

SESSION I.
1921.
NEW ZEALAND.

TAUPO TRAMWAY LANDS AND TIMBER
COMMISSION

(REPORT OF THE), WITH APPENDICES.

Presented to both Houses of the General Assembly by Command of His Excellency.

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COMMISSION.

JELlicoe, Governor-General.

To all to whom these presents shall come, and to HORATIO JOHN HOOPER BLOW, Esq., I.S.O.; FREDERICK WILLIAM FURKERT, Esq., A.M.I.C.E., A.M.I.M.E., Engineer-in-Chief and Under-Secretary, Public Works Department; HERBERT BUXTON, Esq., Chief Traffic Manager, New Zealand Railways; and GORDON HURRELL MORLAND McCLURE, Esq., Commissioner of Crown Lands and Chief Surveyor for the Wellington Land District; all of Wellington.

WHEREAS it is desired to ascertain whether the tramway and timber rights of the Taupo Totara Timber Company (Limited) should be acquired by the Crown, or what action (if any) should be taken with respect thereto :

Now, therefore, I, John Rushworth, Viscount Jellicoe, Governor-General 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

HORATIO JOHN HOOPER BLOW,
FREDERICK WILLIAM FURKERT,
HERBERT BUXTON, and
GORDON HURRELL MORLAND McCLURE,

to be a Commission for the purpose of inquiring by all lawful means into all matters connected with the Taupo Totara Timber Company's estate, rights, and interests, and in particular to report,—

- (1.) Whether the acquisition by the Crown of the tramway (or railway) constructed by the said company from Putaruru to Mokai would be in the best interests of the State : if so, at what price, and on what terms and conditions.
- (2.) If the purchase of the whole of the tramway (or railway) is not recommended, is the purchase of part thereof deemed advisable, and, if so, what part ?
- (3.) If the purchase of the whole or part of the tramway (or railway) is recommended, what is the estimated cost of bringing it into such a condition as would render it suitable for incorporation into the general railway system of New Zealand ?
- (4.) If purchase of the tramway (or railway) is not deemed desirable, whether the Crown should continue to regulate the scale of charges thereover, and whether it should make any arrangement with the company as to the future control of the tramway, and, if so, on what basis.
- (5.) Whether any advantage to the State would be gained by extending such tramway (or railway) beyond the present terminus at Mokai.
- (6.) Whether it would be in the public interests for the existing timber rights of the said company to be acquired by the Crown and worked by one or more of the State Departments.
- (7.) Whether any further timber rights or lands in the vicinity of the company's timber rights or tramway should be acquired by the Crown, and, if so, what particular areas or forests.

- (8.) What action (if any) should be taken by the Government to develop in the best manner the areas of Native and Crown land served by the said tramway that are considered suitable for settlement purposes.
- (9.) Whether any of the remaining rights of the said company over land or any other matter should be acquired by the Crown, and, if so, for what purpose and at what price.
- (10.) Generally, any other matter bearing on the development of settlement on the areas served by the said tramway or any proposed extension thereof.

And, with the like advice and consent, I do further appoint you,

HORATIO JOHN HOOPER BLOW,

to be the Chairman of the said Commission.

And you are hereby authorized to conduct any inquiries under these presents at such times and places 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 such persons as you think capable of affording you information as to the matters aforesaid, and to call for and examine all such documents as you deem likely to afford you information on any such matters.

And, using all due diligence, you are required to report to me under your hands and seals not later than the thirtieth day of November, one thousand nine hundred and twenty, your opinion on the aforesaid matters.

And you are hereby strictly charged and directed that you shall not at any time publish or otherwise disclose, save to me in pursuance of these presents or by my direction, the contents or purport of any report so made or to be made by you.

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

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 Governor-General of the Dominion of New Zealand; and issued under the Seal of that Dominion, at the Government House at Wellington, this 11th day of October, 1920.

D. H. GUTHRIE, Minister of Lands.

Approved in Executive Council.

F. D. THOMSON,
Clerk of the Executive Council.

GOD SAVE THE KING!

EXTENDING TIME OF NORTH TAUPO COMMISSION.

JELlicoe, Governor-General.

To all to whom these presents shall come, and to HORATIO JOHN HOOPER BLOW, Esq., I.S.O.; FREDERICK WILLIAM FURKERT, Esq., A.M.I.C.E., A.M.I.M.E., Engineer-in-Chief and Under-Secretary, Public Works Department; HERBERT BUXTON, Esq., Chief Traffic Manager, New Zealand Railways; and GORDON HURRELL MORLAND McCLURE, Esq., Commissioner of Crown Lands and Chief Surveyor for the Wellington Land District; all of Wellington: Greeting.

WHEREAS by a Warrant dated the eleventh day of October, one thousand nine hundred and twenty, and issued under my hand and the public seal of the Dominion, you were appointed a Commission to inquire into and report whether the tramway and timber rights of the Taupo Totara Timber Company (Limited) should be acquired by the Crown, or what action (if any) should be taken with respect thereto, and you were directed and required to report to me not later than the thirtieth day of November, one thousand nine hundred and twenty:

And whereas it is expedient that the said period should be extended as hereinafter provided:

Now, therefore, I, John Rushworth, Viscount Jellicoe, Governor-General of the Dominion of New Zealand, in exercise of the powers conferred by the Commissions of Inquiry Act, 1908, and all other powers and authorities enabling me in that behalf, and acting by and with the advice and consent of the Executive Council of the said Dominion, do hereby declare and appoint that the time at or before which you shall present to me your report aforesaid is hereby extended to the thirty-first day of December, one thousand nine hundred and twenty.

And, with the like advice and consent, and in further pursuance of the said power and authority, I do hereby confirm the said Commission except as herein varied.

Given under the hand of His Excellency the Governor-General of the Dominion of New Zealand; and issued under the Seal of that Dominion, at the Government House at Wellington, this 29th day of November, 1920.

D. H. GUTHRIE, Minister of Lands.

Approved in Council.

F. D. THOMSON,
Clerk of the Executive Council.

GOD SAVE THE KING!

REPORT.

To His Excellency John Rushworth, Viscount Jellicoe, Governor-General
of the Dominion of New Zealand.

MAY IT PLEASE YOUR EXCELLENCY,—

We, the Commissioners appointed by Your Excellency on the 11th day of October, 1920, to inquire by all lawful means into all matters connected with the Taupo Totara Timber Company's estate, rights, and interests, and whether it would be advantageous to the State to acquire the said company's tramway from Putaruru to Mokai, or any portion thereof, or any of the other rights or interests of the said company, also whether it would be advisable to extend the said tramway or to alter and improve it, and also to advise what, if any, action should be taken by the Government to develop in the best manner possible the areas of Native and Crown land served by the said tramway that are considered suitable for settlement purposes, and to report on the several matters referred to in the said Commission, have now the honour to report for Your Excellency's information as follows :—

A preliminary meeting of the Commission was held at Wellington on the 14th October, at which an itinerary and other details were arranged, and at divers later dates public sittings were held at Wellington, Rotorua, Putaruru, Tokoroa, Mokai, Taupo, and Auckland.

We have also carefully examined the company's tramway between Putaruru and Mokai, and the route of the projected extension of same from Oruanui Siding to Oruanui Township, and the route of the further authorized extension of the line thence to Taupo.

We have also similarly examined the company's bush tramways, and made a general inspection of the country along the route of both the existing tramway and its proposed and authorized extensions, as well as the land bordering on Lake Taupo, and satisfied ourselves as to the general character of the soil and its probable producing-capacity. We were also shown over the cheese-factory at Tokoroa, and also inspected the dairy factory now in course of erection at Waihi, Lake Taupo.

Mr. F. G. Dalziell, the chairman of directors of the Taupo Totara Timber Company, attended all our public sittings and accompanied us on our several visits of inspection, as also did Mr. E. E. Vaile, acting on behalf of several local public bodies of the Rotorua district. The Commission also had the advantage of more or less detailed conferences with members of the Putaruru Development League, the Tokoroa Settlers' Committee, and other residents, and obtained from them much useful and valuable information. Altogether fourteen public sittings were held and forty witnesses examined. Mr. E. E. Vaile and Sir John Findlay addressed the Commission, the former on behalf of the Rotorua residents and the latter on behalf of the Taupo Totara Timber Company (hereinafter referred to as "the company"). A full transcript of the evidence and addresses, covering 398 pages of closely typed foolscap, is appended hereto. [Not printed.]

HISTORY OF THE UNDERTAKING.

The company was formed about 1900 to acquire, by purchase or lease, and to work, a large area of forest land at or near Mokai, in the Taupo district. At the time the company acquired the property it was believed to carry 500,000,000 ft. of good millable timber—much of it totara—and the balance matai, rimu, and other varieties. It was originally proposed to float the timber down the Waikato River, which river runs for some miles through the company's property; but this was subsequently deemed to be impracticable, as the company's experts advised that the timber would be liable to great damage and possible destruction in passing sundry rapids which occur in the course of the

river between Atiamuri and Cambridge. The flotation method was, however, never tested. It was then decided to construct a steam tramway, and in 1905 initial steps in that direction were taken, and later on a formal contract was entered into with a leading firm of contractors to construct a tramway from Putaruru Station, on the Rotorua Railway, to the company's bush at Mokai. The contract provided that the tramway should be completed early in 1905, and it seems to have been finished by about that date, as the line actually began to bring out timber about the middle of that year.

The first portion of the line—viz., the section between Putaruru and Lichfield, five miles in length—is constructed on the old formation of the Lichfield Branch Railway, which was discontinued and taken up consequently on the opening of the through line to Rotorua. The company holds a year-to-year lease of this strip of ground from the Railway Department, which lease they first obtained in December, 1904.

As already stated, the output of sawn timber began in 1905, and has continued ever since. The company did not apply for an Order in Council under the Tramways Act to authorize the construction and working of its tramway until 1907, and the Order (Order No. 1) was not actually issued until the 29th January, 1908.

Practically the whole line to Mokai—fifty-one miles in length—is laid on the company's freehold or leasehold property, and the company seems to have constructed the tramway and subsequently worked it (until January, 1908) as a private tramway under the Tramways Act, 1894.

For the first few years the company's operations were not very successful from a profit-earning point of view, and the quantities of millable timber contained in its bushes had also been found to be largely overestimated, and they petitioned Parliament in the session of 1911, and again in 1912, submitting proposals for an extension of their tramway to Taupo, and for certain assistance being rendered to them by the owners of the land that would be specially benefited by such an extension.

The Parliamentary Committee of 1911 which dealt with the petition of that year recommended a postponement of the matter to the following year, and that in the meantime full inquiry be made as to the best means of connecting Lake Taupo by rail with the existing railway system.

The similar Committee of 1912 advised that the Order in Council to authorize the construction of the extension of the tramway to Taupo should be issued, and that the Government should guarantee the cost of the line up to £50,000.

On the 13th October, 1913, Order in Council No. 2 was issued to the company. This Order authorized the extension of the tramway to Taupo—the work to be completed on or before the 31st December, 1917—and at the same time made sundry amendments in Order No. 1.

In the session of 1914 special legislation was passed (see section 28 of the Reserves and other Lands Disposal and Public Bodies Empowering Act, 1914) empowering the company, on obtaining the consents of the owners of the land affected, to levy a contribution at the rate of 1s. per acre on the lands to be benefited by the Taupo extension—roughly estimated at 1,500,000 acres—for the purpose of raising a fund to provide for the construction of such extension. The European landowners are stated to have approved of this proposal, but the Native owners disapproved of it, and consequently nothing was done.

The war also doubtless tended to hamper operations having for their object the raising of large sums of money, and nothing further seems to have happened until 1917, but the company continued to carry on its sawmilling operations in the meantime.

On the 27th September, 1917, the company made application for another Order in Council extending the time for the completion of its tramway to Taupo, and on the 11th March, 1918, Order in Council No. 3 was issued, extending this time to the 31st December, 1921; and this was the state of affairs existing at the time of the setting-up of Your Excellency's Commission.

DESCRIPTION OF TRAMWAY.

The company's tramway is a single-track line laid to a gauge of 3 ft. 6 in. (the standard railway gauge in New Zealand), commencing at the company's private siding at the Putaruru Station of the Government railway from Morrinsville to Rotorua, and extending thence to the company's sawmills at Mokai, a total distance of fifty-one miles. As already mentioned, the first section of the line—from Putaruru to Lichfield, five miles—is laid on the old formation of the Lichfield Branch Railway, which formation is similar in character to the average New Zealand Government branch railways. The formation of the remainder of the line to Mokai was carried out for the company by contract. There are also several miles of bush trams in addition to the main line between Putaruru and Mokai. The curves on parts of the line are both numerous and sharp, and the gradients in places are severe. Between Lichfield and Oruanui 1-in-35 grades are frequent, and also $1\frac{1}{2}$ -chain-radius curves. The combination of these in places results in a virtual gradient very much steeper than the actual, while between Oruanui and Mokai there are in places grades as steep as 1 in 30. There are no less than nine miles of curves on the line that are under 5 chains radius, and six and a quarter miles under 3 chains radius. To such an extent is the line lengthened by curvature and indirectness of location that the distance between Putaruru and Mokai—thirty-three miles in an air-line—is no less than fifty-one miles by the tramway. This feature is repeated in the routes of the proposed and authorized extensions to Oruanui and Taupo, which are thirty-eight and forty-six miles respectively in an air-line from Putaruru, and fifty-five miles and seventy miles respectively by the route of the tramway.

The total rises and falls on the whole line from Putaruru to Mokai amount to 3,574 ft., which means that every train run between these points has to be raised and lowered to that extent, constituting a heavy strain on the locomotive-power required to work the line.

The line is laid with 30 lb. steel rails, which are in very good order considering that they have been in use on a line such as this for over fifteen years; and the sleepers are unusually close together (17 to the rail instead of 15, the usual Government standard) and are of mixed timbers, totara predominating. They are in fair order, but some of them need renewal.

