gravamen of the charges made by Mr. Wilford in the House was, and his evidence before this Commission certainly suggested, that the condition of the rolling-stock generally has been allowed to deteriorate to the point of unsafety. Mr. Wilford emphasized over and over again in giving evidence before the Commission the point that what he had in mind was *that the use of pieced springs prejudiced the safety of the travelling public*. Now I want to conclude by submitting to the Commission that there is not one tittle or vestage of evidence to show that there is any foundation whatever for any such charge. I submit that the whole of the evidence not only negatives the charges, but shows that the rolling-stock is at the present time, as it was some six months ago, in a better condition than ever it was previously. I do not propose to refer to the questions which are set out in the Commission; but it is submitted that the specific questions which are there asked are readily capable of short and decisive answers.

In conclusion, Mr. Chairman and gentlemen of the Commission, may I on behalf of the Department thank the Commission for the patience with which it has heard the evidence of the various witnesses, for the trouble it has taken throughout to arrive at a just answer to all those questions which have been submitted, and also for the very thorough investigation which has been made of the whole of the rolling-stock throughout over the main lines and branches of the railways in the Dominion.

The Chairman: The evidence having now concluded, the Commission has to thank the counsel representing the Railway Department for the prompt manner in which the various returns asked for have been handed in.

EXHIBITS.

EXHIBIT A.

REPAIRING STAFF AT OUT-STATIONS.

Auckland District.

Station.	Name.	Designation.	Particulars of Work performed.	Approximate Hours daily spent on Repairs.
Auckland	Devan, J.	Carpenter	Repairs, cars and wagons	8 $\frac{3}{4}$
"	Jenkins, C.	"	"	8 $\frac{3}{4}$
"	Bindon, J.	Fitter	Overhaul Westinghouse brake	8 $\frac{3}{4}$
"	Hancock, G.	"	"	8 $\frac{3}{4}$
"	Watson, J. T. R.	"	"	8 $\frac{3}{4}$
"	Prescott, T.	Leading lifter	Repairs	8 $\frac{3}{4}$
"	Whitten, H.	Train-examiner	Examining, &c.	Nil.
"	Rankin, A. J.	"	"	Nil.
"	Monaghan, G.	"	"	4 $\frac{3}{4}$
"	Gavin, J. V.	"	"	Nil.
"	Bennett, W.	"	"	Nil.
"	Bright, H. W.	"	"	Nil.
"	Gapes, P. F.	Junior lifter	Assisting overhaul brake	8 $\frac{3}{4}$
"	Halverson, P. H.	Gasman, junior lifter	Gassing cars and vans	Nil.
"	Mills, T. L.	Lifter	Repairs	8 $\frac{3}{4}$
"	Morey, W. T.	"	"	8 $\frac{3}{4}$
"	Parkes, F.	"	"	8 $\frac{3}{4}$
"	Roe, J. H.	Junior lifter	"	8 $\frac{3}{4}$
"	Patterson, C. S.	"	Assisting overhaul Westinghouse brake	8 $\frac{3}{4}$
"	Fuller, J.	Labourer	Oiling	Nil.
"	Akers, R. W.	Skilled labourer	"	Nil.
"	Crawford, E. J.	"	Storeman	Nil.
Helensville	Hogan, J. J.	Train-examiner	Examining, &c.	4
Mercer	Crowhurst, J. H.	"	"	3
"	Garlick, R. G.	Pumper, &c...	Pumping, examining, and repairs	1
Huntly	McIntyre, A. H.	Train-examiner	Examining, &c.	2 $\frac{1}{2}$
"	Hodgson, B.	Pumper, &c...	Pumping, examining, and repairs	3
Frankton	Miller, P. H.	Carpenter	Repairs, cars and wagons	8 $\frac{3}{4}$
"	Eaddy, C. F.	Gasfitter	Overhaul brake	8 $\frac{3}{4}$
"	Pepperell, F. E.	Leading lifter	Examining, &c.	1
"	Brown, N.	Train-examiner	"	Nil.
"	Tute, W.	"	"	Nil.
"	Douglas, A.	"	"	Nil.
"	Williams, T. L.	Lifter	Repairs, &c.	8 $\frac{3}{4}$
"	Hendry, W.	"	Examining and repairs	5 $\frac{3}{4}$
"	Barnes, R.	Junior labourer	Assisting overhaul brake	8 $\frac{3}{4}$
Te Kuiti	Henderson, J. C.	Train-examiner	Examining, &c.	2
Morrinsville	Dick, C. J.	"	"	2
"	Miller, H. J.	Gasman, junior lifter	Pumping, examining, and repairs	2
Paeroa	Johnson, G.	Train-examiner	Examining, &c.	4
Rotorua	Sheffield, W. H.	"	"	2 $\frac{1}{2}$

EXHIBIT B.

CIRCULAR INSTRUCTION issued by LOCOMOTIVE ENGINEER, Petone, *re* use of Pieced Draw-bar Springs.
(See page 155.)

New Zealand Railways, Locomotive Engineer's Office, Petone, 10th June, 1914.

(3 workshops, 2 Car and Wagon Inspectors.)

Draw-bar Springs.

THE practice of throwing draw-bar springs on the scrap-heap when one or two coils are broken off is to be stopped, as it is quite unnecessary to do this on any vehicle *except cars*.

In future when draw-bar springs are found with one, two, or three coils broken the space is to be made up by using suitable pieces of springs. When springs are being put together care must be taken to see that they fit flat into one another and make up the required length. If this is attended to properly a large sum of money will be saved each year.

Please see that your train-examiners and lifters receive proper instruction in this matter.

G. E. RICHARDSON,
Locomotive Engineer.

EXHIBIT C.

CIRCULAR INSTRUCTION issued by CAR AND WAGON INSPECTOR, Wanganui, *re* use of Pieced Draw-bar Springs. (See page 56.)

Car and Wagon Inspector's Office, Wanganui, 16th June, 1914.

Train-examiners and lifters.

Draw-bar Springs.

THE practice of throwing draw-bar springs on the scrap-heap when one or two coils are broken off is to be stopped, as it is quite unnecessary to do this on any vehicle *except cars*.

In future when draw-bar springs are found with one, two, or three coils broken the space is to be made up by using suitable pieces of springs. When pieces of springs are being put together care must be taken to see that they fit flat into one another and make up the required length. If this is attended to properly a large sum of money will be saved each year.

J. VALENTINE,
Car and Wagon Inspector.

EXHIBIT D.

REPAIRING STAFF AT OUT-STATIONS.

Wellington - Taumarunui - Napier - New Plymouth District.