Stopping-places on the line for the convenience of settlers are numerous, but sidings are very few, and station-buildings are almost non-existent.

The bridges between Putaruru and Kopokorahi are a good deal decayed and will require to be practically rebuilt, and the bridge over the Waikato River also needs considerable overhaul, if not entire reconstruction. The remainder of the bridges on the line are in fair order. We think it desirable that the attention of the company be called to the evidence of the Chief Engineer of Working Railways regarding the state of the bridges.

The line generally is well maintained, but all the cuttings are narrow, and most of the embankments also.

The tramway is what is known as a "light line," with the character and general features of a good sawmill steam tramway, and it is well suited for the work it was designed for. It is quite different, however, from the New Zealand Government standard railway construction.

The tramway is equipped with the following rolling-stock: One small locomotive (Class A), one Mallet compound locomotive, one Barclay locomotive, two Heisler (geared) locomotives, two composite passenger and goods vans, one goods-van, twenty-five platform wagons for timber, &c., one platform wagon for bush work; and further rolling-stock as under is on order to meet the growing traffic on the tramway: two Heisler locomotives of larger size, ten platform wagons.

COMPANY'S PETITIONS AND NATURE OF THEIR APPEAL.

The company petitioned Parliament in 1911 for authority to extend its tramway to Taupo, but, as such extension would greatly enhance the value of

the large area of Native land along and adjacent to its route, the company sought authority to purchase 200,000 acres of Native land at its then value, and to dispose of it after the tramway was completed at its enhanced value, but on such terms and conditions as the Government might prescribe.

The Parliamentary Committee which dealt with the petition recommended that the consideration of the matter be held over till the following session, but that in the meantime full inquiry should be made as to the best means of connecting Lake Taupo by rail with the existing railway system, so as to facilitate the early settlement of the large areas of Crown and Native lands in the Taupo district.

In pursuance of that recommendation Mr. R. W. Holmes, the then Engineer-in-Chief of the Public Works Department, was directed to visit the district and to go carefully into the matter, and on the 4th May, 1912, he presented his report on the subject, which is set out at length on pages 81 to 83 of Parliamentary Paper I.—10 of Session II of 1912. In that report Mr. Holmes described four different or divergent routes for the railway, as under : (1.) Putaruru to Taupo via Oruanui; (2) Putaruru to Taupo via Atiamuri; (3) Rotorua to Taupo via Orakeikorako; (4) Rotorua to Taupo via Waiotapu. Nos. 1 and 2 are alternative routes for an extension of the company's tramway, while Nos. 3 and 4 are alternative routes for an extension of the Government railway from Rotorua.

After carefully weighing and discussing the merits and demerits of the different lines, including their respective lengths and estimated cost of construction, Mr. Holmes summed the matter up thus : " From the above remarks it would appear that whether the question be viewed from the standpoint of cheapness of construction, suitability of the line when constructed, future working-expenses, probable traffic (and therefore revenue), or from the point of view of satisfaction to the travelling public and the greatest good for the greatest number, the route from Rotorua via Waiotapu is unquestionably the one to be adopted."

In 1912 the company again petitioned Parliament and again asked for the issue of an Order in Council empowering them to extend their tramway to Taupo, but as a means of providing the funds necessary for the purpose they asked that provision be made whereby all the Crown and Native lands along the route of or adjacent to the line of the proposed extension should bear a fair proportion of the cost of its construction and of the running-expenses of the line when completed, or, in the alternative, that the company be empowered (as in the 1911 petition) to purchase 200,000 acres of Native land at its then value, with a view to selling it again at its enhanced value when the extension of the tramway to Taupo was completed.

These proposals seem to have developed somewhat while under consideration by the Parliamentary Committee, as on page 102 of the report (see I.—10 of Session II, 1912) certain " amended proposals " appear, which embrace a suggestion that the whole tramway might be purchased by the Crown. The new proposal was : " To purchase the said tramway after it has been completed and extended to Taupo, on a valuation without goodwill, and in no case to exceed the actual cost of construction, or in the alternative the sum of £180,000." The purchase-money was to be paid out of the proceeds of the sale of Crown lands served by the tramway, and the Native lands served by the tramway and acquired by the Crown from the Native owners.

The Parliamentary Committee reported that they did not recommend the purchase of the tramway in the manner and on the terms suggested by the company, nor did they recommend that the company be allowed to purchase 200,000 acres of Native land; but they thought it was desirable that inducements be offered to settlers to occupy land in the vicinity of the tramway and of Lake Taupo, and finally the Committee recommended that the company be authorized to extend its line to Taupo, and that the Government guarantee the cost of such extension up to £50,000.

In 1913 the Order in Council authorizing the extension was duly issued, as already mentioned in the paragraph headed "History of the Undertaking," and in 1913 special legislation was passed empowering the company (on obtaining the consent of a majority of the landowners interested) to levy a contribution of 1s. per acre on all the land considered to be benefited by the proposed extension of the tramway to Taupo. This proposal failed by reason of the opposition of the Native landowners, as already explained in the "History" paragraph, and the company, after some interval, took the matter up again in October, 1918, when the chairman of directors (Mr. F. G. Dalziell) wrote to the Prime Minister making further proposals, which are referred to in the paragraph following.

REASONS FOR SETTING UP THIS COMMISSION.

As has already appeared, the company petitioned Parliament in 1911, and again in 1912, and in 1913 they secured the Order in Council authorizing the construction of the Taupo Extension, but they lacked the means to carry this latter enterprise into effect. At this time (1911-13) the company was not in at all a good position financially. In addressing the Parliamentary Committee in 1912 Sir John Findlay, on behalf of the company, said, "For twelve years we have not paid any dividends on any of the different classes of shares. There is no prospect—not the least prospect—of any ordinary shareholders receiving back their money or any dividends on their money."

The company was therefore wishful of turning its tramway to account if possible, as if it could in any way recoup itself its cost such an advantageous piece of business would very materially improve its position. Hence the "amended proposals" submitted to the Committee of 1912 suggesting a sale of the tramway to the Government. As, however, that Committee did not endorse that proposal, the company raised the question again, but in a different form, in Mr. Dalziell's letter to the Prime Minister of the 15th October, 1918. The new proposal was to set up a Board to acquire the tramway, and to vest in such Board the power to deal with all the Crown and Native lands in the district benefited by the tramway, with power to borrow money, to be used, presumably, in purchasing and extending the tramway; the Board to make arrangements for settling the land along the tramway route or adjacent thereto, and also to provide for the cutting and milling of the timber. Mr. Dalziell asked for the appointment of a Commission of experts to go into the whole question.

That was the position in 1918; but during the last two years matters have altered somewhat. The greatly improved price of timber and the strong demand for it has converted a losing or poorly profitable business into a highly payable one. The company can now see quite a good prospect not only of writing off the cost of its tramway out of profits, but of paying its shareholders reasonable dividends, together with a refund of their capital, when the company has to cease operations owing to all its own and the Crown and private timber that must be brought out over its line being exhausted. The company is not, therefore, so anxious as it was for an early sale of its tramway, but is rather desirous of retaining it in its own hands until no longer required as a means of transporting its timber. The company, however, still asked for the appointment of a Commission of departmental officers to consider the matter and to report to the Government thereon, and hence the appointment of the present Commission.

ABSENCE OF DEFINITE PROPOSALS BY THE COMPANY.

At an early stage of the inquiry the attention of the company's representative was drawn to the absence of any definite proposal setting out the terms on which the company was prepared to sell its tramway. Mr. Dalziell replied that this was due to the company not being aware what the Government desired in the matter. He said that if the Commission would submit to him definite

alternative proposals for the line being taken over he would consider whether it was possible for the company to agree to these proposals, or any of them, and, if so, on what terms. The Commission accordingly submitted to the company's representative nine alternatives on which it was considered desirable to have the views of the company. These alternatives were as under :—

- (1.) The Government to take over the *whole* property and assets of the company and the goodwill of its business, excepting, however, book debts, war bonds (if any), and cash in the bank or on deposit.
- (2.) The Government to take over the tramway up to Mokai, and the land on which it is constructed, and all the locomotives, wagons, and other rolling-stock used in working the same, and also the Order in Council authorizing the extension of the line to Taupo; but not the bush trams, nor the sawmills, plant, land (except the land on which the tramway is constructed), nor the company's offices and sidings at Putaruru. The line to Mokai to be worked as a Government railway, and Government rates to be charged.
- (3.) Same as No. 2 except that Government *would* take over the company's sidings and other property at Putaruru, excepting so much thereof as can conveniently be transferred to new headquarters at Mokai or elsewhere.
- (4.) The Government to take over the tramway up to and including the Oruanui Siding (but not the remainder of the line to Mokai, nor any of the rolling-stock), also the Taupo extension Order in Council. The Government to work the line as far as Oruanui Siding as a Government railway, and Government rates to be charged. The company to have running-rights between Oruanui and Putaruru for its own timber and stores only, and to be subject to regulations to be made by the Government Traffic Manager, and to payment by the company of its due proportion of the maintenance expenses and interest on the amount of Government capital invested in the purchase and improvement of the line.
- (5.) Same as No. 4 but with the omission of all the words after "Government rates to be charged." This would mean that the company would bring its timber and other freights from Mokai to Oruanui Siding, and the Government would transfer it to Government wagons at a reasonable charge and convey it thence to Putaruru, and redeliver it to the company on its own sidings, or convey it at tariff rates to any station to which it may be consigned.
- (6.) The Government to take over the tramway up to the nineteen-mile peg or thereabouts (but not the remainder of the line nor any of the rolling-stock), and to work such portion of the line as a Government railway. The company to have running-rights and to pay its due proportion of maintenance expenses and interest on capital, as in No. 4. The company to enter into a binding covenant to carry all timber and other freight tendered to them for carriage on their line, and to charge for same rates of freight in no case exceeding those mentioned in its Order in Council and in proportion to the mileage carried.
- (7.) Same as No. 6 but with the omission of all the words in the paragraph commencing "The company to have running-rights."
- (8.) Same as No. 7 except that the Government would take over the company's Putaruru property and sidings, as in No. 3.

- (9.) The company to bring the line up to the nineteen-mile peg to such a standard that the Railway Department will allow its rolling-stock (other than locomotives) to be run over it, and to enter into a binding covenant to run all the trains reasonably necessary to carry all the timber, live-stock, or other traffic that may be tendered to them for carriage on this or any other section of its tramway, and to charge freight thereon at rates in no case exceeding those mentioned in its Order in Council in proportion to the mileage carried.

To these interrogations Mr. Dalziell, through Sir John Findlay, made the following replies:—

- (1.) The company would accept this offer. Its price would be the amount of its capital subscribed in cash plus interest at preference-share rates—an average of $6\frac{1}{2}$ per cent. The total of capital and interest to date is about £316,000.
- (2.) The company would agree to this, the price to be the book value of the line plus valuation of plant.
- (3.) The company would not sell its Putaruru property while it retains its timber business.
- (4.) The company would hand over the line to Oruanui with extension rights at book value, but would not pay a proportion of running and interest charges in addition to Government rates.
- (5.) The company would agree to this, the price to be the book value of what is taken over.
- (6) and (7.) The company would be willing to hand over the tramway to 19 miles at a fair price if allowed running-rights. What is a fair price can only be determined by experts after full consideration of all the circumstances. But in this event it could not continue to run the remainder of the line under the Order in Council. Its manager suggests it would be cheaper for the Railway Department to subsidize the company's line by arranging for the carrying of goods at through rates, the difference between through rates and actual costs to be made up by the Department. He suggests further that the Government should load the Crown and Native lands and timber with this contribution, since they get the main benefit from the railway and the present settlers' settlement enterprise, our company merely getting its capital and interest without further profits.
- (8.) The company could not hand over its Putaruru property while it holds its timber business.
- (9.) The company would favourably consider the question of bringing its line to the nineteen-mile peg up to a standard sufficient for the transport of Government rolling-stock, but if this involves the purchase of much material it suggests that this work should be postponed in the hope that costs of material may fall. It could not, however, provide for live-stock or other goods than it now carries on the balance of the line, and it cannot give an undertaking to carry timber in competition with its own or on terms that do not provide for a fair contribution to the railway sinking fund. If it is to enter into a binding contract to carry goods it can only do so on terms that will fully ensure it against risk. It suggests that the terms of working arrangement for the running of the line by the company can only be arrived at by a detailed discussion between Government experts and the company's officers. It is, however, willing to discuss any proposals for such an arrangement.

The Commission has very carefully considered these replies, which now form the basis of the company's proposals for a sale of its undertaking, and have carefully borne them in mind in framing the recommendation following.

ORDERS IN COUNCIL : DO THEY ENTAIL DEFINITE OBLIGATIONS ON THE
COMPANY ?

During our investigations the chairman of directors of the company advanced the view that the company's Orders in Council do not entail any really binding obligations upon the company. Mr. Dalziell contended that the Orders in Council are merely permissive, and confer upon the company the right to do certain things, but that in the event of the company not wishing to do those things they are at liberty to hand the Order back to Your Excellency and to thereby relieve themselves of the burden of giving effect to its provisions. This view was an entirely new one to the Commissioners, and we expressed our surprise at it, and asked the company's representative to have the matter very fully considered, and to advise us whether this view constituted the matured and deliberate conviction of the company. Mr. Dalziell promised to submit a joint opinion on the subject by Mr. C. P. Skerrett, K.C., and Sir John Findlay, K.C. This he ultimately did, and a copy of the opinion is submitted to Your Excellency herewith as an appendix to this report.

It will be observed that the opinion substantially supports Mr. Dalziell's views. Probably Your Excellency will consider it advisable to submit the matter for the opinion of the Crown Law Officers. It seems to your Commissioners a rather extraordinary view that an arrangement duly arrived at between the company and the Government and committed to writing and approved in a formal Order in Council can be set aside and rendered entirely ineffectual at the instance of one party only.

ORDER OF REFERENCE NO. 1.—WOULD THE ACQUISITION OF THE COMPANY'S
TRAMWAY BE IN THE BEST INTERESTS OF THE STATE ?

The character of the company's tramways and its present condition are briefly described in the paragraph headed "Description of Tramway." The tramway is not at all similar to the standard type of railway-construction in New Zealand, and cannot be made so except by entirely reconstructing many miles of it and entirely relaying the whole line with heavier rails. The rolling-stock at present in use on the line is not suitable for running on the Government railways, and would therefore have to be broken up or sold, if a buyer could be found for it.

The line could doubtless be used as a "light line" and could continue to be worked very much as it is worked now, but such a line and such a method of working would be quite foreign to the present New Zealand railway system, and could not, we think, be advantageously undertaken by the New Zealand Railways Department. Moreover, the taking-over of the line by the Government would at once give rise to an agitation to have it brought up to Government standard, which cannot be done except at enormous cost, and which should certainly not be attempted.

The great bulk of the evidence we took was entirely against the proposal that the Government should take over and work the line. It is true that some of the settlers advocated this course, but these gentlemen are not expert railway men and cannot be expected to fully appreciate the grounds on which the railway experts base their views, and they are, of course, interested parties. The expert officials, both the Government's and the company's, are unanimous in condemning the proposal to convert the line to Government standard, and without such conversion the Railway Department would not care to undertake to work it.

We took the evidence of the General Manager of Railways, the Chief Railway Engineer, the late Engineer-in-Chief and Under-Secretary of the Public Works Department (the present Engineer-in-Chief and Under-Secretary being a member of the Commission), the chairman of directors of the company, and the company's general manager, and, as already stated, all unanimously condemned the proposal.

The company is also not now desirous of parting with the tramway at present. Their timber business is in a very flourishing condition just now, and seems likely to continue so for quite an indefinite period, and the tramway is required as an adjunct to this business. The company estimates that it will take about sixteen years to cut out its timber, and there are other forests in addition to the company's bushes the timber from which can more easily be brought out by the company's tramway than by any other means. If arrangements are made to cut and mill this timber, and to send it to market by means of the company's tramway, the "life" of the line would either be extended by many years—up to forty-eight years, they contend—or the annual volume of the traffic on the line would be greatly increased, thus augmenting the company's receipts and profits. The company would prefer, therefore, to retain the tramway for the present, but at the same time it desires to be advised now what the ultimate fate of its line is to be.

Upon a very full consideration of all the facts of the case your Commissioners are strongly of opinion that the acquisition by the Crown of the tramway constructed by the company from Putaruru to Mokai would *not* be in the best interests of the State.

When, however, the company no longer requires the tramway for its own purposes, and notifies the Government accordingly, we recommend that a Local Board be set up under the Local Railways or other Act to acquire the line as far as the Oruanui Siding, or the Oruanui Township, or to Taupo, if it is extended to either of those points. The price to be either the then valuation or the then book value, whichever is the smaller sum, but with an abatement at the rate of 1s. per 100 ft. for all timber brought out over the line subsequent to the date of the agreement to be entered into with the company in pursuance of this recommendation, if adopted by the Government. Nothing to be allowed for goodwill or for interest on capital invested.

As both the company's bush and its tramway are "wasting assets"—the former will entirely disappear, and the latter may be useless, and of practically no value, when the timber has been cut out—it is very desirable that a sinking or amortization fund should be established to reimburse to the company's shareholders the capital value of these assets. Indeed, such a fund should have been established long ago, and no further time should be lost in setting it on foot; in fact, all timbers conveyed over the line, regardless of ownership, should, in fairness, make a contribution to the amortization fund.

If the sale of the tramway is postponed for a considerable period it is only reasonable that a reduced price should be paid for it, hence the above recommendation. The loss sustained by the company in the purchase price would be made up out of its amortization fund.

ORDER OF REFERENCE NO. 2.—WOULD IT BE WISE TO ACQUIRE A PART OF THE LINE ONLY?

What we have already stated under the last heading practically answers this question.

We do not advise the Government to take over any portion of the line; but when the company intimates that it does not require the tramway any longer we advise the setting-up of a Board to acquire the portion of it between Putaruru and Oruanui Siding, or Oruanui Township, or even to Taupo if the line is extended to there, but we do not advise taking over the short piece of line between Oruanui Siding and Mokai, as that part of the line will, when the extension is undertaken, be merely a branch line to serve the company's saw-mills.

We recommend, however, that the company be urged, at its own expense, to have the Putaruru-Kopokorahi Section of its line, or at least up to the nineteen-mile peg, brought up to such a standard as will admit of Government wagons being run over it.

ORDER OF REFERENCE No. 3.—AS TO CONVERTING THE TRAMWAY TO A STANDARD RAILWAY.

We have already stated under a former heading that the tramway is not at all similar to the New Zealand standard-type railway, and it cannot be brought into such a condition as would render it suitable for incorporation into the general railway system of New Zealand except at enormous cost. This cost has been estimated for us by the Chief Engineer of the New Zealand Working Railways at approximately £600,000, as under :—

ESTIMATED COST OF BRINGING THE TRAMWAY TO NEW ZEALAND GOVERNMENT STANDARD FOR SECONDARY LINES.

Cuttings to be minimum width of 15 ft. ; embankments to be minimum width of 12 ft. Curves, minimum radius, 5 chains. Gradients, ruling gradient 1 in 35, eased for curvature. Bridges to be suitable strength for all railway wagon stock. Rails to be 55 lb. per yard. Structures to standard clearances. Stations to New Zealand Railways standards. Dwellinghouses for railway staff.

Formation, Track, and Structures.

Putaruru to 19 m. (near Kopokorahi) :—

(a.) Cuttings and embankments—	£	£
Widening cuttings and embankments, 5 m. to 19 m. ...	6,500	
Relocation, 6 m. to 7 m., and near 10 m., at £5,000 ...	7,500	
	—	14,000
(b.) Bridges—	£	
470 ft. at £10 ...	4,700	
Culverts ...	500	
	—	5,200
(c.) Track : New track (55 lb. rails) at £3,100 per mile, less value of existing rails, &c., £500 per mile : 19 miles at £2,600 (say) ...		50,000
(d.) Clearances : Altering existing structures to standard clearances ...		100
(e.) Stations—	£	
Standard flag stations, five at £1,200 ...	6,000	
Roading ...	1,000	
	—	7,000
(f.) Water-services ...		500
(g.) Fencing—	£	
Fences, eleven miles at £240 ...	2,640	
Cattle-stops, twenty at £30... ..	600	
	—	3,240
(h.) Dwellinghouses : Houses for staff, eight at £800 ...		6,400
		86,440
Contingencies ...		8,560
		95,000

19 m. to 46 $\frac{3}{4}$ m. (near Oruanui) :—

New construction and location, 28 miles at £16,000 ...	£	448,000
Contingencies ...		22,000
		470,000

Total, Putaruru to Oruanui ... 565,000

Rolling-stock for Whole Line to Taupo.

Engines, three at £10,000 ...	£	30,000
Passenger-cars, four at £1,300 ...		5,200
Wagons, twenty at £400, twenty at £600 ...		20,000
Vans, two at £700 ...		1,400
		56,600
Contingencies ...		3,400
Proportion of this for Putaruru-Oruanui Section (say) ...		35,000
Gross total ...		£600,000

The cost of altering the existing railway from 46 $\frac{3}{4}$ miles (the proposed junction of an extension to Taupo) to Mokai has not been included, as this portion of the railway would probably be worked as a branch for the purposes of the Timber Company.

ORDER OF REFERENCE NO. 4.—GOVERNMENT REGULATION OF CHARGES ON
TRAMWAY.

The rates of freight and the passenger-fares to be charged on the tramway are fixed by the Order in Council authorizing its construction, and such Order in Council rates are doubtless generally adhered to, but one case has been brought under our notice where the company has demanded a rate in excess of the Order in Council rate, and another case where the company declined to carry timber at all for a mill which the company considered was competing or might compete with its own mill.

One of the reasons for the company proposing to abandon its Order in Council is that it could then charge whatever rates of freight it pleases. We question very much the validity of this contention, however, as if the Order in Council is handed in and becomes of no effect the tramway will apparently become a private tramway, and such tramway can only be used in connection with and for the purposes of the business of the owners thereof, and "such business shall not be the carriage of passengers or goods for hire" (see Tramways Act, 1908, section 16).

We think it quite advisable that the Crown should regulate, as far as possible, the scale of charges to be enforced on the tramway, and also that an arrangement should be made with the company as to the Government controlling to some extent the working of the tramway. This will be specially desirable, and even necessary, in the future if large quantities of Crown, Native, and private timber are to be sent to market over this tramway. Such an arrangement can be arrived at only by mutual agreement, however, unless the company applies for the issue of a new Order in Council. In the latter case provision can doubtless be made as above suggested, provided that a form of Order in Council can be devised that the company cannot abandon at pleasure.

If a new Order in Council is issued fixing rates to be charged on the tramway, provision should be made for all artificial manures, including lime, being carried at Class 2 rates, or even less.

The settlers in the Tokoroa district—viz., between Putaruru and Campbelltown—and the very few settlers who are located beyond that point are of opinion that the rates of freight charged on the line are excessive, and the main reason for the demand to have the tramway taken over by the Government is really for the purpose of having the Government scale of rates (and particularly the through rates) applied to the line.

We interrogated the company's officials very closely on this matter, but they are strongly of opinion that no reductions in rates are possible unless a considerable loss is to be incurred. They insisted over and over again that even at the present rates the settlers' traffic is unprofitable, and the general manager of the company has recommended his board of directors to give up such traffic, and it is this recommendation which is at the root of the company's proposal to surrender its Order in Council.

In view of these strongly expressed opinions the Commission is unable to advise any wholesale reductions in rates, as desired by the settlers, but in any revision of rates that may take place we advise that manures (including lime) be dealt with as indicated above.

The Commission is unable to see that the settlers have any very grave ground of complaint regarding the present traffic rates, which are not unduly high for a privately owned branch line, possessing grades and curves such as this one does, and worked as this one has to be.

It is an axiom amongst railwaymen that country within fifteen miles of a railway is served by that railway, and judged by that standard practically all the settlers are served by the Government railway at Putaruru. In other words, the settlers, without the company's tramway at all, are quite as well off as thousands of other settlers in New Zealand, and if the company's tramway serves them at all they are that much better off than the other settlers referred to.

We submit that it is not fair to the owners of a private sawmill line like this to compare its rates for the carriage of goods with the Government railway rates. The comparison should rather be with what it would cost the settlers to convey their goods by any other available means than by sending them by the tramway.

As regards timber owned by the Crown or by any private person or Corporation carried over the line, we recommend that the company be allowed to charge, in addition to its authorized tariff rate, 1s. per 100 superficial feet on all Crown timber carried, and 2s. per 100 superficial feet on all other timber carried. It is only reasonable that the Crown and private timber brought out by the line should make some contribution towards the cost of the tramway, and especially in this case, considering that the tramway must be regarded as a wasting asset, and we think that the amounts above suggested are fair and reasonable under the circumstances.

With the exceptions above mentioned we do not think that any alterations in the company's authorized scale of rates and charges are required, but the company should enter into a binding contract to ensure the tramway being worked in such a manner as to meet the reasonable requirements of the settlers and timber-owners—the Minister of Railways to be referee in cases of dispute—and to charge, except for timber, rates of freight not exceeding those set out in its Orders in Council.

Passenger Traffic on Tramway.

The company's Order in Council provides that the company may use its tramway for carrying goods, and may also, after the provisions of Part VIII of the Public Works Act have been complied with, use the same for the purpose of carrying passengers, but in that case suitable vehicles for the conveyance of passengers shall be provided, but they shall not be used until they have been inspected and passed as safe and fit for traffic by an engineer to be appointed by the Minister of Public Works.

The company has never applied for any authority to carry passengers on its tramway, and no such authority has been issued, but passengers seem to be regularly carried, and a return of the revenue earned by the tramway put in by the company's general manager shows revenue from passenger traffic as under: 1915, £322; 1916, £387; 1917, £347; 1918, £401; 1919, £377; 1920, £370.

It would doubtless be difficult for the company to avoid carrying some passengers, even if only its own employees and their wives and families, as there is hardly any other practicable way for the residents of Mokai to reach Putaruru and the Government railway. The stopping of such traffic would entail considerable hardship on these residents and others; but the company should doubtless have complied with the provisions of the law on the subject and also of its Orders in Council, and the Commission considers it desirable to draw Your Excellency's attention to the fact that this has not been done.

ORDER OF REFERENCE NO. 5.—PROJECTED EXTENSION OF THE TRAMWAY.

There would be no advantage whatever to the State in extending the tramway beyond Mokai, but an extension from Oruanui Siding (about four miles from Mokai) to Oruanui Township, as contemplated by the company, would be advantageous, as such an extension would bring Wairakei within seven miles of the tramway, and Taupo within about ten miles. The chairman of the company stated in evidence that the company proposes to carry out this extension, in terms of the existing Order in Council.

A further extension of the tramway to Taupo would also be advantageous, particularly to the people of Wairakei and Taupo, and such an extension is already authorized by Order in Council dated 13th October, 1913; but we understand that the company has no present intention of constructing it unless it receives some large measure of assistance, and we regret that we cannot see our way to recommend that any such assistance should be given by the Crown. We consider the construction of a Government railway to Taupo is inevitable sooner or later, and that it would therefore be unwise for the Crown to subsidize any competing line.

ORDER OF REFERENCE No. 6.—AS TO ACQUIRING THE COMPANY'S TIMBER RIGHTS.