Station.	Name.	Designation.	Particulars of Work performed.	Approximate Hours daily spent on Repairs.
Wellington	Silverwood, A. C.	Leading fitter	Electric cars and lights	8
"	Wincott, H. P.	Casual fitter	Westinghouse-brake repairs	8
"	Burridge, C. H.	Train-examiner	Train-examining and repairs	4
"	Brace, J. E.	"	"	4
"	Currie, J.	"	Westinghouse-brake repairs	8
"	Haggerty, G.	"	Train-examining and repairs	4
"	Hooker, L. N.	"	Car and brake-van repairs	8
"	Hobbs, J. G.	"	Train-examining and repairs	4
"	Hunter, W. C.	"	Car and wagon repairs	8
"	Jones, G. E.	"	Car and wagon repairs, retaring and stores	3
"	Leary, J. C.	"	Train-examining and repairs	4
"	Miller, T. R. J.	"	"	3
"	Beardsmore, J. E.	Casual train-examiner	Gas and oil cars	..
"	Perkinson, G. H.	"	Car and wagon repairs and assists in gashouse	4
"	Seaton, W.	Leading lifter	Car and wagon repairs	8
"	Flaws, J.	Casual lifter	Car and brake-van repairs	8
"	Johnson, E. G.	Casual junior lifter	Car and wagon repairs	8
"	Mason, J. D.	Casual lifter	"	8
"	Harley, H. T.	Casual labourer	Gas and oil cars	..
"	Harley, J. A.	Carpenter	Car repairs	8
"	McPhee, D. A.	"	"	8
"	O'Loughlin, G.	"	"	8
Paekakariki	Hall, E. W.	Train-examiner	Train-examining and repairs	4
Cross Creek	Creelman, E. S.	"	"	4
"	Souter, W. A.	"	"	4
Woodville	*Prendergast, M.	"	"	8
"	*Smith, E. W.	"	"	2
"	*Smith, W. A.	"	"	2
Waipukurau	Ireland, H. D.	"	"	3
"	Ousey, E. H.	"	"	3
Napier	*Earney, A. J.	"	"	4
"	*McBryde, J.	"	"	4
Palmerston North	Rose, G.	Fitter	Westinghouse-brake repairs	8
"	†Dyer, W.	Train-examiner	Train-examining and repairs	†
"	†O'Donnell, W.	"	"	†
"	†Papprill, F. H.	"	"	†
"	†Power, J. J.	"	"	†
"	Sharman, H.	"	"	3
"	†Smith, J. A.	"	"	†
"	Seeling, A. T.	Casual lifter	Car and wagon repairs	8
"	Hagan, H.	Carpenter	"	8
Taihape	Watson, W. G.	Train-examiner	Train-examining and repairs	3
"	Ronayne, F. H.	"	"	1
Ohakune	Adams, H. N.	"	"	5
Taumarunui	*Callagher, T. H.	"	"	2
"	*Huxtable, A. J.	"	"	4
"	Shailer, N. G.	Fitter	Westinghouse-brake repairs	4
Marton	*Morrow, W. S.	Train-examiner	Train-examining and repairs	6
"	*Anderson, A. E.	Lifter	"	2
Wanganui	Landells, W. T.	Fitter	Westinghouse-brake repairs	8
"	Allan, E. A.	Carpenter	Car and wagon repairs	8
"	*Piper, W. J.	Train-examiner	Train-examining and repairs	6
"	*Humphrey, J. H.	"	"	4
"	*James, E. N.	Lifter	"	2
Hawera	*Shaw, W. R.	Train-examiner	"	5
"	*Seaton, H. J.	"	"	3
Stratford	*Campbell, H.	"	"	4
New Plymouth	Loft, S.	Casual fitter	Westinghouse-brake repairs	8
"	*Gore, A. G.	Train-examiner	Train-examining and repairs	5
"	*Rogers, F. J.	"	"	3

* These members also gas cars from travelling storeholders when necessary.

† These members take alternative weeks on shifts—four shifts of eight hours per day for examining trains, one shift of two hours per day examining trains, and six hours on repair-siding.

Lifter J. C. Shepherd is at present under orders to transfer from East Town to fill vacancy at Marton as train-examiner.

EXHIBIT E.

MEMORANDUM, GENERAL MANAGER, RAILWAYS, to CHIEF MECHANICAL ENGINEER. (See page 101.)

New Zealand Railways, Head Office, Wellington, 17th July, 1916.

No. 16177.—Memorandum.—Urgent.

Chief Mechanical Engineer.

Condition of Rolling-stock.

It is asserted that the underframes and running-gear of carriages in use on the railways in both North and South Islands have not been kept up to the usual standard of efficiency during the past two or three years; that in consequence of this a number of carriages and other bogie stock in daily use on the lines are in a condition which affects the safety of the travelling public; that the unsafe condition of the rolling-stock is known to responsible officers of the Department; and that information bearing on the subject could be obtained from Mr. Richardson, Locomotive Engineer at Addington, and from the Inspectors in the South Island, also from the Inspector of Rolling-stock in the Wellington District, the Workshop Manager at East Town, and the Inspector and Foreman at Newmarket.

It is essential that the reports of the officers concerned be obtained without delay, and that they should deal definitely with the matter at issue. Please communicate with them accordingly urgently, and ask for immediate reply.

E. H. HILEY,
General Manager.

EXHIBIT F.

MEMORANDUM, CHIEF MECHANICAL ENGINEER to LOCOMOTIVE ENGINEERS. (See page 101.)

New Zealand Government Railways, Chief Mechanical Engineer's Office,
Wellington, 18th July, 1916.

No. 300/843.—Personal.

Loco. Engineer, Railways, Petone; Loco. Engineer, Newmarket; Loco. Engineer, Addington.

Condition of Rolling-stock.

PLEASE peruse attached copy of memo. from General Manager, and let me have as quickly as possible full reports from yourself and the other officers referred to, so far as your section is concerned.

It has been stated in Parliament that repairs to rolling-stock have not been kept up during recent years, and that there is a shortage of spares.

Your report should state definitely whether there are any grounds for such statement as far as your district is concerned; also whether the instructions *re* upkeep of condition of rolling-stock affecting safety have been in any way amended or relaxed during the last three years, and, if so, enclose copies of any such instruction.

Please treat this as a very urgent matter, and let me have your reports as quickly as possible. The Car and Wagon Inspectors must definitely state whether they have allowed vehicles to remain in service in an unsafe condition, and whether they have been in any way debarred from sending cars and wagons to shops for repairs when necessary. These officers are responsible for the safe running of rolling-stock (see Loco. Instruction No. 328), and they must state definitely if they have allowed stock to remain in service in an unsafe condition. Workshop Managers must say whether in their opinion there has been any alteration in the design of rolling-stock to in any way interfere with its safety.

Do not write to the officers mentioned, but take statements from them in your office, which they must sign.

H. H. JACKSON,
Chief Mechanical Engineer.

EXHIBIT G.

TELEGRAM, MINISTER OF RAILWAYS to Mr. T. M. WILFORD, M.P. (Handed in by Mr. T. M. Wilford. See page 80.)

Wellington, 3rd February, 1917 (1.40 p.m.).

T. M. Wilford, Esq., M.P., Masonic Hotel, Napier.

I FIND that letter posted to your office Thursday informing you of appointment Commission inquire into condition rolling-stock, containing also copy order of reference and intimation that Commission would open at Auckland, fifth instant, has not been forwarded on from your office. Am therefore telegraphing you the information regarding sitting Commission to enable you to be present at opening at Auckland if you so desire.

W. H. HERRIES.

EXHIBIT H.

MEMORANDUM, MINISTER OF RAILWAYS to Mr. T. M. WILFORD, M.P. (See page 83.)

New Zealand Government Railways, Head Office, Wellington, 1st February, 1917.

SIR,—

I have the honour to inform you that a Commission has been appointed to inquire into the allegations made concerning the upkeep of the railway rolling-stock during the period from August, 1913, to 7th July, 1916. The Commission will open proceedings at Auckland on Monday, 5th instant. I forward herewith, for your information, a copy of the order of reference.

The Commission having been appointed at the instance of the Railway Department to investigate the allegations made by you during last session of Parliament, I have to request that you will, as you then intimated you were prepared to do, bring before the Commission the evidence from which you made the allegations referred to in the order of reference.

I have, &c.,

W. H. HERRIES,
Minister of Railways.

T. M. Wilford, Esq., M.P., Wellington.

EXHIBIT I.

MEMORANDUM from WORKSHOPS MANAGER, East Town. (See page 62.)

New Zealand Railways, Locomotive Department,
East Town Workshops, 12th February, 1917.

Memorandum for Loco. Engineer, Wanganui.

As requested, I have looked through all my files, and cannot find any trace of any letter received from your office *re* speeding up.W. KYDD,
Workshop Manager.

EXHIBIT J.

(Handed in by Mr. T. M. Wilford, M.P. See page 82.)

[Extract from the *New Zealand Railway Review* (official organ of Amalgamated Society of Railway Servants) of 7th May, 1915.]

MONDAY, 8TH MARCH.

Taumarunui.—Building up broken draw-gear springs with broken pieces. (Inward received and outward approved. Represent to Minister by deputation.)

EXHIBIT K.

(Handed in by Mr. T. M. Wilford, M.P. See page 82.)

[Extract from the *New Zealand Railway Review* (official organ of Amalgamated Society of Railway Servants) of 27th August, 1915.]

WEDNESDAY, 14TH JULY.

Council met at 9 a.m., Mr. Hampton presiding. Roll called, all of the Council being present.

Council adjourned at 9.50 to meet the General Manager, which interview concluded at 2 p.m.

EXHIBIT L.

CORRESPONDENCE, ETC., between RAILWAY DEPARTMENT and AMALGAMATED SOCIETY OF RAILWAY SERVANTS *re* use of Pieced Springs. (See page 96.)

DRAW-GEAR SPRINGS.

[Extract from Report on Deputation from the Executive of the Amalgamated Society of Railway Servants to the General Manager of Railways on 14th July, 1915.]

Mr. WHISKER: *Defective draw-gear springs being placed in vehicles*.—I would like to hand in a copy of an instruction issued by the Car and Wagon Inspector, Wanganui, in regard to draw-gear springs. I think a man who issues a circular like that should consult a specialist. You know as well as I do that a spring is designed to absorb jolt. How does Mr. Valentine think the jarring will be overcome by using springs in the manner he directs? It is most dangerous. Where his thoughts of the travelling public come in we don't know. He must have forgotten them. He is careful enough to say that it does not apply to cars.

Mr. McVILLY: I don't know anything about this.

Mr. WHISKER: In process of time all vehicles on the trains would be in the same condition. Picture a passenger-car on a train behind fifty or sixty wagons with springs made up like that. In the meantime our men are getting into trouble for draw-gear failures.

Mr. McVILLY: I think you can take it that it will be put right.

Chief Mechanical Engineer.—For your remarks, please.—E. H. Hiley, General Manager, per W.R.—5/8/1915.

New Zealand Government Railways,
Chief Mechanical Engineer's Office, Wellington, 21st August, 1915.

The General Manager, N.Z.R.

DRAW-GEAR.

Your minute of 5th instant.

The instruction to use portion of broken draw-bar springs was issued by Mr. Richardson when there was a shortage of this material. I do not admit that Driver Whisker is an authority on such matters, and see no reason to cancel the instruction issued by Mr. Richardson.

I am not aware that any drivers are getting into trouble for draw-gear failures, and cannot remember any such cases during the two years that I have been Chief Mechanical Engineer. I think Driver Whisker can safely leave such matters to the officers of the Department.

H. H. JACKSON,
Chief Mechanical Engineer.

SIR,—

New Zealand Railways, Head Office, 14th September, 1915.

With reference to the representations made by your executive at the interview on 14th July last in regard to the alleged use of defective draw-gear springs, I have to inform you that the instruction to which you referred was issued by direction of the Locomotive Engineer, and as the Chief Mechanical Engineer concurs with it I can see no valid reason why it should be withdrawn.

I desire also to state that the strictures made on the Car and Wagon Inspector by your executive were unwarranted, and should not have been made.

I remain, &c.,

E. H. HILEY,

General Manager.

The General Secretary, Amalgamated Society of Railway Servants,
Post-office Box No. 858, G.P.O., Wellington.

EXHIBIT L—*continued*.[Extract from *Hansard* of 6th October, 1915.]

13A. Mr. VITCH (Wanganui) asked the Minister of Railways, Whether an instruction has been issued in his Department directing that when broken draw-gear springs are discovered in vehicles other than passenger-cars they are to be replaced with parts of broken springs; and, if so, does he consider that this is in the interest of the public safety?

The Hon. Mr. HERRIES (Minister of Railways) replied, An instruction was issued on lines indicated applicable to draw-bar springs of wagons, and only in cases where the standard strength could be reinstated by the utilization of a portion of a spring properly fitted to the draw-bar. The matter has been looked into carefully by responsible officers, and the Chief Mechanical Engineer, who is in charge of the rolling-stock, considers the safety is in no way impaired.

EXHIBIT M.

STATEMENT SHOWING STAFF AT TRAIN-EXAMINING STATIONS.

South Island Main Line and Branches, Picton, Nelson, Westport, Westland, and Gisborne Sections.

Station.	Name.	Designation.	Particulars of Work performed.	Approximate Hours daily spent on Repairs.
Christchurch District.				
Christchurch	Timbs, J.	Leading lifter	General supervising and repairs	8
"	Jones, J. H.	Lifter	Train-examining and light repairs	8
"	McQuinn, W.	"	"	8
"	Emms, R. H.	Train-examiner	"	8
"	Ramsay, T.	Lifter	"	8
"	Patterson, A.	Train-examiner	Repairs	6
"	Robb, J. G.	Lifter	Repairs and oiling cars	8
"	Shaw, L. E.	Fitter	Repairs	8
"	Wilson, W. J.	Carpenter	"	8
Lyttelton	Di Rago, A.	Train-examiner	Repairs and train-examining	8
Ashburton	Rix, A. G.	"	"	6
"	Machin, J. W.	"	"	6
Timaru	Archer, H.	"	"	8
"	McFedries, J. H.	"	"	8
"	Taylor, E. E.	Lifter	Repairs	8
"	Wood, L.	Fitter	Repairs to Westinghouse brake	8
Rangiora	Everett, W. H.	Train-examiner	Repairs and train-examining	6
Culverden	Griffiths, J. B. R.	Chauffeur	These men take week about on car and wagon duties, repairs and train-examining	6
"	Davis, J.	"		
Dunedin District.				
Palmerston	Early, W.	Lifter	Train-examining, urgent light repairs	2
"	Barr, R.	Coalman and acting train-examiner	"	2
Mosgiel	Churchill, T.	Train-examiner	"	4
Balclutha	McLaren, C.	"	"	6
"	Deaker, R. W.	Coalman and acting train-examiner	Train-examining, coating	2
Ranfurly	Larson, I.	Ditto	Train-examining and urgent light repairs to rolling-stock, coating, pumping, discharging coal	4
Clyde	O'Connor J. F.	"	Train-examining and urgent light repairs to rolling-stock	4
Clinton	Evans, W.	Train-examiner	Ditto	5
Kaitangata	Bisset, A.	"	"	3
Oamaru	Cox, H. T.	Lifter	Repairs to rolling-stock, lifting and oiling	8
"	Forsyth, R.	"	Ditto	8
"	Muirhead, A. J.	"	Train-examining, repairs to rolling-stock	8
"	Nightingale C.	Train-examiner	Ditto	8
"	Saunders, J.	Fitter	Cleaning and overhauling Westinghouse brake, and any repairs to Westinghouse brake gear	8
"	Searle, D. M.	Casual rivet-boy	Assists overhaul Westinghouse brake	8
Milton	Sayer, E. A.	Train-examiner	Train-examining, renewing brake-blocks, and adjusting Westinghouse brake	6
Dunedin	McKenzie, C.	Carpenter	Repairs to all rolling-stock	8
"	Dobbie, J.	Leading lifter	Train-examining, brake-testing, and steam heat, repairs to rolling-stock	8½
"	Fitzpatrick J.	Train-examiner	Train-examining, renewing brake-blocks, and adjusting Westinghouse brake	8
"	George, J.	Lifter	Ditto	8
"	Smith, S. R.	"	"	8
"	Burgess, F.	"	"	8
"	Clark, J. W.	Leading lifter	Repairs and lifting to all rolling-stock as required	8½
"	Brown, A. C.	Lifter	Repairs and lifting to all rolling-stock, and train-examining	8½
"	Gibb, A.	"	Repairs and lifting to all rolling-stock as required	8½
"	Thomson, J.	Train-examiner	Lifting and repairs to rolling-stock as required, train-examining	8½
"	Ridland, A. F.	Gasfitter	Cleaning and overhauling Westinghouse brake, and any repairs to Westinghouse brake	8

EXHIBIT M—continued.

STATEMENT SHOWING STAFF AT TRAIN-EXAMINING STATIONS—continued.

South Island Main Line and Branches, &c.—continued.

Station.	Name.	Designation.	Particulars of Work performed.	Approximate Hours Daily spent on Repairs.
<i>Invercargill District.</i>				
Invercargill ..	Toner, E. S. ..	Leading train-examiner	Supervision of train-examining staff work	8
" ..	Maddox, R. E. ..	Train-examiner ..	Train-examining	8
" ..	Hamilton, H. ..	" ..	"	8
" ..	Feil, M. B. ..	Lifter	General repairs to stock	8
" ..	Taylor, C. H. ..	"	"	8
" ..	Christie, N. C. ..	Fitter	General repairs to Westinghouse brake and car fittings	8
" ..	Brass, P. ..	Carpenter	General repairs to stock	8
Bluff ..	Welch, A. ..	Train-examiner ..	Train-examining, light repairs to stock	7
Gore ..	McKitterick, E. ..	Train-examiner in charge of oil-engine	Train-examining, oiling stock, and small repairs	8
" ..	Whitty, W. ..	Coalman and acting train-examiner	Train-examining, coaling engines, and pumping water	2

REPAIRING STAFF ON PICTON, NELSON, AND GISBORNE SECTIONS.

Station.	Name.	Designation.	Particulars of Work performed.	Approximate Hours Daily spent on Repairs.
Picton ..	Wheatley, R. W. ..	Lifter	Train-examining and repairs ..	6
Nelson ..	Stewart, W. ..	"	"	6½
Gisborne ..	Crerar, J. ..	"	"	6½

WESTLAND SECTION.—REPAIRING STAFF, OUT-STATIONS.