The timber rights of the company and its tramway can be best worked under one management. If, therefore, the company retains the ownership of the tramway for a lengthy period it would be quite desirable for it to also retain and work its timber rights. Moreover, at the market rates for timber now ruling the price that would doubtless be demanded for a surrender of these timber rights would probably amount to a very large sum, which we do not think the Government would be justified in paying, in view of the large areas of growing timber which the Crown already holds in the district, the still larger areas which the Natives own and which it is desirable the Crown should acquire, and the very large and increasing areas of planted Crown forests in the Rotorua-Waiotapu district which will be opened up by a railway-line between Rotorua and Taupo, should such a railway be eventually constructed.

ORDER OF REFERENCE No. 7.—AS TO ACQUIRING TIMBER RIGHTS OR LANDS OTHER THAN THOSE BELONGING TO THE COMPANY.

We think it desirable that the Native-owned timber-bearing land in the vicinity of the company's tramway, or of the projected extension of same to Oruanui Township, or lying between that point and Lake Taupo, or adjacent to the shores of that lake, should be acquired by the Crown in the immediate future. The construction of the projected extension of the company's tramway, and especially the extension of the Government railway to Taupo, would largely enhance the value of this land, so that, in order to obtain the fullest possible advantage from the purchase, it should be effected as soon as possible, and before the expected enhancement actually takes place.

ORDER OF REFERENCE No. 8.—AS TO DEVELOPING THE CROWN AND NATIVE LANDS SERVED BY THE TRAMWAY.

There is a large area of undeveloped pumice land—Crown, Native, and private—served by the tramway and its proposed and authorized extensions, much of which is capable of profitable development. It varies from flat and easy undulating country to steep hills interspersed by gullies, and, with the exception of the bush-clad areas, which are mostly the hilltops, there is very little vegetation upon it but stunted manuka and fern. Excepting the timber-bearing land, the whole area is practically valueless in its undeveloped state, but so far as the ploughable portion is concerned—which is perhaps 50 per cent. of the whole area—this can be converted into useful pasture providing that the manures which are absolutely requisite for bringing the land into production, and for its annual or biennial top-dressing, can be delivered on the farms at a reasonable cost, for without cheap manures and transit at a moderate cost these lands can never be farmed profitably.

The hill portions and the gullies, excepting the timber-bearing areas, are valueless for any other purpose than for the growth of timber, and, judging from the areas already planted, there is little doubt but that, if these lands were planted with suitable trees, in the years to come they would be a source of revenue to the Crown and country. The timber-bearing areas, which are certainly the most valuable portion of the whole, can, after the milling-timber has been removed, be converted into fair grazing-land by felling, burning, and grassing.

Judging from the results obtained at Putaruru and Tokoroa, the best course to adopt with the arable lands would be to cultivate, consolidate the soil, and manure heavily. Using these methods, the better class of pumice lands have been converted into useful farming and grazing country, capable of being used for dairy farming, the fattening of stock, and the growth of root crops, more especially swedes and turnips. Clovers and cow-grass grow exceedingly well, and there is ample feed during nine months of the year, but it will probably be necessary to provide hay and root crops to feed the stock during the winter months.

Much of the undeveloped land owned by private people and companies and adjacent to the tramway is held for what seem to us to be fictitious values. The

bringing into operation of section 11 of the Land Laws Amendment Act, 1919, under which second- and third-class Crown lands may be offered for selection without payment, will doubtless exercise a correcting influence in this respect.

The first step towards such development will be to acquire the Native land. When that has been done the marketable timber on the land can be cut and milled, either under arrangement with the company or by letting the cutting-rights to private persons on a royalty basis, or it can be reserved for the present pending the construction of a Government railway to Taupo, and could then be handed over to the Forestry or other Government Department for milling for the Government's own purposes.

The land that is not timber-bearing, and the timber-bearing land when cleared, can be offered for selection as soon as there is any demand for settlement land in the district, and such a demand would, in our opinion, follow the opening of a Government railway to Taupo and the milling of all the Government timber in the area served by the line or adjacent to the lake.

ORDER OF REFERENCE NO. 9.—AS TO OTHER RIGHTS HELD BY THE COMPANY.

We have inquired as to what other rights are held by the company, and whether any special advantage would accrue to the State by taking them over, and find that such rights are not at all numerous. The company has timber-yards at Auckland, and a private siding and other rights at Putaruru; but unless the Crown takes over the entire business of the company, which we do not recommend, the company will require to retain these rights, and very little, if any, advantage to the Crown would result from taking them over. We therefore do not recommend that such rights should be acquired.

ORDER OF REFERENCE NO. 10.—DEVELOPMENT OF SETTLEMENT WITHIN THE AREA.

The area of country served by the tramway and the proposed or authorized extensions thereof is very wide indeed. It begins at Putaruru and extends thence to Taupo, and (using the lake for water carriage) embraces all the immense area surrounding the lake and extending to the eastward thereof as far as Runanga, or even to Tarawera, and on the west as far as the watershed between Lake Taupo and the North Island Main Trunk Railway. This large area contains from one and a half to two million acres of land, only a very small portion of which is at present developed on any modern scientific principles. The great bulk of it is lying waste and barren, and it undoubtedly constitutes the largest area of undeveloped waste land in the Dominion, and calls loudly for some special action to be taken to bring it into productivity.

The experiments already made with pumice soils clearly show that, given proper tillage and with the use of appropriate manures, the land is capable of satisfactory development. No doubt the members of the Commission saw the land at a very good time—namely, at the end of an exceptionally wet spring—but some of the grass-paddocks we examined near Putaruru, and between Putaruru and Tokoroa, also around Tokoroa and Campbelltown, certainly impressed us favourably.

Instances of the carrying-capacity of the land when root crops were being eaten off were brought under our notice, and seemed to be almost beyond belief, but the accuracy of the figures given is vouched for by individual settlers and also by the Settlers' Association. Some of these instances may be quoted thus:—

An area of 300 acres in roots is said to have carried 1,250 head of cattle from May to September last, and an area of 160 acres in turnips wintered nearly 2,000 sheep, with a run-off on grass in each case.

An area of 500 acres, broken up for the first time last year and sown with turnips, then broken up again and sown with grass (10 lb. rye-grass, 10 lb. cow-grass, and 2 lb. white clover), was carrying at the time of our visit 600 sheep and a few cattle. This land prior to breaking up had carried nothing but stunted manuka and a little tussock.

A farm of 163 acres in grass carried 130 head of cattle last summer, of which fifty were milking-cows. When we were there last month it was carrying sixty dairy cows in milk, forty heifers, and four horses. The average return per milking-cow last year was £28, and the total amount of butter-fat produced during the season was 16,820 lb.

With instances like these before us we are forced to the conclusion that the suitability of these pumice lands for farming purposes is beyond question. The pumice itself seems to contain most of the elements of fertility, and those lacking can be supplied by the use of suitable artificial manures.

The land that is ploughable seems to be well adapted for cultivation, and the land that cannot be ploughed is admirably adapted for forest-tree planting. Thousands of acres have been planted already, and the trees are doing well and promise a good return on the timber reaching maturity. Further information on this head is supplied under the heading of "Planted State Forests."

The one common need of all this country is suitable manures, and manures cannot be obtained at a sufficiently low cost without a railway. The company's tramway helps the farmers a good deal already, and will be of considerable further assistance when extended to Oruanui, but the needs of the district will not be fully met until the Government railway is extended to Taupo.

BUSH AVAILABLE FOR MILLING.

The milling-bush in the vicinity of Oruanui and which will be served by the company's tramway consists of 338,000,000 superficial feet, log measurement, which when converted into sawn timber will produce 225,000,000 superficial feet, of a net value at current prices on Government trucks at Putaruru of £2,500,000. The timber consists of totara, matai, and rimu (totara predominating), and the yield per acre (log measurement) varies from 20,000 to 60,000 superficial feet. There is in addition, on the north bank of the Waikato River, and which can only be served by the company's tramway from Ongaroto Siding, a large area of milling-bush, principally rimu, which will yield on a safe estimate 30,000,000 superficial feet of sawn timber, of a net value at current prices on Government trucks at Putaruru of £330,000. In addition to this there will be considerable traffic in the haulage of posts and firewood.

Although the company has been cutting timber from its bushes for the last fifteen years, at the rate of about 7,000,000 superficial feet per annum, it is estimated that there is still about 140,000,000 yet to cut (log measurement). If, therefore, no timber other than its own is sent over the tramway it will have (allowing one-third for waste) full work for its line, on its present method and scale of working, for at least thirteen years.

In addition to the company's own timber there is in the area served by the tramway, and practically interlocked with the company's timber (*i.e.*, cannot conveniently be worked except in conjunction with the company's timber, which surrounds a part of it on three sides) an area of Crown bush estimated to contain about 14,000,000 superficial feet (log measurement) of timber; and there are other bushes owned either by Government, private persons, or Natives, containing approximately 184,000,000 feet. Again allowing one-third for waste, there would still remain 132,000,000 ft. of timber that will probably have to be marketed by means of the company's tramway. This at the present rate of output would keep the tramway going for another nineteen years, or a total period of thirty-two years; or the output might be doubled, and two trains run each way per diem, instead of only one as at present, and there would still be ample traffic for the line for, say, sixteen years.

As regards the Crown bush interlocked with the company's bush, there would be at least three alternative methods open for working it: (1) to arrange with the company to cut and mill the timber and to deliver it on railway-sidings at Putaruru at a rate to be agreed upon; (2) to sell to the company on a royalty-on-output basis, or at a price to be agreed upon; (3) to establish a Government mill to cut the timber and forward it by the company's tramway at tariff rates plus 1s., or otherwise dispose of it.

PLANTED STATE FORESTS.

There is in the Thermal Springs District an area of 25,000 acres of planted State forests, and during the next five to seven years it is proposed to add another 10,000 acres. Some of these plantations are over twenty years old (they were commenced in 1898), and as the timbers planted reach maturity in

about forty or fifty years, it follows that in about twenty years from now a portion of this forest will be reaching maturity every year. The trees require thinning out well before this period, however, so as to leave the remaining trees sufficient space in which to develop. This thinning process has begun already, and must of course go on continuously as long as planting is proceeded with.

The Director of Forests gave evidence before the Commission and stated that by 1930 the yield from the Rotorua group of plantations would amount to from 50 to 125 cubic feet of timber per acre per annum. If we take it at 100 ft. per acre, multiply this by 3,500 (the acreage planted), and allow one-third for waste, there will be an export available equal to 28,000,000 ft. per annum, or four times the present annual export of timber from the Taupo Totara Timber Company's mill and tramway.

The thinning-out process must be gone on with, we understand, whether any market can be found for the thinnings or not, but unless some means of cheap transport is provided it will be impossible to find a market for them and they will simply have to be burnt. If transport can be provided they can be sold for mine-props and for other purposes, and also for firewood.

Mr. R. W. Holmes, the late Engineer-in-Chief and Under-Secretary for Public Works, in a report dated 28th April last, on the best route for connecting Taupo by rail with the New Zealand railway system, which has been brought under our notice, states: "There is another point that must not be lost sight of in considering this question, and that is that the Forestry Department has very large plantations in the vicinity of Waiotapu, which is about eighteen miles along the route Rotorua to Taupo. Irrespective of what is done in the way of giving Taupo railway connection, it will be absolutely necessary that a railway be constructed before many years elapse to Waiotapu, to deal with the output from the State forests. The State forest will, when sufficiently developed, provide constant traffic for a railway over this distance. The land is cheap here, trees seem to do well, and it is only a matter of increasing the plantations until there will be as much timber coming out as the railway can comfortably handle, and this will continue in perpetuity." The Director of Forests was asked if he concurred in Mr. Holmes's views, and replied "Absolutely."

It would seem, therefore, that there is urgent necessity, in order to avoid great national waste, for an extension of the Rotorua Government railway to Waiotapu with as little delay as possible; and, bearing this in mind, and having in view the probability that the Government will give effect, sooner or later, to the strong recommendations of the late Engineer-in-Chief and the Director of Forests, your Commissioners venture to express the opinion that the line to connect Taupo with the Government railway system should be an extension of the existing Government railway to Rotorua.

SUMMARY OF FINDINGS.

For the reasons set forth in the foregoing portion of this report we return the following answers to the several interrogations addressed to us in Your Excellency's Commission:—

1. We think the acquisition by the Crown of the Company's tramway would *not* be in the best interests of the State.

2. We do not advise the purchase of any part of the line.

3. The cost of altering the tramway to a standard Government railway (secondary line only) would amount to about £600,000, but we do not recommend the expenditure.

4. Government regulation of charges should be maintained as far as possible, but if the company, as it contends, has the right to surrender its Orders in Council, this is practicable only by mutual agreement.

5. There would be no advantage whatever in extending the line beyond Mokai, but an extension from Oruanui Siding to Oruanui Township, as contemplated by the company, would be advantageous, as such an extension would bring Wairakei within seven miles of the tramway and Taupo within ten miles, and also enable the whole of the millable timber in the locality to be profitably

utilized. The extension, if undertaken, should be carried out by the company in terms of the Order in Council which it already holds authorizing the same. No further extension is recommended.

6. We do not think it would be in the public interest for the existing timber rights of the company to be acquired by the Crown at the prices that would be likely to be asked for them just now.

7. We think it advisable that the Native-owned timber-bearing land in the vicinity of the company's tramway, or of the projected extension of same to Oruanui Township, or lying between that point and Taupo, or adjacent to the shores of the lake, should be acquired by the Crown as soon as possible.

8. There is a large area of land—Crown, Native, and private—served by the tramway and its proposed and authorized extensions which is capable of profitable development. The first step to be taken would be to acquire the Native title. When that has been done the marketable timber on the land can either be sold on a royalty basis or it can be reserved for the present pending the construction of a Government railway to Taupo, and could then be handed over to the Forestry or other Government Department for milling for Government purposes. The land that is not timber-bearing, and the timber-bearing land when cleared, could be opened for selection as soon as there is any demand for settlement land in the district.