Station.	Name.	Designation.	Particulars of Work performed.	Approximate Hours Daily spent on Repairs.
Greymouth ..	West, A. W. ..	Train-examiner ..	Examining trains and minor repairs, such as taking up brakes, &c.	1 to 2
" ..	East, L. ..	"	Ditto	1 to 2
" ..	Thomas, J. ..	"	Attending to gas-lighting, charging generators, and keeping acetylene-lighting system in good working-order	..

There is no out-station examining or repairing staff on the Westland Section.

The three members of the staff at Greymouth split up the shifts between them—one man attending the gasworks, 8 a.m. to 5 p.m. shift, while the other two take the early and late shifts.

All vehicles stopped for repairs are shunted in shops-yards twice daily, and are attended to by shops staff.

WESTPORT SECTION.—REPAIRING STAFF, OUT-STATIONS.

Station.	Name.	Designation.	Particulars of Work performed.	Approximate Hours Daily spent on Repairs.
Westport ..	Hughes J. ..	Train-examiner ..	Examining trains and minor repairs, such as taking up brakes, &c.	1 to 2
" ..	Terry, F. J. ..	"	Ditto	1 to 2
Conn's Creek ..	Doyle, J. ...	"	Examines all wagons going up and down Denniston Incline	1 (about)

The train-examiners at Westport, in addition to examining trains, attend to the acetylene lighting of cars.

The two members at Westport work the early and late shifts in turn.

All vehicles stopped for repairs are attended to by shops staff.

EXHIBIT N.

CIRCULAR INSTRUCTION issued by LOCOMOTIVE ENGINEER, Addington. (See page 127.)

New Zealand Railways, Locomotive Engineer's Office,
Car and Wagon Inspector, Dunedin. Addington, 5th December, 1916.

Repairs to Rolling-stock.

THE workshops are being overcrowded with repairs, and in some cases vehicles have been sent to workshops which could easily have run for months, the repairs required being very slight and not affecting the safe condition of the vehicles in any way.

Car and Wagon Inspectors will please endeavour to regulate the supply of vehicles to workshops, and send only those vehicles that require repairs to keep them in safe condition to run.

The running-gear and Westinghouse brake must be kept in first-class order.

G. E. RICHARDSON,
Locomotive Engineer,

EXHIBIT O.

CIRCULAR INSTRUCTION issued by LOCOMOTIVE ENGINEER, Addington. (See page 156.)

New Zealand Railways, Locomotive Engineer's Office,
Car and Wagon Inspector, Christchurch. Addington, 19th September, 1916.

Broken Draw-bar Springs.

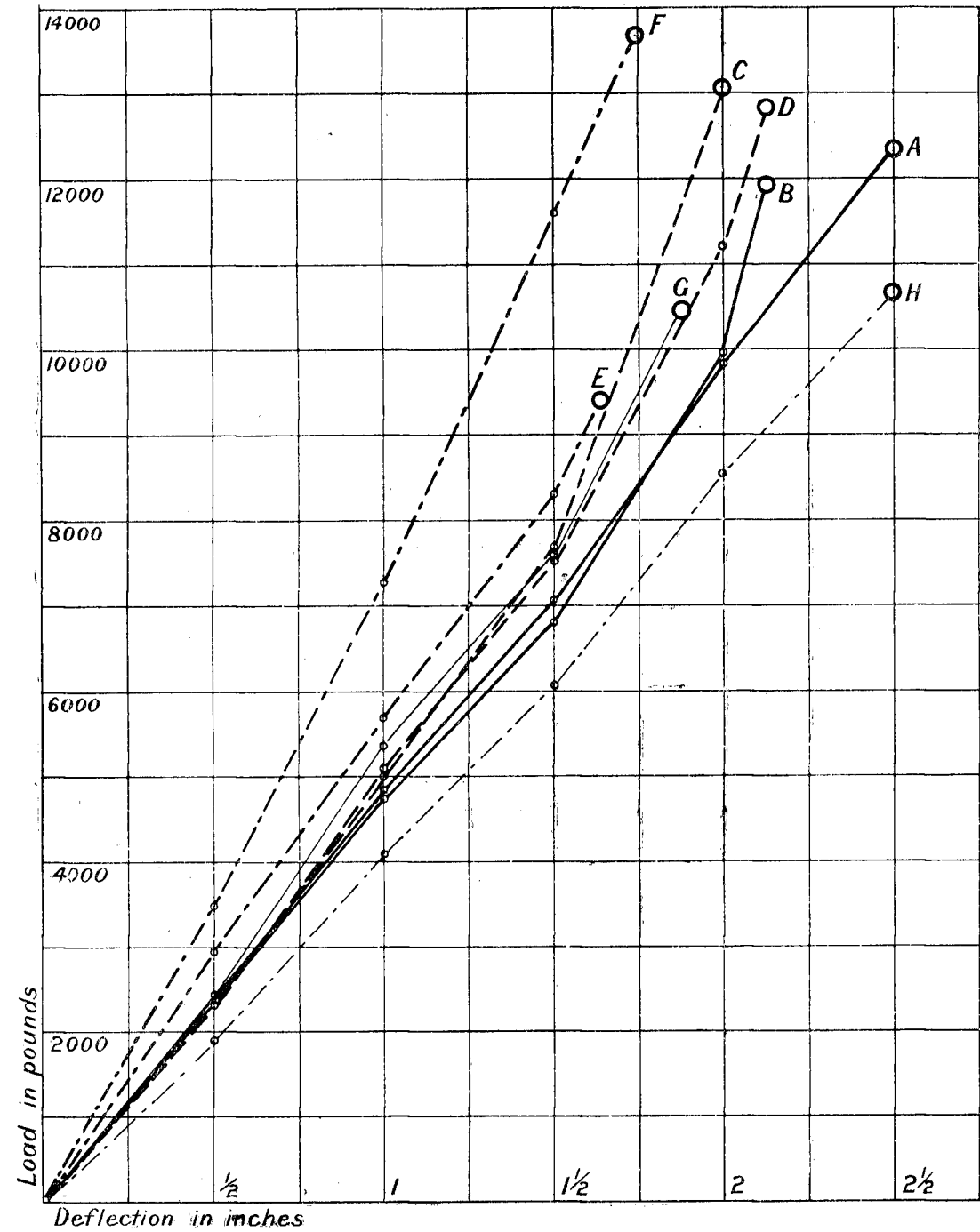
WHEN replacing broken draw-bar springs in *wagon stock* please arrange to make up the space with pieces of springs, but not more than two pieces should be used together, and care must be taken to see that they fit together. With this arrangement a considerable saving of springs will be effected, and the safety of the wagon will not be impaired.

G. E. RICHARDSON,
Locomotive Engineer.

EXHIBIT P.

TESTS OF COIL SPRINGS.

(Conducted by Railway Department. See page 163.)



NOTE.—Points marked thus O show spring pressed solid.

- A (B.P. 4310) is an old standard draw-bar spring, 1½ in. by ¾ in. steel, rectangular section (new).
B (B.P. 4310) is a similar spring after being in service some months.
C (B.P. 4310) is a similar spring broken in use (break near middle).
D (B.P. 4310) is a similar spring broken in use (break near end).
E ("A" on B.P. Y 6302) is a single coil round-section spring, lately imported for experimental purposes.
F ("C" on B.P. Y 6302) is a double-coil round-section spring, lately adopted as the standard draw-bar spring for heavy wagons and carriages.
G (B.P. R. 119—Manawatu Railway Company's standard draw-bar spring) is a round-section double-coil spring.
H (B.P. 4414) is the standard bearing-spring as now used, rectangular section.

EXHIBIT Q.

TELEGRAMS, Mr. T. M. WILFORD, M.P., to Mrs. J. VALENTINE. (Handed in by Mr. J. Valentine. See pages 172-173.)

Wellington, 6th February, 1917 (9.30 a.m.).

Mrs. J. Valentine, Hutt Road, Petone.
COULD you wire me Jack's address to-day please.

THOMAS WILFORD.

Wellington, 6th February, 1917 (11.25 a.m.).

Mrs. J. Valentine, Railways, Wanganui.
COULD you wire me Jack's address to-day please.

THOMAS WILFORD.

(NOTE.—For reply to above telegrams, see Mr. J. Valentine's evidence, page 173, question 60.)

THE FOLLOWING EXHIBITS WERE PRODUCED BEFORE THE COMMISSION, BUT HAVE NOT BEEN PRINTED.

DRAWINGS of—

AXLE-BOXES.

B.P. 53.	Four-wheeled stock	...	...	...	...	1887
B.P. 509.	Car	...	...	...	...	1887
B.P. 1291.	Four-wheeled stock, type A	...	...	...	...	1891
B.P. 1293.	Car, type A	...	...	...	...	1891
B.P. 1985.	Car, type C	...	...	...	...	1899
B.P. 2757.	Four-wheeled stock, type D	...	...	...	...	1900 (small doors) 1901 (big doors)
B.P. 3155.	Four-wheeled stock, type E	...	...	...	...	1902
B.P. 3165.	J Wagons, type E	...	...	...	...	1907
B.P. 3173.	Car, type E	...	...	...	...	1902
B.P. 3176.	37½ ft. bogie wagons, type E	...	...	...	...	1902
B.P. 3268.	30 ft. bogie wagon, type E	...	...	...	...	1903
B.P. 4317.	Four-wheeled bogie stock with wooden sole-bars, type E	...	...	...	...	1907
B.P. 4395.	50 ft. car, type E	...	...	...	...	1908

BEARING-SPRING ARRANGEMENT FOR FOUR-WHEELED STOCK.

- B.P. 3154. With iron sole-bars.
- B.P. 4318. With wooden sole-bars.

DRAW-GEAR AS IN USE AT PRESENT.

- B.P. 5786. Four-wheeled stock.
- B.P. 3922. Bogie wagon.
- B.P. 4273. Cars.
- B.P. 1391. Hopper wagons.

DRAW-GEAR IN USE ON THE NEW ZEALAND GOVERNMENT RAILWAYS.

1. Continuous draw-gear on cars shown on B.P. 4273.
2. Continuous draw-gear on bogie wagons shown on B.P. 3922.
3. Continuous draw-gear on four-wheeled wagons shown on B.P. 1732.
4. Non-continuous draw-gear on West Coast coal-hoppers (Q) shown on B.P. 3148.
5. Detail of draw-bar, bridle, pin, &c., as used on above stock till 1916, shown on B.P. 2645.
6. Detail of draw-bar, &c., made standard in 1916, shown on B.P. Y 6040.
7. Detail of draw-rods used in bogie wagons and cars shown on B.P. 495.
8. Continuous draw-gear fitted to four-wheeled wagons by Manawatu Railway Company, shown on company's print R. 181.
9. Detail of draft timbers and draw-gear used by Manawatu Railway Company, shown on company's print R. 49.
10. Detail of draw-bar, bridle, pin, &c., used by Manawatu Railway Company, shown on company's print R. 186.
11. Detail of draw-hook, N.Z.R. standard, shown on B.P. 2575.

DRAW-BAR SPRINGS IN USE ON NEW ZEALAND GOVERNMENT RAILWAYS.

1. Timmis patent section imported before 1890, shown on print signed 21st May, 1887.
2. Later type of Timmis patent section imported between 1890 and 1900, shown on B.P. 1288.
3. Buffer-springs imported between 1900 and 1907, shown on A. on B.P. 2784.
4. Buffer-springs imported between 1907 and 1916, shown on B.P. 4310.
5. Double-coil buffer-springs ordered in October, 1915, and made standard in August, 1916, shown on B.P. Z. 6540.
6. Double-coil buffer-springs fitted to their stock by the Manawatu Railway Company before taken over by the Government, shown on company's print R. 89.

RETURNS.

RETURN No. 1.

LIST OF CARS, BRAKE-VANS, AND WAGONS, YEARS ENDING 31ST MARCH, 1911, TO 31ST MARCH, 1916, INCLUSIVE.

(Prepared in Chief Mechanical Engineer's Office.)

Year ending 31st March,	North Island Main Line and Branches.			South Island Main Line and Branches.		
	Cars.	Brake-vans.	Wagons.	Cars.	Brake-vans.	Wagons.
1911	567	177	7,337	502	149	7,978
1912	602	183	7,579	508	149	8,092
1913	656	185	8,051	524	150	8,507
1914	716	200	8,278	539	154	8,911
1915	729	202	8,901	558	154	9,194
1916	756	222	9,456	582	164	9,338

RETURN No. 2.

BROKEN AXLES UNDER CARS AND WAGONS FOR YEARS 1907 TO 1916, INCLUSIVE.

(Prepared in Chief Mechanical Engineer's Office.)

Date.	Station.	Vehicle.		Description of Axle, and Date.	Brand of Axle.	Remarks.
		Class.	No.			
22/5/07	Dromore, S.I.M.L. & B. ..	M	950	Iron, 1873	S.W. & A. Co. (Ltd.)	Derailed. Close to boss.
12/9/07	Porootarao, Auckland ..	L	4170	Iron, 1897	Best faggoted ..	..
23/12/07	Ohaupo, Auckland ..	L	5061	Iron ..	..	Derailed. Old flaw.
28/5/08	Mill Road, S.I.M.L. & B. ..	L	73	Iron ..	T.M. & Co. ..	Just inside boss of wheel.
7/10/08	Clarksville, S.I.M.L. & B. ..	L	956	Iron, 1884	Addington ..	Not derailed. Old flaw.
26/9/08	Benhar, S.I.M.L. & B. ..	L	1616	Iron, 1882	S.W. & A. Co. (Ltd.)	Derailed. Inside boss of wheel.
17/5/09	Te Pahi, Auckland ..	Mb	1185	Iron, 1893	Addington ..	Derailed (work train). Inside boss of wheel.
23/9/09	Dunedin, S.I.M.L. & B. ..	M	747	Iron, 1894	Addington ..	Derailed. Inside boss of wheel.
22/12/09	Frankton, Auckland ..	J	547	Steel, 1896	Peach and Tozer ..	Not derailed. Old flaw. 1½ in from journal.
24/3/10	Westport	Q	211	Iron, 1894	..	Not derailed. Alongside boss.
16/2/11	Bushey, S.I.M.L. & B. ..	L	2351	Iron, 1885	Addington ..	Derailed. Old flaw.
28/3/11	Cricklewood, S.I.M.L. & B. ..	M	68	Iron, 1894	Addington ..	Not derailed. Fracture at centre.
8/7/11	Waitati, S.I.M.L. & B. ..	L	4091	Iron, 1873	S.W. & A. Co. (Ltd.)	Derailed. Old flaw.
17/7/11	Herbert, S.I.M.L. & B. ..	M	747	Iron, 1892	Addington Scrap ..	Derailed (work-train). Inside boss of wheel.
9/8/11	Crichton, S.I.M.L. & B. ..	L	1912	Iron ..	Patent Shaft and Axletree Co.	Derailed. Old flaw.
9/5/11	Helensville, N.I.M.L. & B. ..	Mb	1172	Steel, 1893	Addington Steel ..	Derailed (work - train). Broken in boss.
19/8/11	Waipara, S.I.M.L. & B. ..	M	591	Iron, 1893	Addington ..	Derailed (work - train). Old flaw.
10/10/11	Green Island, S.I.M.L. & B. ..	Mb	1316	Iron, 1885	Addington Scrap ..	Derailed in ballast siding. Old flaw.
24/4/12	W.N.N.P.	L	5870	Steel ..	P. 2661 .. ..	..
24/5/12	Wairuna, S.I.M.L. & B. ..	L	766	Iron ..	Armstrong, Rotherham	Derailed. Bad quality of iron.
21/9/12	Waitotara, W.N.N.P. ..	L	5928	Steel, 1902	Vickers	Derailed. In boss of wheel.
25/2/13	Lovell's Flat, S.I.M.L. & B. ..	Mb	1213	Iron ..	P.T.M. & Co. ...	Derailed (work-train). Old flaw.
25/2/13	Crichton, S.I.M.L. & B. ..	Mb	1286	Iron, 1885	Addington ..	Derailed (work-train). Old flaw.
Year ending 31/3/1914, nil.						
2/7/14	Masterton, W.N.N.P. ..	L	3229	Steel, 1902	Steel Co., Scotland	Broken $\frac{3}{16}$ in. inside boss of wheel, old flaw. Not derailed.
4/1/15	Petone, W.N.N.P. ..	L	8466	Iron ..	Worily, W.M. Rly.	Old fracture. Broken $\frac{1}{16}$ in. inside boss. Derailed.
24/4/15	Kurow, S.I.M.L. & B. ..	La	6736	Steel, 1901	Patent Shaft and Axletree Co.	Old flaw, $\frac{3}{16}$ in. inside boss. Derailed.
31/7/15	Goodwood, S.I.M.L. & B. ..	La	6363	Steel, 1901	Patent Shaft and Axletree Co.	Old flaw at boss. Derailed.
31/3/16	Parnell, Auckland ..	L	8413	Steel, 1900	Cambria (American)	Old flaw. Imported with American cars. Broken inside boss. Derailed.