9. We do not advise the acquisition of any of the remaining rights of the company at the present time.

10. This opens up a very wide question on which a great deal might be said. We have stated that an immense territory is lying waste and undeveloped at present, and we think this calls for a remedy. The most potent remedial measures that can be adopted are :—

- (1.) For the Crown to acquire the Native land :
- (2.) To open up the area by means of a Government railway (the company's tramway and its proposed extension to Oruanui will assist to a certain extent, but it can never serve the area as a standard Government railway would do) :
- (3.) To mill all the indigenous timber :
- (4.) To largely increase and accelerate the planting of exotic timbers, and to continue planting in perpetuity so as to make the saw-milling industry permanent even after all the indigenous timbers have been cut out :
- (5.) To dispose of the available land on conditions that will ensure its being utilized to the best advantage.

UNANIMOUS FINDINGS.

We are pleased to be able to report to Your Excellency that all the findings in this report were arrived at unanimously.

CONCLUSION.

In concluding its report the Commission wishes to express its appreciation of the manner in which the several witnesses who appeared before it gave their testimony, particularly the several Government officials and the officers of the company, who were all most anxious to afford the Commission the fullest assistance in their power, and to impart the most complete information, so as to enable us to reach a just and equitable conclusion. We have also to thank both Mr. E. E. Vaile and Sir John Findlay for their carefully prepared and illuminating addresses.

Your Excellency's Commission is returned herewith.

We have the honour to be,
Your Excellency's humble and obedient servants,

H. J. H. BLOW.
F. W. FURKERT.
H. BUXTON.
G. H. M. MCCLURE.

Wellington, New Zealand, 15th December, 1920.

APPENDICES TO REPORT.

The following statements and returns obtained by the Commission in the course of its inquiry are appended hereto for Your Excellency's information :—

- (1.) Letter from Mr. Dalziel, dated 15th October, 1918, to the Prime Minister, urging the appointment of a Commission of experts to go into the question of the development of the Taupo district.
- (2.) Summary of facts, dated 30th June, 1920, prepared by Mr. Dalziel, regarding Taupo development.
- (3.) Opinion of C. P. Skerrett, K.C., and Sir John Findlay, K.C., *re* abandonment of Orders in Council under the Tramways Act, 1908.
- (4.) Book value of company's tramway and appurtenances.
- (5.) Tramway revenue on freight other than the company's timber and goods.
- (6.) Working-expenses of tramway.
- (7.) Tramway revenue and expenses per train-mile.
- (8.) Return of bush lands some distance from, but which will be served by, the tramway on its extension to Taupo. (For plan see Appendix 11.)
- (9.) Return of timber lands interlocked with the Taupo Totara Timber Company's bushes.
- (10.) Report on tramway by the Chief Engineer of the Working Railways Department, with estimate of cost of converting it to a Government standard railway.
- (11.) Map showing the tramway, the lands served by same, and the ownership of the several areas.

No. 1.

Letter from Mr. DALZIELL to the PRIME MINISTER.

The Taupo Totara Timber Company (Limited).

246A The Terrace, Wellington, 15th October, 1918.

SIR,

I am instructed by the board of the above company to urge upon you that the development of the Taupo district is a matter requiring immediate attention.

The necessity for urgency arises from the fact that settlement has progressed along the company's railway to such an extent that the full carrying-capacity of the company's present rolling-stock has been reached, and the plans of the settlers require the provision of further rolling-stock as well as additional sidings. In addition to this, speculators are coming into the district and endeavouring to purchase Native timbers which can only be marketed over the company's line, and if this movement is permitted the company will be called upon to provide considerable additional rolling-stock, and carry a great amount of traffic at a running-cost which, owing to the war, is very much greater than was contemplated when the company's traffic rates were fixed. There is also the further difficulty that the company has just started operations in a new totara bush, one-half of which is held by the Crown and is to be reserved, my company is informed, for Government purposes. The company's portion of the block in a great measure surrounds the Crown area, and it is obvious both that the whole bush could be most profitably worked as one block, and also that the cutting of the company's area will necessarily render the Crown area much more liable to destruction by fire than it is at the present time. These and other matters require the early attention of the different Government Departments whose interests are involved.

Long experience of operations in this country has convinced my board that the needs of settlement require that the company's railway and the whole of the timber in the district should be brought under one control, and that land-settlement should be vigorously promoted. This is the only course by which the railway traffic can be adjusted in the general interests of settlement. My board does not see how otherwise the owners of the railway can be justified in embarking capital in the development of the traffic.

The working-expenses of the railway—that is to say, the running-cost, exclusive of interest on capital—amount to about £7,000 per annum, and the receipts from goods traffic, other than the company's own traffic, amount to £2,400 per annum. There is in addition the following traffic or revenue accruing to the line at present: Passenger traffic (mainly to company's works), £400; mail contract, £112 10s.; company's goods (if charged at Order in Council rates), £340; company's timber (if charged at Order in Council rates), £10,350: a total revenue of £13,602 10s.

The company's interests in this district consist solely of this railway, some timber leases of Native land from which nearly the whole of the timber has now been cut, and a freehold area of not more than 45,000 acres of land on which the balance of the company's timber is growing. It has no interest, direct or indirect, in any other property of any kind affected by its railway.

There is in the district a total estimated quantity (sawn measurement) of 326,000,000 ft. of totara, matai, and rimu timber, of which 85,000,000 is the company's, 93,000,000 Crown, and 148,000,000 Native; and the land which will be available for development by the extension of the railway is about 1,000,000 acres, nearly the whole of which is Crown or Native land, and the greater part of which has been classified by Government experts as ploughable. Most of this land is equal in quality to the area on the company's railway now being successfully farmed, and a great portion of it is essentially better. The hydro-electric-power sources of Aratiatia and Huka also lie upon the proposed extension of the company's railway, which crosses the Waikato River close to them, and it is by this line that the transport necessary for the development of these powers will naturally be conducted. The Wairakei and Taupo thermal districts also lie upon this extension.

An extension of twenty-three miles of the company's railway to Lake Taupo would, in effect, provide the equivalent of ninety-three miles of line, because the whole of the circumference of Lake Taupo, a distance of seventy miles, could then be served by steamer. The pre-war estimate of the cost of this work was £50,000.

The book value of the company's railway is £126,000, which is considerably less than the actual cost, because a considerable amount of straightening the line and widening the curves was charged to revenue; and the company is prepared to put this railway into any reasonable scheme of development, either at this price or at its present value for settlement purposes, whichever is the smaller sum—rolling-stock and plant to be taken at a valuation.

This company has for a period of fifteen years employed an average of 170 men. It has paid in wages about £520,000; in freights on the Government railways, £130,000; in the purchase of machinery and goods, and rates, taxes, interest, &c., £365,000: a total of £1,017,000. This has all been earned and distributed by the shareholders of this company, who have never received any profits or interest upon, or return of, their capital. There can therefore be no just reason why these shareholders should not be paid for their railway its value for settlement purposes if the Government desire to have it for the settlement of this district.

In these circumstances I am instructed to urge—

- (1.) That a commission of experts be appointed immediately to go into the whole question of the development of this district.
- (2.) That legislative power should be taken by the Government during the coming session enabling the Crown and Native lands, with the timbers thereon, to be put under the control of a Board or Boards, either European or Native and European, and dealt with in a comprehensive way, with power also to the Government to raise moneys upon the security of these lands both for European and Native settlement purposes.
- (3.) That consideration should be given to the question of establishing a soldier settlement or settlements, and a Native settlement or settlements on European lines, in this district, under the supervision of settlers who are successfully farming this class of country, who would, my company is led to believe, be glad to undertake this work upon patriotic grounds. If some such plan is adopted my company is prepared to join with the Crown and Natives, in proportion to its area of freehold land, in making, for the purpose of soldier settlements, a free gift of so-much land as may be deemed advisable. It is suggested that the moneys necessary for these settlements should be raised upon the security of the whole of the lands to be vested in the said Board, that the soldiers and the Natives should be paid for any work they may be employed to do in developing the settlements, and that those who become qualified farmers should, in the event of the settlements being successful, receive farms at the cost of the improvements. The result of the adoption of this proposal would be that, in the event of these lands being proved valuable, an enormous area of land would at once be available for settlement in a district unexcelled in New Zealand for healthy and delightful living-conditions, while, in the improbable event of failure, the soldiers and Natives employed would have been paid for their services and at the same time have received a training as farmers under competent advice.

I am taking the liberty of sending a copy of this letter to the Ministers of Lands, Native Affairs, Railways, and Public Works, whose Departments are also concerned.

Trusting that this matter will receive your early and favourable consideration,

I have, &c.,

The Right Hon. the Prime Minister, Wellington.

F. G. DALZIELL.

No. 2.

TAUPO DEVELOPMENT.—SUMMARY OF FACTS.

1. IN October, 1911, a special Committee of Parliament advised that full inquiries should be made by the Government as to the best means of connecting Lake Taupo by rail with the existing Government railway system, so as to facilitate the early settlement of the large areas of Crown and Native lands in the Taupo district.

2. In 1912 the matter was dealt with by another special Committee of Parliament, the proceedings of which are reported in Parliamentary Paper I.—10 of that year.

3. In these proceedings it was made plain that the primary necessity for the development of this district is to connect Lake Taupo with the Government railway system.

4. Three different routes by which this connection could be secured were discussed, namely: (a) Putaruru to north of Lake Taupo, 67 miles; (b) Rotorua to north of Lake Taupo, 56 miles; (c) Kakahi to south of Lake Taupo, 40 miles.

5. Of these routes the only one on which there is an existing railway is the Putaruru-Taupo route, which has been carrying the Taupo goods traffic for the last fifteen years.

6. Of this railway the then General Manager of Railways (Mr. Ronayne) said that under certain conditions as to restricted speed it could be worked safely, both for goods and passengers (p. 88, par. 4, and p. 91, par. 46, of parliamentary report). Mr. Holmes, Engineer-in-Chief, Public Works Department, said "to work the line as an independent line for passenger traffic it would require very little improvement" (p. 83, par. 6). "The present line (extended to Taupo) will be quite enough for the Taupo traffic for some years to come" (p. 84, par. 33). "This line would most decidedly answer the purpose of the Taupo district" (p. 85, par. 50). Mr. Blow, Under-Secretary for Public Works, said: "If the company is disposed to extend its line to Taupo I think it is wise to encourage it—it would be of great use to the Taupo district (p. 75, par. 93). I think it would be justifiable to devote any increased land-values arising from the construction of this railway to its assistance" (p. 76, pars. 95–96).

7. These public officers were of opinion that the Government standard railway to serve the Taupo district should be that from Tauranga to Taupo, via Rotorua (p. 75, pars. 91–92, and p. 83, first and second pars.); but that such a line is not justified at the present time (p. 75, pars. 74, 75, 76; p. 86, pars. 100–6).

8. The Rotorua people desire that the Tauranga-Rotorua section of this line should be constructed before the Rotorua-Taupo section (p. 41, par. 69–70), and the Public Works estimate of the time within which the line would be completed to Taupo, after authorization, is eighteen years (p. 74, pars. 46–48, and p. 86, pars. 101–3).

9. Though admitting that the Taupo Company's railway, extended to Taupo, would be sufficient for the needs of this district for some time to come, the Government experts advised against it being taken over as part of the Government railway system, because in that event they feared an irresistible demand for its reconstruction to accommodate express through trains from Auckland, to which it would be twenty-four miles nearer than via Rotorua (p. 81, last par; p. 88, par. 5).

10. The main feature of the Taupo Company's line that makes it objectionable as a main passenger-line is the sharpness of the curves; but the hydro-electric-power sources of Arapuni and Aratiatia lie close to the line, and when developed would enable these curves to be cut out at small cost.

11. The Parliamentary Committee reported that the proposed Rotorua-Taupo line would not, owing to the topography of the country, materially benefit the district served by the company's line, and that the company should be encouraged to extend its line to Taupo (p. ii).

12. The question of the proposed railway connecting with the Main Trunk line at Kakahi was not dealt with by the Committee, but the position is that it is proposed to be constructed by the Tongariro Timber Company for the purpose of working a valuable timber bush on the western side of Lake Taupo. The Government is negotiating for the purchase of this timber, but has no present intention of working it or constructing this railway in the near future.

13. The pre-war estimates of the cost of establishing these railway connections with Lake Taupo were—Taupo Company's line, £50,000; Tongariro Company's line, £300,000; Government line, Tauranga-Taupo, £720,000.

14. The progress of events since these parliamentary inquiries were held has fully justified the conclusions of the special Committees. Settlement has progressed along the company's railway. Many thousands of acres of this pumice country have been converted into profitable dairy farms at a cost less than the price of equally productive land in other localities, and there are some hundreds of thousands of acres of equally good land in the district served by this line.

15. It has become clear, however, that, without the timber traffic, any railway in this country could only be carried on for many years at a large annual loss. Owing, however, to the fact that the more easily accessible areas of timber in New Zealand have been cut out, the timber upon the company's railway—of which a considerable portion belongs to the Crown and Natives—has become so valuable, as compared with other timber areas in New Zealand, that it is now clear that a traffic is secured to this line for many years to come which is sufficiently profitable to enable special facilities to be given for the encouragement of land-settlement in this district without undue expense to the community.

16. For some time past the company has been unable to meet the growing traffic needs of the settlers and business people on this railway. In order to meet these needs the company would be compelled to embark considerable capital in the purchase of new rolling-stock and to employ additional staff, and there is no prospect of the company receiving any adequate return for this expenditure during the life of its bushes—about fifteen years. The company is not justified, therefore, in incurring this expenditure, unless an arrangement is first made as to the terms upon which the Crown and Native timbers will be available for traffic purposes.

17. The company has been accumulating its profits for some years with a view to the development of its railway if some fair arrangement can be come to with the Government ensuring it a fair return upon its liability. It has now over £55,000 available for this purpose, and can, if necessary, provide the funds for the equipment of the line and its immediate extension to Taupo.