RETURN No. 3.

BROKEN TIRES UNDER CARS AND WAGONS FOR YEARS 1907 TO 1916.

(Prepared in Chief Mechanical Engineer's Office.)

Date.	Station.	Vehicle.		Description of Tire, and Date.	Brand of Tire.	Thickness of tread.	If Vehicle derailed.	Remarks.
		Class.	No.					
18/4/07	Lumsden, S.I.M.L. & B.	J	311	Steel, Bes-semer	A.F.N. Avon ..	1 $\frac{1}{4}$ in.	No	Fractured 1 in. from centre of rivet.
3/7/07	Dunedin, S.I.M.L. & B.	M	138	Steel ..	Brown, Bayley, and Dixon	1 $\frac{1}{4}$	No	Fractured through rivet-hole.
24/8/08	Parawa, S.I.M.L. & B.	Y	136	Steel, Bes-semer	J. Brown and Co.	1 $\frac{1}{8}$	No	Fractured through rivet-hole.
29/9/08	Nelson	F	93	Steel ..	Brown, Bayley, and Co.	1 $\frac{1}{8}$	No	Fractured across tyre.
22/12/08	Waipiata, S.I.M.L. & B.	L	1941	Steel, Bes-semer	J. Brown and Co.	$\frac{5}{16}$	No	Fractured through rivet-hole.
25/2/09	Ashburton, S.I.M.L. & B.	L	1373	Steel, 1874	Brown, Bayley, and Dixon	1	No	Fractured through rivet-hole.
12/6/09	Lyttelton, S.I.M.L. & B.	M	165	Steel ..	Brands turned out	$\frac{13}{16}$	No	Fractured across tire.
2/9/09	Balclutha, S.I.M.L. & B.	L	140	Steel ..	Krupp ..	$\frac{15}{16}$	..	Fractured through rivet-hole.
24/9/09	Balclutha, S.I.M.L. & B.	L	108	Steel, Bes-semer	Cammells ..	1 $\frac{5}{16}$	..	Fractured from rivet to outer edge.
21/10/09	Thorndon, N.I.M.L. & B.	L	5080	Steel ..	Brown, Bayley, and Dixon	$\frac{15}{16}$	No	Fractured at rivet.
29/10/09	Milton, S.I.M.L. & B.	L	700	..	Brown, Bayley, and Dixon	1 $\frac{5}{16}$	..	Fractured between spokes.
15/1/10	Nelson	F	93	Steel, 1905	Vickers, Australia	1 $\frac{13}{16}$	No	Clean break.
4/1/11	Pictou	L	2876	..	..	..	No	Old flaw.
22/8/11	Birchfield, Westport ..	M	1012	Steel ..	P. Coy ..	$\frac{7}{8}$	No	Fractured across rivet-hole.
10/6/12	Oamaru, S.I.M.L. & B.	L	2737	Steel ..	Krupp ..	1 $\frac{1}{4}$	No	Fractured through edge of rivet-hole.
27/8/12	Timaru, S.I.M.L. & B.	L	872	Steel, Bes-semer	Blacknavon ..	1 $\frac{1}{4}$	No	Old flaw.
30/6/13	Dunedin, S.I.M.L. & B.	J	31	Steel ..	Siemens Landor ..	1 $\frac{1}{8}$	No	Fractured through rivet-hole, due to frosty weather.
23/8/13	Taumarunui, N.I.M.L. & B.	L	3449	Steel ..	Not visible ..	1 $\frac{9}{16}$	No	Fractured half-way between spokes.
26/6/14	Mercer, N.I.M.L. & B.	A	1025	Steel ..	Taylors 1907 ..	1 $\frac{7}{16}$	No	New break.

Year ending 31/3/1916, nil.

RETURN No. 4.

DRAW-BAR FAILURES ON TRAINS FOR YEARS 1913 TO 1916.

(Prepared in Chief Mechanical Engineer's Office.)

Year.	Flaw.	Deraiment.	Sudden Stop at Block on Line.	Sudden Jerk on Train.	Recoil Stopping.	Not known.	Total.
1913-14 ..	17	..	..	8	..	..	25
1914-15 ..	12	..	..	7	..	3	22
1915-16 ..	13	2	2	7	3	6	33

RETURN No. 5.

LIST OF SPRINGS IN STOCK, PETONE, 22ND FEBRUARY, 1917.

(Prepared in Railway Storekeeper's Office, Petone.)

Number.	Description.
275	As shown on blue print 4310.
1,433	As shown on blue print 4414.
133	7 in. long by 3 $\frac{7}{8}$ in. by 2 $\frac{1}{4}$ in. hole single-coil draw-bar compression.

RETURN No. 6.

DERAILMENTS OF CARS, VANS, AND WAGONS WHILE RUNNING TRAINS ON MAIN LINE FOR YEARS
1911-12 TO 1915-16.

(Prepared in Chief Mechanical Engineer's Office.)

Section.	Number of Derailments for Year ending 31st March,				
	1911-12.	1912-13.	1913-14.	1914-15.	1915-16.
Kawakawa-Whangarei .. ..	..	..	..	..	1
Kaihu .. ..	..	..	..	..	..
Gisborne .. ..	..	1	..	..	..
North Island Main Line and Branches	11	9	12	7	6
South Island Main Line and Branches	4	7	1	6	9
Picton	1	..	..	1	..
Nelson .. ..	..	..	..	..	..
Westport .. ..	..	..	1	..	..
Westland .. ..	..	1	2	..	..
Total	16	18	16	14	16
Number of vehicles on line	19,733	20,797	21,614	22,623	23,446
Mileage run	8,371,687	9,016,224	9,313,268	9,383,420	9,356,522
Mileage run per derailment	523,230	500,901	582,079	670,244	584,783
<i>Derailment due to</i>					
Slips and obstruction on line ..	2	1	2	4	8
Defect in track	1	..	1	1	1
Vehicles badly loaded	2	2	3	1	..
Points left unlocked	2	6	1	..	..
Sudden jerk .. ..	..	..	..	2*	..
Doors not secured	2	1	2	..	..
Defects in vehicles, as below ..	4	2	4	4	2
Cause unknown	3	6	3	2	5
	16	18	16	14	16
<i>Defects in Vehicles.</i>					
Bolts working out of hornplate ..	1	..	..	..	..
Broken axles	2	1	..	1	1
Split - pins left out, allowing brake-block to fall .. ..	..	..	2	..	..
Loose tire .. ..	..	..	1	..	..
Coupling-pins working out .. ..	..	..	1	3	..
Displacement of brass .. ..	..	1†	..	..	1‡
Headstock pulled off	1§	..	..	..	..

* Rough handling of train. Draw-bars pulled out. † Record 1912/1494: "A" box, two brasses opposite corners of wagon. ‡ Record 1915/1975: Axle-box "D" to B.P. 2757, one brass. § Ballast-hopper wagon derailed on main line.

RETURN No. 7.

DRAW-BAR SPRINGS ISSUED FROM YEAR ENDING 31ST MARCH, 1912, TO 3RD FEBRUARY, 1917.

(Prepared in Chief Mechanical Engineer's Office.)

Year ending 31st March,					Working-expenses.	A.O.L.	Total.
1912 .. ..	..	..	..	..	6,185	496	6,681
1913 .. ..	..	..	..	..	9,051	1,672	10,723
1914 .. ..	..	..	..	..	8,066	1,548	9,614
1915 .. ..	..	..	..	..	5,585	2,183	7,768
1916 .. ..	..	..	..	..	3,806	1,126	4,932
Up to 3rd February, 1917 .. ..	..	..	..	..	6,577	1,574	8,151

On occasions when Stores are unable to supply draw-bar springs they are obtained from A.O.L. stocks and replaced when supplies come to hand.