18. The company is prepared to enter into any reasonable business arrangement with the Government for the use of this railway that will secure to the company the present value of its interests, such value to be ascertained in any fair way. It is prepared to sell its business as a

going concern, or the railway alone, or to associate its business with the Crown and Native timber in the district on fair business terms, or to consider any alternative proposal. Its books show clearly that the timber business in this locality is very profitable, and in the ordinary course of events will become increasingly so.

19. This matter needs the urgent attention of the Government. The company cannot hold its funds idle indefinitely, the settlers are in urgent need of transport facilities, and the development of the Wairakei thermal resort and of farming lands on Lake Taupo, for which the funds are available, is only awaiting the extension of this line to Taupo.

20. The company urges immediate investigation of this matter by Government experts, when it will be found that this railway, properly associated with the timber in the district, is a sound and immediately profitable business proposition, and that there is no locality in New Zealand where so much valuable land and timber can be so quickly given transport facilities, at so small a capital expenditure, as in the case of this line.

For the Taupo Totara Timber Company (Limited):

F. G. DALZIELL, Chairman.

No. 3.

OPINION OF C. P. SKERRETT, K.C., AND SIR JOHN FINDLAY, K.C., *re* ABANDONMENT OF ORDERS IN COUNCIL UNDER THE TRAMWAYS ACT, 1908.

THE Taupo Totara Timber Company (Limited) holds three Orders in Council under the Tramways Act, 1908, and the question upon which we are asked to advise is whether the company can abandon its rights under such Orders in Council.

The history of such Orders in Council is as follows: The company began to take out timber in 1905, and at first used the Government branch line from Putaruru to Lichfield (about five miles) under an annual license from the Railway Department, and beyond that its own tramway without any Order in Council. The line was, of course, used simply as a private tram-line for the conveyance of the company's own timber. Apart from that portion which was Government property, it was laid entirely on the company's land (freehold or leasehold) except where it crossed roads. In no place did it run along a road, nor does it now. Consents were duly obtained to such road-crossings—in places where there is a local authority, from the local authority—in East and West Taupo Counties (where the Counties Act is not in force) from the Public Works Department.

In 1908 the first Order in Council was applied for and granted. This Order in Council did not confer on the company any new rights as far as the line was concerned, but merely affected the company's power of user. The reason for applying for such Order was principally that the company anticipated raising capital on the English market, and the statutory title to the line, with the right to operate as a railway company, was expected to appeal to the English investor.

A second Order in Council was applied for and obtained in 1917. This Order was primarily for the purpose of authorizing an extension of the existing line from Mokai (the then terminus) to Taupo. Power was given by this Order for the company to take land under the Public Works Act. Apart from this, the only additional power given to the company was that of crossing further roads for the purpose of the extension.

The third Order in Council merely extends the time within which the extension to Taupo shall be completed.

It is to be observed that there is nowhere (either in the Act or in the Orders in Council) any provision for the determination of the company's rights either upon the expiration of some period or upon the doing of certain acts. So far as the Orders are concerned, they deal chiefly with the obligations of the company rather than its rights, these obligations being for the protection of outside users of the line.

The position would at first sight, therefore, seem to be that the company is bound to carry on business as a railway company in perpetuity. This, of course, would only be the case if the local authority or the Government would not agree to accept a surrender of the company's rights and privileges. There is, of course, power for the company to discontinue with the consent of the Government or the local authority.

If a surrender of the company's rights be not consented to by the local authority, or if the Government refuse to revoke the Orders in Council, it would seem that under the terms of the Orders in Council, unless the company carry out its obligations, it is liable, at the option of the Governor, to revocation of its Orders, or a monetary penalty for each day during which default continues, such penalty being recoverable as a debt. Included in its obligations is a requirement that a train shall be run in each direction at least three times per week. If, therefore, the company desired to discontinue the line and an offer of surrender by it was not accepted, it would apparently have to continue or be liable.

Should there be opposition in the district to such a proposal by the company to cease running trains, the Governor might well prefer, so long as the company was in a satisfactory financial position, to inflict monetary penalties upon it for its failure to comply with the terms of the Orders, rather than revoke the same. This would more especially be the case if failure to run trains (or any other continuing breach) was subsequent to a refusal by the Crown to accept a

surrender from the company, so that it might be inferred that the breach was with the deliberate intention of forcing a cancellation of the Orders.

But this would seem to lead to a most unjust result. Presumably the company would cease to run trains because the running of trains has ceased to be profitable. If the obligation is perpetual, penalties will continue to accrue (and would no doubt be imposed) so long as the company had any assets. Should the other branches of the company's business be unprofitable the alternative remedy would no doubt be exercised as soon as the company's assets were swallowed up in penalties. But if the company were carrying on other branches of business successfully, the monetary penalties would no doubt continue to be imposed for a much longer period, and it would be doubtful whether the company could wind up so long as such penalties were accruing.

Such a result seems to us to be extraordinary, and we are of opinion that there must be some limit to the company's obligations.

It would appear from the cases cited by Brice ("Tramways," p. 111) that unless restricted by proper language or by a special jurisdiction a company may abandon its rights under a provisional order (this is the equivalent under the English Act of "Order in Council" under our Act).

That this is so is, we think, recognized by Regulation 26 in the schedule to the Tramways Act, 1908, which is similar in language to the corresponding regulation in the Board of Trade Rules. Regulation 26 appears to us to contemplate a determination of its rights on the company failing to carry on for a period of three months, unless cause is shown to the contrary, and we think the Orders in Council must be read in conjunction with this regulation.

It would seem to us extraordinary that, if the company realized that the tramway was no longer a paying business proposition, it could be compelled to pay penalties for failure to carry on for an indefinite period until all its assets had been absorbed.

We are confirmed in our opinion by reference to the law relating to mining and the rules as to abandonment dealt with in *Walhalla Gold-mining Company v. Mulcahy* (40 L.J. P.C. 41) and *Chin Fan v. Davis* (11 N.Z. L.R. 396). There is, we think, a similarity between the rights granted by the Crown to a miner under the Mining Act and rights granted to the company under the Tramways Act. Such rights are in the nature of easements, and will therefore be regarded as extinguished on evidence of abandonment. If, therefore, the company abandon all use of the line as a tramway-line under the Order in Council, with the intention of giving up its privileges under the Order in Council, it must, we think, be held that it thereby loses its rights and consequently is no longer bound by the requirements of the Order in Council.

In our opinion the proper way to regard this question, in the absence of any express covenant by the company in the Order in Council binding it to carry on for any particular time or in perpetuity, is to treat the concession contained in the Order in Council as a franchise which it can exercise only so long as it fulfils and complies with the conditions upon which the franchise is granted. The penalties referred to are imposable only so long as the company retains the franchise and claims the right of exercising it. Any other view would result in the absurdity that, even if there were no traffic available, owing to, say, radical changes in the condition of the land through which it passes, and the running of trains would therefore result in a crushing financial loss, yet if the view that the company must continue to run trains in perpetuity be correct the company would have to suffer that loss.

Dated this 25th day of November, 1920.

C. P. SKERRETT.
J. G. FINDLAY.

No. 4.

BOOK VALUE OF TRAMWAY AND APPURTENANCES AT 30TH APRIL, 1920.

	£	s.	d.
Tramway-line, Mokai to Putaruru	118,592	4	6
Share of fencing adjoining property at 31st October, 1920	592	6	1
Extension to Taupo	5,378	10	10
Platelayers' cottages	188	0	0
Other railway buildings, loco. sheds, &c.	18	0	0
Locomotives	4,346	10	11
Flat cars	3,132	9	7
Workshops plant, railway	734	15	8
Platelayers' tools	75	0	11
Blacksmiths' stock	434	18	4
	133,492	16	10
Railway land (freeholds only)	1,182	8	10
	135,375	5	8
Does not include Putaruru land for sidings, nor freehold from river to near Mokai: for these add (say)	624	14	4
	<u>£136,000</u>	<u>0</u>	<u>0</u>

No. 5.

TRAMWAY REVENUE, OTHER THAN COMPANY TIMBER AND GOODS.

Six-monthly Periods ending	Passenger Traffic.	Mails.	Cash Freights.	Ledger Freights.	Total Goods Traffic.	Total Revenue (other than from Company Timber and Goods).
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1915—April 30 ..	151 0 6	16 15 0	95 13 3	699 16 6	795 9 9	963 5 3
Oct. 31 ..	171 7 3	27 10 8	57 3 10	636 18 3	694 2 1	893 0 0
1916—April 30 ..	204 10 0	42 17 2	34 14 4	845 9 6	880 3 10	1,127 11 0
Oct. 31 ..	182 15 9	50 0 0	39 12 2	874 3 0	913 15 2	1,146 10 11
1917—April 30 ..	171 6 5	50 0 0	35 17 8	1,144 4 6	1,180 2 2	1,401 8 7
Oct. 31 ..	176 3 1	52 0 0	42 6 0	1,407 12 10	1,449 18 10	1,678 1 11
1918—April 30 ..	230 7 3	56 5 0	35 3 0	1,314 9 3	1,349 12 3	1,636 4 6
Oct. 31 ..	171 1 2	56 5 0	38 3 5	1,084 5 5	1,122 8 10	1,349 15 0
1919—April 30 ..	212 16 9	56 5 0	38 17 4	1,025 12 9	1,064 10 1	1,333 11 10
Oct. 31 ..	164 17 4	63 10 0	70 8 0	1,349 19 11	1,420 7 11	1,648 15 3
1920—April 30 ..	206 12 4	65 2 11	60 0 10	1,530 6 1	1,590 6 11	1,862 2 2
Oct. 31 ..	163 0 3	62 10 0	67 9 1	1,649 10 10	1,716 19 11	1,942 10 2

No. 6.

WORKING-EXPENSES, TAUPO TOTARA TIMBER COMPANY'S TRAMWAY.

	Six-monthly Period.		
	To 31st October, 1919.	To 30th April, 1920.	To 31st October, 1920.
Running-expenses—	£ s. d.	£ s. d.	£ s. d.
Wages	990 16 11	1,006 15 2	1,102 12 7
Coal, stores, firewood, and rent	925 4 1	966 17 3	1,116 11 3
Locomotive repairs	740 12 9	699 8 9	356 6 3
Rolling-stock repairs	200 2 3	166 2 6	505 10 6
Accident insurance (running)	14 10 7	13 3 11	15 0 0
Permanent-way maintenance	1,748 17 5	1,690 16 7	2,173 8 2
Bridge repairs	246 13 11	177 11 8	..
Rates	137 0 11	137 1 3	156 18 11
Depreciation of plant and rolling-stock	438 4 9	438 8 8	438 8 8
	5,442 3 7		
Discarded sleepers sold	102 11 8	..	..
	5,339 11 11	5,296 5 9	5,864 16 4

NOTE.—Expenditure for month of October, 1920, is approximate; the other five months of the period ending 31st October, 1920, are accurate. This period includes over £350 replacements of truck-wheels.

No. 7.

REVENUE AND EXPENSES PER TRAIN-MILE.

	To October, 1919 (13,800 Train-miles).			To April, 1920 (10,500 Train-miles).			To October, 1920 (11,800 Train-miles).		
	Revenue.		Per Train-mile.	Revenue.		Per Train-mile.	Revenue.		Per Train-mile.
REVENUE.	£	s. d.	s. d.	£	s. d.	s. d.	£	s. d.	s. d.
Total goods traffic to outside users charged	1,420	7 11	2 0·70	1,590	6 11	3 0·35	1,716	19 11	2 10·92
Timber to settlers	154	12 0	0 2·69	62	18 9	0 1·43	106	1 6	0 2·16
Company goods not on service ..	127	0 0	0 2·21	154	0 0	0 3·52	300	0 0	0 6·10
Timber-production, sawn and split ..	3,834	1 6	5 6·68	3,784	1 3	7 2·50	3,950	3 2	6 8·34
	5,536	1 5	8 0·28	5,591	6 11	10 7·80	6,073	4 7	10 3·52
Passenger traffic and mails	228	7 4	0 3·97	271	15 3	0 6·21	225	10 3	0 4·59
	5,764	8 9	8 4·25	5,863	2 2	11 2·01	6,298	14 10	10 8·11
	Expenditure.		Per Train-mile.	Expenditure.		Per Train-mile.	Expenditure.		Per Train-mile.
EXPENDITURE.	£	s. d.	s. d.	£	s. d.	s. d.	£	s. d.	s. d.
Running-expenses—									
Wages, train crew and staff	990	16 11	1 5·24	1,006	15 2	1 11·01	1,102	12 7	1 10·43
Coal, firewood, stores, and rent ..	925	4 1	1 4·08	966	17 3	1 10·10	1,116	11 3	1 10·71
Locomotive repairs	740	12 9	1 0·88	699	8 9	1 3·99	356	6 3	0 7·25
Rolling-stock repairs	200	2 3	0 3·48	166	2 6	0 3·80	505	10 6	0 10·28
Accident insurance (running)	14	10 7	0 0·26	13	3 11	0 0·30	15	0 0	0 0·30
Permanent-way maintenance	1,748	17 5	2 6·42	1,690	16 7	3 2·64	2,173	8 2	3 8·21
Bridge repairs	246	13 11	0 4·29	177	11 8	0 4·06	..	..	..
Rates	137	0 11	0 2·38	137	1 3	0 3·13	156	18 11	0 3·19
Depreciation (plant and rolling-stock)	438	4 9	0 7·62	438	8 8	0 10·03	438	8 8	0 8·91
	Total expenditure		7 10·65	5,296 5 9		10 1·06	5,864 16 4		9 11·28
Old sleepers sold	102 11 8								
	5,339 11 11								

No. 8.

RETURN OF BUSH LANDS SOME DISTANCE FROM, BUT WHICH WILL BE SERVED BY, THE PRESENT TAUPO TOTARA TIMBER COMPANY'S LINE ON ITS EXTENSION TO TAUPO.

Name of Bush (<i>vide</i> Appendix 11).					Rough Estimate of Millable Area.	Estimate of Timber per Acre (Log Measure- ment).	Total.
					Acres.	Feet.	Feet
Opawa .. ..	..	..	..	..	2,624	28,000	73,472,000
Tiraki .. ..	..	..	..	..	52	30,000	1,560,000
Otuariki .. ..	..	..	..	..	580	30,000	17,400,000
Te Kopiha .. ..	..	..	..	..	196	30,000	5,880,000
Turutururoa .. ..	..	..	..	..	256	26,000	6,656,000
Opepe .. ..	..	..	..	..	466	30,000	13,980,000
Waikare .. ..	..	..	..	..	333	36,000	11,988,000
Puketarata .. ..	..	..	..	..	334	29,000	9,686,000
Tutukau .. ..	..	..	..	..	3,750	29,000	108,750,000
					8,591	..	249,372,000

The above timbers are mostly matai and rimu, with a small proportion of totara, with a sprinkling of miro, kahikatea, and maire.

In addition to the above there is an irregular area of bush around Mount Titiraupenga (roughly, about twelve miles west of Mokai). It is, generally speaking, thinly covered with millable timber, but there are five separate patches, aggregating about 750 acres, which carry a fair crop of timber, estimated to average 25,000 ft. (log measure) per acre—say, 19,000,000 ft. The majority of the trees are rimu, with some matai and totara.

No. 9.

RETURN OF TIMBER LANDS INTERLOCKED WITH TAUPO TOTARA TIMBER COMPANY'S BUSHES.

Block.	Millable Area.	Estimated Crop of Timber (Log Measurement).			
		Totara.	Matai.	Rimu, &c.	Total.
	Acres.	Feet.	Feet.	Feet.	Feet.
Dansey's 1,000 acres, Tatua West (estimated)	140	2,760,000	3,866,000	18,224,000	24,850,000
Whangamata No. 2E, Section 1 ..	114	3,214,000	1,205,000	135,000	4,554,000
Pakuri—Native portion, two-tenths ..	66	1,000,000	500,000	500,000	2,000,000
Waipapa—Whatapo ..	294	9,327,000	2,418,000	345,000	12,090,000
Crown land Reserve (191 acres) North Whangamata, No. 2B	166	2,730,000	1,370,000	Nil.	4,100,000
Run No. 92 (guessed) ..	350	About 30,000 per acre, say ..			10,000,000
					67,594,000

No. 10.

REPORT BY CHIEF ENGINEER, WORKING RAILWAYS DEPARTMENT.

SIR,—

Wellington, 24th November, 1920.

In compliance with your request I have the honour to submit the following report on the railway belonging to the Taupo Totara Timber Company from Putaruru to Mokai, and estimates of the cost of—(1) Making the railway suitable for passenger and general goods traffic; (2) bringing the railway up to the New Zealand Government standard for secondary railways; (3) bringing the railway from Putaruru to 19 m. (near Kopokorahi) to the New Zealand Government standard for secondary railways.

Railway, Putaruru to Mokai.—For the purpose for which it was designed—the conveyance of timber from the sawmills at Mokai to the Government railways at Putaruru—the railway is, in my opinion, suitable. The railway generally is in a satisfactory condition for the present timber and limited general traffic, and has been fairly well maintained.

Formation, Cuttings, and Embankments.—In the construction of the railway it was specified that embankments should be 10 ft. wide and cuttings 8 ft. wide, with the proviso in the latter case that cuttings on curves should be made sufficiently wide to allow of 65 ft. lengths of timber being carried without touching the sides. Although not generally up to the width stated, the embankments are fairly satisfactory in width. I did not see during my inspection any place where the banks are as narrow as 7 ft. (as I understand previously reported), but there are indications of comparatively recent work having been carried out in widening. The cuttings generally are too narrow. It is evident that the widening beyond 8 ft. in some cuttings has been done, but even with the greater width provided there is very little side clearance for the wagons used, which have a width of 7 ft. 6 in. In many cases the cuttings have very little batter—in fact, in some cases the sides overhang—but these appear to be standing well.

Bridges.—From Putaruru to Kopokorahi the bridges have been built of rimu. From general experience of this timber, and from indications of decay in the structures themselves, these bridges have about reached the limit of life, and in the ordinary course will have to be renewed at an early date. The cost of this would presumably be debited to working-expenses. The principal bridge on the railway is that over the Waikato River (about 36 m.), approximately 250 ft. long. To counteract some movements in the structure some heavy struts have been introduced, but the bridge shows very considerable deflection under load. Apart from the limited side clearance provided I consider the bridge would require rebuilding before being certified as suitable for passenger traffic under Order in Council. Other bridges than those referred to are principally built of totara, and are in satisfactory condition.

Track.—The track consists of 30 lb. steel rails, secured to sleepers spaced at about 21 in. centres by dog-spikes. The rails are generally in good condition. A good many sleepers are rimu, and renewals are required. Check or guard rails are provided at a number of the curves, but these are not sufficiently secured to the running-rails to be of much service. Curves are very numerous. About 17 per cent. of the track consists of curves under 5 chains radius, about 12 per cent. of curves of 3 chains radius and under, while nearly 5 per cent. of the track has curves of 1½ chains radius. From 21½ m. (Kopokorahi) to 25 m. (Wawa Saddle), and from 36 m. (Waikato River) to 42½ m., approximately, 40 per cent. of the track has curves under 5 chains radius, 30 per cent. of 3 chains radius and under, and nearly 10 per cent. of 1½-chain curves. These curves must absorb a large proportion of the time of the men employed on the track. Although the track appears to be maintained, so far as I could judge, sufficiently for the present traffic,

a higher standard would be required for the running of passenger traffic. The ballast consists for the most part of the subsoil adjoining the railway, and although this contains a fair amount of clean pumice, it is not suitable for a high standard of maintenance, but is sufficient while speeds are moderate. The nature of the permanent-way, the large proportion of curved track, and the severe gradients limit the speed which can be run. On the sharp curves the speed should not exceed from six to eight miles an hour. On straight track and on the easier curves a speed of twenty miles an hour could be allowed if a satisfactory standard of maintenance is observed. A through speed of about $12\frac{1}{2}$ miles an hour, apart from train-stops, is about the limit of safe speed.

Clearance.—As already indicated, the cuttings are too narrow. There are comparatively few structures, but these, such as tank-stands, &c., require alterations to give clearances which would be satisfactory for passenger traffic.

Stations.—There are eight sidings in addition to those at Putaruru and Mokai. Of these, two at least are principally used for train purposes (double-banking, &c.). There are in addition to these sidings, a considerable number of "stopping-places" where goods are received and delivered, and in some cases it appears to be the practice to leave wagons on the running-track to be discharged or loaded, and picked up by the next train. Such a practice could not be permitted where trains carrying passengers are run, and the stoppage of trains to discharge or load goods at frequent intervals would lead to undue delays. Additional sidings should be provided to deal with such traffic. For passenger traffic shelter-sheds and conveniences would have to be provided.

Water-services.—For the present traffic the water-supplies appear to be sufficient.

Maintenance Staff.—Apart from the train-running staff I understand that the staff engaged on repairing and maintaining the track numbers eighteen. For the running of passenger-trains it would be necessary to adopt a somewhat higher standard of maintenance, and a daily patrol or examination of the railway. To do so would involve the employment of a larger staff. An increased staff would also be required for the maintenance of the additional structures which are necessary.

Rolling-stock.—The engine stock consists of—One Class A (old N.Z.R.) type; one Mallet compound (weight, 42 tons); one Barclay (four wheels coupled, 5 ft. wheel-base); two Heisler (geared). These engines, with the exception of the Class A, appear to be of a very suitable type for working trains on the railway. For passenger traffic the speed of the Heisler (geared) engines is too low. The passenger and goods vehicles comprise—Two composite passenger and goods vans; one goods-van; twenty-five "U" wagons for timber and general-goods traffic; one "U" wagon for bush work. All these vehicles are of the bogie type, with length over buffers of 32 ft. 6 in., 20 ft. centre to centre of bogie, wheel-base of bogies 4 ft. 7 in., and width over all 7 ft. 6 in. The present stock of engines and wagons is fully occupied with the existing traffic. For the carriage of passengers and general-goods traffic a substantial increase in both engines and wagons will be required, to be added to as settlement advances.

1. *Estimated Cost of Making the Railway Suitable for Passenger and General-goods Traffic.*

To enable passenger and general-goods traffic to be carried on the railway with reasonable efficiency and safety, and without material alteration of the existing curves and gradients, I am of opinion that the following works should be carried out and conditions observed:—

Cuttings and embankments to be not less than 10 ft. wide, with slopes sufficient to ensure stability. The track to be strengthened, especially on sharp curves. Bridges to be put in thorough order (in some cases renewed altogether), and made of sufficient strength to carry the maximum loads safely. Structures to have greater clearances. Stations to be provided with shelter-sheds and conveniences, and additional stations to be provided wherever local traffic is dealt with. Additional rolling-stock to be provided to meet the increase in traffic. Speeds not to exceed twenty miles an hour on straight track and easy curves, six to eight miles an hour on curves of $1\frac{1}{2}$ to 3 chains radius, and ten to fifteen miles on curves from 3 to 10 chains radius. The 10 ft. adopted for width of cuttings is the absolute minimum which I consider should be allowed for passenger traffic, and would involve the adoption of special precautionary measures to prevent accidents.

The cost of these works I estimate as follows:—

						£
Formation, track, and structures	...	...	...	...	...	40,000
Rolling-stock	...	...	...	...	...	30,000
Total	...	...	...	...	...	<u>£70,000</u>

Detailed statement of estimate is enclosed.

If the traffic developed to a large extent, involving the use of heavy trains, it might be considered necessary to have trains fitted wholly or partially with automatic brakes. The cost of this has not been included in the estimate.

2. *Estimated Cost of bringing the Railway up to the New Zealand Government Standard for Secondary Railways.*

The principal requirements of the standard referred to may be assumed for the present purpose to be—(1) Cuttings 15 ft. wide; (2) embankments 12 ft. to 13 ft. wide; (3) minimum curvature 5 chains radius; (4) steepest gradient 1 in 35, eased for curvature; (5) bridges to be sufficiently strong for all classes of Government railway wagon stock (10 tons axle-load); (6) rails to be 55 lb. per yard in weight; (7) structures to have N.Z.R. standard clearances; (8) stations to standards for flag stations.

It was apparently intended in the original specifications of the railway that all curves should be laid out so as to be eased if found desirable to do so. The configuration of the country traversed is such that on the present location it would be quite impracticable to provide a minimum curvature of 5 chains radius over about half the distance. From Putaruru to 19 m. (near Kopokorahi) there would be no serious difficulty in altering the railway, a slight relocation of about one mile and a half only being necessary. From 19 m. to Mokai it would be necessary to relocate the railway altogether, and the nature of the country indicates that the works would be heavy. Presumably, if such proposals were carried out the railway would be extended to Taupo. I have therefore included in the estimate subjoined the estimated cost of the Taupo extension, leaving the existing railway from the junction of the extension to Mokai to be worked as at present. Although existing Government engine, car, and wagon rolling-stock would be available for such a railway, additional rolling-stock would have to be provided, and this is included in the estimate.

I estimate the cost of the work as follows :—

	£	£
(1.) Putaruru to 19 m.	95,000	
(2.) 19 m. to Oruanui (junction with Taupo Station)	470,000	
	<hr/>	565,000
(3.) Oruanui to Taupo		335,000
		<hr/>
Total, Putaruru to Taupo		£900,000
(4.) Rolling-stock		60,000
		<hr/>
Total		<u>£960,000</u>

(Say, £1,000,000.) Detailed statement of estimate is enclosed.

3. *Estimated Cost of bringing the Railway from Putaruru to 19 m. up to the New Zealand Government Standard for Secondary Railways, the Railway from that Point to be worked as at Present.*

In addition to the estimated cost of altering the railway from Putaruru to 19 m. as stated in (2), terminal and exchange facilities would be required at Kopokorahi (19 m.). The cost may be stated thus :—

	£
Cost from Putaruru to 19 m.	95,000
Terminal, &c., facilities at Kopokorahi	5,000
	<hr/>
Total cost	<u>£100,000</u>

If desired to make the railway from 19 m. to Mokai suitable for passenger and general-goods traffic the cost of the works and rolling-stock required would be about £60,000.

For your information I enclose the following :—

- (1.) Detailed estimates of cost.
- (2.) Diagram showing limiting gradients on the railway between various points and percentages of curvature.
- (3.) Table showing total length of curves of various radii from $1\frac{1}{2}$ chains to $4\frac{3}{4}$ chains.
- (4.) Diagrams showing position of the Totara Timber Company's and N.Z.R. rolling-stock on curve of $1\frac{1}{2}$ chains radius and in cutting (on $1\frac{1}{2}$ -chain curve) with various clearances.

The estimates which I have prepared have been based on current rates for labour and materials, but on the assumption that the work would be spread over some time and that the utmost economy would be exercised. In the short time at my disposal for inspection the report and estimates can only be considered as a general review of the position.

I desire to take this opportunity to express my thanks to the officers of the Taupo Totara Timber Company for their kindness in giving all information desired, and placing every facility at the disposal of my officers and myself in connection with our inquiries.

I have, &c.,

F. W. MACLEAN,

Chief Engineer, New Zealand Railways.

The Chairman, Taupo Totara Timber Company Commission.

1. **ESTIMATED COST OF WORKS REQUIRED TO MAKE THE RAILWAY SUITABLE FOR PASSENGER AND GENERAL-GOODS TRAFFIC.**

Cuttings and embankments to be of minimum width of 10 ft.; existing track (rails 30 lb. per yard) to be strengthened on curves; existing curves and gradients to be retained. Bridges to be suitable strength for present loads. Structures to be provided with satisfactory clearances. Stations to be provided with shelter-sheds and conveniences, and additional stations to be provided where necessary for traffic.