RETURN No. 8.

BEARING-SPRINGS ISSUED FROM YEAR ENDING 31ST MARCH, 1912, TO 3RD FEBRUARY, 1917.

(Prepared in Chief Mechanical Engineer's Office.)

Year ending 31st March,						Working-expenses.	A.O.L.	Total.
1912	..	..	..	..	..	3,011	1,214	4,225
1913	..	..	..	..	..	3,424	6,256	9,680
1914	..	..	..	..	..	3,034	3,304	6,338
1915	..	..	..	..	..	3,471	11,381	14,852
1916	..	..	..	..	..	2,916	4,650	7,566
Up to 3rd February, 1917	..	..	..	..	..	3,866	4,591	8,457

Present type of bearing-springs, which were formerly used for draw-bars, are also used for latter purpose when standard draw-bar springs are not available.

RETURN No. 9.

NUMBER OF CAR AND WAGON AXLES ISSUED FOR REPAIRS AND RENEWALS.

(Prepared in Chief Mechanical Engineer's Office.)

Year.						Number issued.
1911-12	..	..	..	..	..	1,922
1912-13	..	..	..	..	..	2,631
1913-14	..	..	..	..	..	942
1914-15	..	..	..	..	..	479
1915-16	..	..	..	..	..	551

The renewal of iron axles was practically completed in 1913.

RETURN No. 10.

NUMBER OF CAR AND WAGON TIRES ISSUED FOR REPAIRS AND RENEWALS.

(Prepared in Chief Mechanical Engineer's Office.)

Year.						Number issued.
1911-12	..	..	..	..	..	607
1912-13	..	..	..	..	..	553
1913-14	..	..	..	..	..	758
1914-15	..	..	..	..	..	1,083
1915-16	..	..	..	..	..	980

RETURN No. 11.

ISSUES FROM STORES STOCKS.—SPRINGS STANDARD BEARING, B.P. 4414.

(Prepared in Comptroller of Stores' Office.)

Year.						From General Stock.	From A.O.L. Stock.	Total Issues.
1911-12	..	..	..	..	..	1,610	2,615	4,225
1912-13	..	..	..	..	..	5,363	4,317	9,680
1913-14	..	..	..	..	..	5,305	1,033	6,338
1914-15	..	..	..	..	..	2,339	12,513	14,852
1915-16	..	..	..	..	..	1,580	5,986	7,566
1916-17 (to 6/1/17)	..	..	..	..	..	7,120	895	8,015
Totals	..	..	..	..	..	23,317	27,359	50,676

Average issues per year during last six years, roughly, 8,500.

RETURN No. 11—*continued*.

ISSUES FROM STORES STOCKS.—SPRINGS, STANDARD BUFFER, TO B.P. 4310.

Year.	From General Stock.	From A.O.L. Stock.	Total Issues.
1911-12	5,635	1,046	6,681
1912-13	10,130	593	10,723
1913-14	7,750	1,864	9,614
1914-15	6,347	1,421	7,768
1915-16	1,850	3,082	4,932
1916-17 (to 6/1/17)	7,361	554	7,915
Totals	39,073	8,560	47,633

Average issues per year during last six years, roughly, 8,000.

ISSUES FROM STORES STOCKS.—TIRES, CAR AND WAGON, B.P. 5,000.

Year.	From General Stock.	From A.O.L. Stock.	Total Issues.
1911-12	1,185	521	1,706
1912-13	1,436	1,709	3,145
1913-14	826	1,773	2,599
1914-15	1,886	3,104	4,990
1915-16	28	3,952	3,980
1916-17 (to 6/1/17)	49	2,818	2,867
Totals	5,410	13,877	19,287

Average issues per year during last six years, roughly, 3,200.

ISSUES FROM STORES STOCKS.—AXLES, CAR AND WAGON, B.P. 2019A.

Year.	From General Stock.	From A.O.L. Stock.	Total Issues.
1911-12	1,363	1,637	3,000
1912-13	2,350	973	3,323
1913-14	1,144	540	1,684
1914-15	230	495	725
1915-16	399	171	570
1916-17 (to 6/1/17)	170	357	527
Totals	5,656	4,173	9,829

RETURN No. 11A.

SPRINGS, STANDARD BEARING, TO B.P. 4414.

(Prepared in Comptroller of Stores' Office.)

	Ordered.	Received.	Issued.
On hand, 1/4/11	8,549	8,549	..
Under order, 1/4/11	7,000	..	..
Year 1911-12	6,000	9,000	4,225
.. 1912-13	4,800	8,800	9,680
.. 1913-14	8,100	4,700	6,338
.. 1914-15	7,264	4,600	14,852
.. 1915-16	18,552	14,064	7,566
.. 1916-17 (to 6/1/17) .. .. .	..	10,552	8,015
Totals	60,265	60,265	50,676
Less receipts	60,265	Less issues to 6/1/17 50,676	..
Balance on hand, 6/1/17 .. .. .	..	9,589	..

RETURN No. 11A—*continued*.
SPRINGS, STANDARD BUFFER, TO B.P. 4310.

	Ordered.	Received.	Issued
On hand, 1/4/11	1,798	1,798	..
Under order, 1/4/11	3,200	..	..
Year 1911-12	10,200	12,600	6,681
„ 1912-13	6,590	6,000	10,723
„ 1913-14	8,150	8,638	9,614
„ 1914-15	7,800	5,750	7,768
„ 1915-16	11,526	7,002	4,932
„ 1916-17 (to 6/1/17)	6,500	6,650	7,915
Totals	55,764	48,438	47,633
Less receipts	48,438	Less issues to 6/1/17 .. 47,633	
Balance to arrive	7,326	On hand, 6/1/17 805	
		7,326	
Total provided for .. .. .	..	8,131	

TIRES, CAR AND WAGON, B.P. 5000.

	Ordered.	Received.	Issued.
On hand, 1/4/11	862	862	..
Under order, 1/4/11	4,000	..	..
Year 1911-12 .. .. .	..	4,000	1,706
„ 1912-13	1,898	1,400	3,145
„ 1913-14	4,496	3,098	2,599
„ 1914-15	6,092	4,028	4,990
„ 1915-16	2,576	3,648	3,980
„ 1916-17 (to 6/1/17)	5,674	2,611	2,867
Totals	25,598	19,647	19,287
Less receipts	19,647	Less issues to 6/1/17 .. 19,287	
Balance to arrive	5,951	On hand, 6/1/17 360	
		5,951	
Total provided for .. .. .	..	6,311	

AXLES, CAR AND WAGON, B.P. 2019A.

	Ordered.	Received.	Issued.
On hand, 1/4/11	31	31	..
Under order, 1/4/11	3,600	..	..
Year 1911-12	2,000	3,775	3,000
„ 1912-13	3,280	3,269	3,323
„ 1913-14	1,260	2,696	1,684
„ 1914-15	570	400	725
„ 1915/16	12	570	570
„ 1916-17 (to 6/1/17)	250	..	527
Totals	11,003	10,741	9,829
Less receipts	10,741	Less issues to 6/1/17 9,829	
To arrive at 6/1/17	262	912	
		262	
Total provided for .. .. .	..	1,174	

RETURN No. 11A—*continued*.

AXLES, B.P. 2855 (FOR 25-TON WAGONS).

	Ordered.	Received.	Issued.
On hand, 1/4/11	187	187	..
Year 1911-12 .. .. .	..	..	12
„ 1912-13	200	104	202
„ 1913-14	80	176	77
„ 1914-15	100	..	115
„ 1915-16	400	350	159
„ 1916-17 (to 6/1/17)	140	107	354
Totals	1,107	924	919
Less received	924	Less issued .. 919	
Balance to arrive	183	On hand, 6/1/17 5 183	
Total provided for .. .. .	..	188	

AXLES, B.P. 2894 (FOR 47½ FT. CARS AND FOUR-WHEEL STOCK).

	Ordered.	Received.	Issued.
On hand, 1/4/11	671	671	..
Year 1911-12	1,200	..	164
„ 1912-13	224	1,394	284
„ 1913-14	752	430	604
„ 1914-15	1,846	352	1,503
„ 1915-16	956	1,846	1,046
„ 1916-17 (to 6/1/17)	550	252	519
Totals	6,199	4,945	4,120
Less received	4,945	Less issued .. 4,120	
Balance to arrive	1,254	On hand, 6/1/17 825 1,254	
Total provided for .. .. .	..	2,079	

AXLES, B.P. 3081 (FOR 12-TON WAGONS).

	Ordered.	Received.	Issued.
On hand, 1/4/11	505	505	..
Year 1911-12 .. .. .	..	..	132
„ 1912-13	700	247	471
„ 1913-14	200	453	460
„ 1914-15 .. .. .	..	200	94
„ 1915-16	100	..	7
„ 1916-17 (to 6/1/17)	600	100	106
Totals	2,105	1,505	1,200
Less received	1,505	Less issued .. 1,270	
Balance to arrive	600	On hand, 6/1/17 235 600	
Total provided for .. .. .	..	835	

RETURN No. 12.

LIST OF FINES INFLICTED ON MEMBERS FOR DRAW-BAR FAILURES ON RUNNING TRAINS, 1ST APRIL, 1911, TO 28TH FEBRUARY, 1917.

(Prepared in General Manager's Office. Supplied on request of Mr. T. M. Wilford.

(See page 80.)

Nil.

RETURN No. 13.

LIST OF SPRINGS IN STORES STOCK, INVERCARGILL, 6TH MARCH, 1917.

(Prepared in Railway Storekeeper's Office, Invercargill.)

Number.				Description.
964	..	..	..	As shown on blue print No. 4414.
28	..	..	..	As shown on blue print No. 4310.

RETURN No. 14.

NEW AND REPAIRED CARS, BRAKE-VANS, AND WAGONS AT ADDINGTON, HILLSIDE, AND INVERCARGILL WORKSHOPS, YEAR ENDING 31ST MARCH, 1913, TO YEAR ENDING 31ST MARCH, 1916, INCLUSIVE.

(Prepared in Locomotive Engineer's Office, Addington.)

Description of Work.		Shops.	Cars.				Brake-vans.				Wagons.				Totals.			
			1913.	1914.	1915.	1916.	1913.	1914.	1915.	1916.	1913.	1914.	1915.	1916.	1913.	1914.	1915.	1916.
New	..	Addington	17	18	19	24	..	..	..	..	33	63	43	6	50	81	62	30
		Hillside ..	..	2	..	..	1	4	1	10	393	345	280	141	394	351	281	151
		Invercargill	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	17	20	19	24	1	4	1	10	426	408	323	147	444	432	343	181
Heavy repairs	..	Addington	194	253	219	206	53	75	55	77	492	646	1,085	1,019	739	974	1,359	1,302
		Hillside ..	133	105	101	124	34	30	23	37	546	512	361	304	713	647	485	465
		Invercargill	89	91	71	37	40	24	28	13	648	567	277	349	777	682	376	399
Total	..	..	416	449	391	367	127	129	106	127	1,686	1,725	1,723	1,672	2,229	2,303	2,220	2,166
Light repairs..	..	Addington	11	17	33	59	3	1	14	14	1,583	1,885	1,640	1,182	1,597	1,903	1,687	1,255
		Hillside ..	81	135	151	94	32	34	41	29	1,374	1,834	2,128	2,044	1,487	2,003	2,320	2,167
		Invercargill	57	61	50	99	16	22	16	30	1,085	1,464	2,045	2,257	1,158	1,547	2,111	2,386
Total	..	..	149	213	234	252	51	57	71	73	4,042	5,183	5,813	5,483	4,242	5,453	6,118	5,808
Total repairs..	..	Addington	205	270	252	265	56	76	69	91	2,075	2,531	2,725	2,201	2,336	2,877	3,046	2,557
		Hillside ..	214	240	252	218	66	64	64	66	1,920	2,346	2,489	2,348	2,200	2,650	2,805	2,632
		Invercargill	146	152	121	136	56	46	44	43	1,733	2,031	2,322	2,606	1,935	2,229	2,487	2,785
Total	..	..	565	662	625	619	178	186	177	200	5,728	6,908	7,536	7,155	6,471	7,756	8,338	7,974
Rolling stock on South Island main line and branches at beginning of year		..	508	524	539	558	149	150	154	154	8,092	8,507	8,911	9,194	8,749	9,181	9,604	9,906
Lifted	..	..	..	529	520	480	..	146	119	136	..	4,936	4,647	4,730	..	5,611	5,286	5,346

RETURN No. 15.

PAINT-WORK ON CARS, BRAKE-VANS, AND WAGONS AT ADDINGTON, HILLSIDE, AND INVERCARGILL WORKSHOPS, YEAR ENDING 31ST MARCH, 1913, TO YEAR ENDING 31ST MARCH, 1916, INCLUSIVE.

(Prepared in Locomotive Engineer's Office, Addington.)

Description of Work.	Shops.	Cars.				Brake-vans.				Wagons.				Totals.			
		1913.	1914.	1915.	1916.	1913.	1914.	1915.	1916.	1913.	1914.	1915.	1916.	1913.	1914.	1915.	1916.
Wholly painted and varnished	Addington	..	..	1	5	..	..	..	..	..	..	..	..	..	..	1	5
	Hillside ..	..	1	..	3	..	..	..	..	..	..	..	..	..	1	..	3
	Invercargill	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	..	1	1	8	..	..	..	..	..	..	..	..	..	1	1	8
Paint and varnish renewed	Addington	10	..	..	4	1	..	..	..	..	..	..	..	11	..	..	4
	Hillside ..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
	Invercargill	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	11	..	..	4	1	..	..	..	..	..	..	..	12	..	..	4
Wholly painted	Addington	113	142	162	142	28	45	30	26	562	647	652	529	703	834	844	697
	Hillside ..	107	81	75	72	29	25	9	33	763	775	489	301	899	881	573	406
	Invercargill	40	46	31	35	12	6	13	11	269	321	309	343	321	373	353	389
Total ..	..	260	269	268	249	69	76	52	70	1,594	1,743	1,450	1,173	1,923	2,088	1,770	1,492
Paint renewed	Addington	99	146	108	142	27	31	39	65	1,557	1,960	2,120	1,690	1,683	2,137	2,267	1,897
	Hillside ..	65	99	177	143	33	32	55	43	1,430	1,666	2,233	2,202	1,528	1,797	2,465	2,388
	Invercargill	35	13	60	86	28	12	22	31	392	233	589	1,492	455	258	671	1,609
Total ..	..	199	258	345	371	88	75	116	139	3,379	3,859	4,942	5,384	3,666	4,192	5,403	5,894
Total paint-work	Addington	222	288	271	293	56	76	69	91	2,119	2,607	2,772	2,219	2,397	2,971	3,112	2,603
	Hillside ..	173	181	252	218	62	57	64	76	2,193	2,441	2,722	2,503	2,428	2,679	3,038	2,797
	Invercargill	75	59	91	121	40	18	35	42	661	554	898	1,835	776	631	1,024	1,998
Total ..	..	470	528	614	632	158	151	168	209	4,973	5,602	6,392	6,557	5,601	6,281	7,174	7,398
Rolling-stock on South Island main line and branches at beginning of year		508	524	539	558	149	150	154	154	8,092	8,507	8,911	9,194	8,749	9,181	9,604	9,906

RETURN No. 16.

ROLLING-STOCK ON WESTPORT SECTION, 31ST MARCH, 1916.

(Prepared in Chief Mechanical Engineer's Office.)

Cars.	Brake-vans.	Wagons.									
		H.	K.	K Sleepers.	L.	M.	N.	O.	Q.	U.	Total.
10	7	4	5	1	17	24	32	29	644	2	758

RETURN No. 17.

NUMBER OF CAR AND WAGON AXLES RENEWED, 1899-1916.

(Prepared in Chief Mechanical Engineer's Office.)

Year ending 31st March,	Number renewed.	Year ending 31st March,	Number renewed.
1899	232	1909	1,019
1900	787	1910	847
1901	675	1911	983
1902	454	1912	2,357
1903	1,223	1913	2,182
1904	969	1914	578
1905	1,068	1915	175
1906	1,311	1916	198
1907	1,449		
1908	2,095		Total 18,602

All iron axles replaced, 1913 ; since that date renewals are for steel axles over twenty years old.

RETURN No. 18.

STOCK OF SPRINGS ON HAND AT ADDINGTON WORKSHOPS AND STORES, 14TH MARCH, 1917.

(Prepared in Locomotive Engineer's Office, Addington.)

						Addington Workshops.	Addington Stores.
B.P. 4,310	128	35
B.P. 4,414	94	530
B.P. 76,302	14	..

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