Formation, Track, and Structures.

Putaruru to 46 $\frac{3}{4}$ m. (proposed junction for extension to Taupo), near Oruanui:—

(a.) Cuttings and embankments—									
0 m. (Putaruru) to 5 m. (Lichfield), nil.							£	£	
5 m. to 46 $\frac{3}{4}$ m. = 41 $\frac{3}{4}$ miles at £400...	...	...	...	...	...	...		16,700	
(b.) Bridges—									
Putaruru to Kopok (550 ft. at £6)	...	...	...	...	...	...	3,300		
Kopok to Waikato River	...	...	...	...	...	...
Waikato River (250 ft. at £20)	...	...	...	...	...	...	5,000		
Waikato River to 46 $\frac{3}{4}$ m.	...	...	...	...	...	...	—	8,300	
									25,000
(c.) Track—									
Strengthening track at curves	...	...	...	...	...	...	6,600		
General renewals	...	...	...	...	...	...	1,740		
Stop-blocks and locks at sidings	...	...	...	...	...	...	60		
(d.) Clearances—									8,400
Water-tanks, sheds on, to alter	...	...	...	...	...	...			200
(e.) Stations—									
Additional sidings, four at £300	...	...	...	...	...	...	1,200		
Shelter-sheds and conveniences at eight existing and four additional stopping-places—twelve at £100	...	...	...	...	...	...	1,200		
									2,400
Total	...	...	...	...	...	...			£36,000
46 $\frac{3}{4}$ m. to Mokai (50 $\frac{1}{2}$ m.):—									
(a.) Cuttings and embankments, three miles and three-quarters at £400...	...	...	...	...	...	...		1,500	
(b.) Bridges	...	...	...	...	...	...
(c.) Track	...	...	...	...	...	...		800	
(d.) Clearances	...	...	...	...	...	...		50	
(e.) Stations, shelter-sheds, and conveniences	...	...	...	...	...	...		100	
Total	...	...	...	...	...	...			£2,450
Putaruru to 46 $\frac{3}{4}$ m.	...	...	...	...	...	...		36,000	
46 $\frac{3}{4}$ m. to Mokai	...	...	...	...	...	...		2,450	
									38,450
Contingencies	...	...	...	...	...	...		1,550	
Total	...	...	...	...	...	...			£40,000

Formation, track, and structures—total £40,000.

Rolling-stock.

								£	
Additional engines, two at £5,000	...	...	...	...	...	...		10,000	
Additional wagons, twenty-five at £700	...	...	...	...	...	...		17,500	
Passenger-cars, two at £1,000	...	...	...	...	...	...		2,000	
Total	...	...	...	...	...	...			£29,500
(Say, £30,000.)									

Summary of Estimated Cost.

								£	
Formation, track, and structures	...	...	...	...	...	...		40,000	
Rolling-stock	...	...	...	...	...	...		30,000	
Total	...	...	...	...	...	...			£70,000

NOTE.—The estimated costs of work from Putaruru to 46 $\frac{3}{4}$ m. and from that point to Mokai are stated separately, as, in the event of an extension being made to Taupo, it might be desired to work the short piece of railway from the junction to Mokai for the purposes of the Timber Company alone, as at present. The cost of installing to some extent automatic air-brakes has not been included, although this might be found necessary. The cost of this work would be about £100 for each engine and £50 for each car or wagon fitted.

2. ESTIMATED COST OF BRINGING THE RAILWAY TO NEW ZEALAND GOVERNMENT STANDARD FOR SECONDARY LINES.

Cuttings to be minimum width of 15 ft. Embankments to be minimum width of 12 ft. Curves, minimum radius 5 chains. Gradients, ruling gradient 1 in 35, eased for curvature. Bridges to be suitable strength for all railway wagon stock. Rails to be 55 lb. per yard. Structures to standard clearances. Stations to N.Z.R. standards. Dwellinghouses for railway staff.

Formation, Track, and Structures.

Putaruru to 19 m. (near Kopokorahi):—

(a.) Cuttings and embankments—

Widening cuttings and embankments, 5 m. to 19 m. ...	£ 6,500
Relocation, 6 m. to 7 m., and near 10 m., one mile and a half at £5,000 ...	7,500

(b.) Bridges—

470 ft. at £10 ...	£ 4,700
Culverts ...	500
	5,200

(c.) Track—

New track (55 lb. rails) at £3,100 per mile, less value of existing rails, &c., at £500 per mile: nineteen miles at £2,600 (say) ...	50,000
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(d.) Clearances—

Altering existing structures to standard clearances ...	69,200
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(e.) Stations—

Standard flag stations, five at £1,200 ...	6,000
Roading ...	1,000
	7,000

(f.) Water-services

...	500
-----	-----

(g.) Fencing—

Fences, eleven miles at £240 ...	2,640
Cattle-stops, twenty at £30 ...	600
	3,240

(h.) Dwellinghouses: Houses for staff, eight at £800...

...	6,400
-----	-------

Contingencies

...	86,440
...	8,560

Total ... £95,000

19 m. to 46 $\frac{3}{4}$ m. (near Oruanui):—

New construction and location, twenty-eight miles at £16,000 ...	448,000
Contingencies ...	22,000
	470,000

Total, Putaruru to Oruanui ... £565,000

Oruanui to Taupo:—

New railway extension, twenty miles at £16,000 ...	320,000
Contingencies ...	15,000
	335,000

Total, Putaruru to Taupo ... £900,000

Rolling-stock.

Engines, three at £10,000 ...	£ 30,000
Passenger-cars, four at £1,300 ...	5,200
Wagons, twenty at £400, twenty at £600 ...	20,000
Vans, two at £700 ...	1,400

Contingencies ... 56,600

...	3,400
-----	-------

£60,000

Summary of Estimated Cost.

Formation, track, and structures—

Putaruru to 19 m. ...	£ 95,000
19 m. to 46 $\frac{3}{4}$ m. ...	470,000
46 $\frac{3}{4}$ m. to Taupo ...	335,000

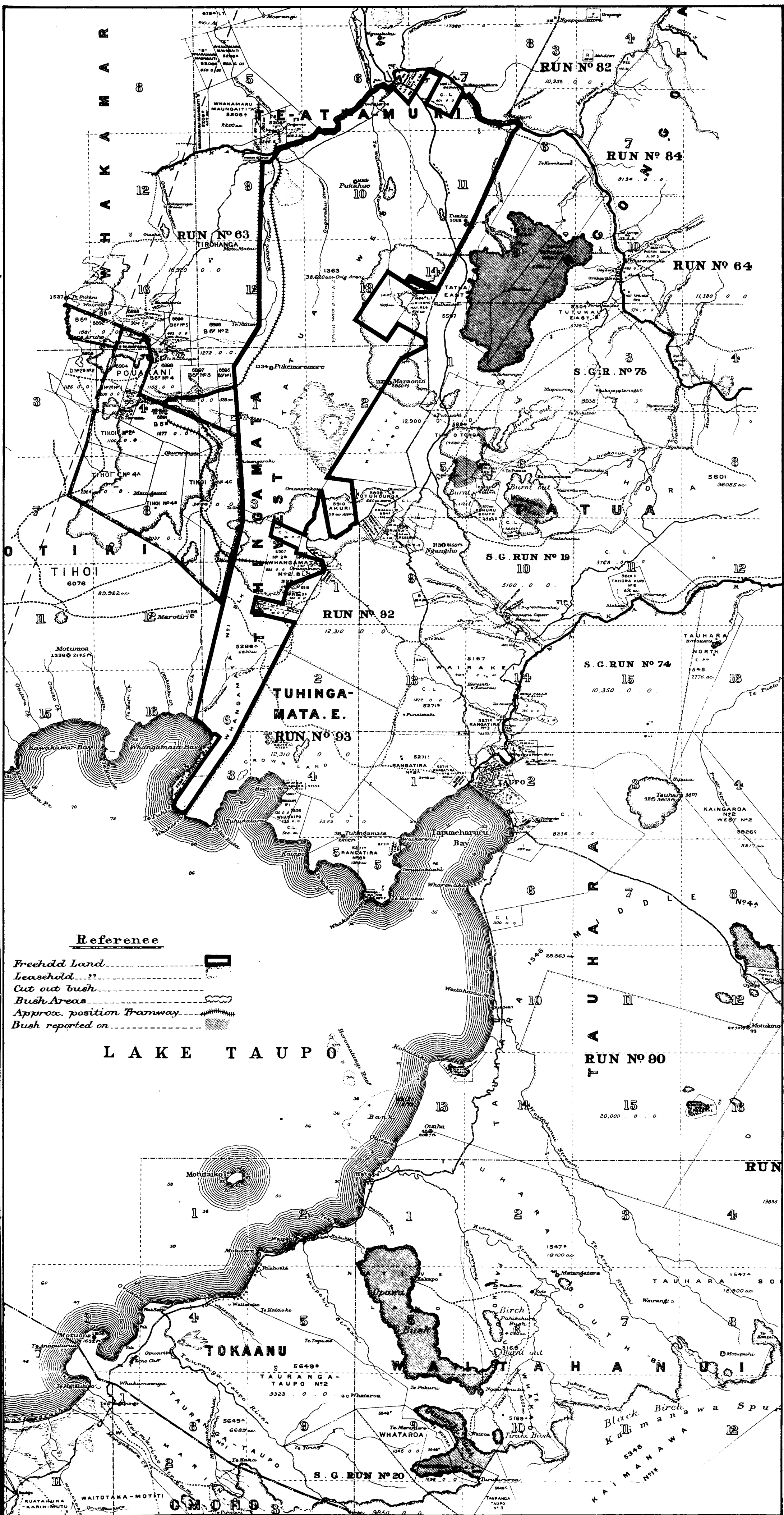
Rolling-stock ... 900,000

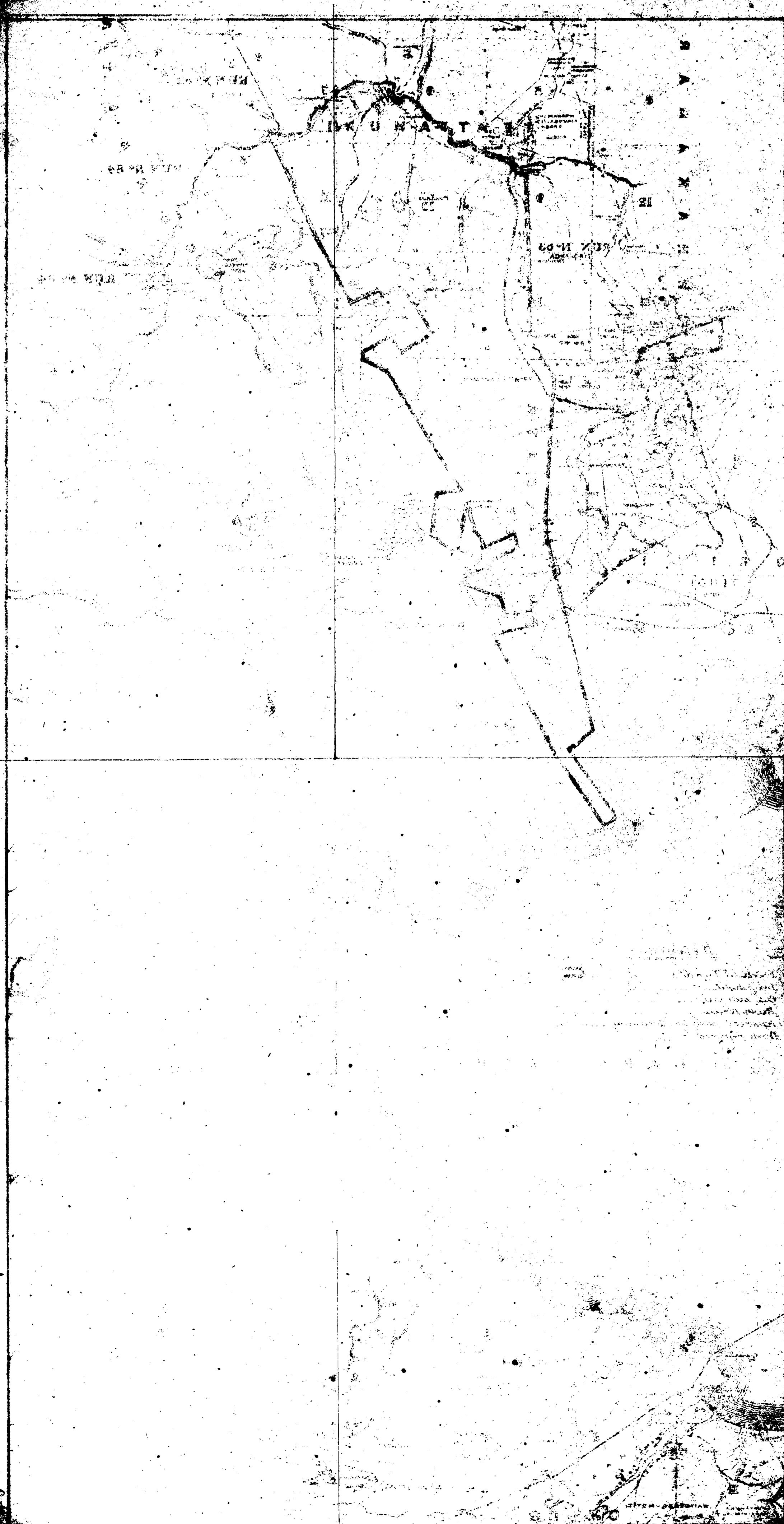
...	60,000
-----	--------

£960,000

(Say, £1,000,000.)

NOTE.—The cost (say, £60,000) of altering the existing railway from 46 $\frac{3}{4}$ m. (the proposed junction of an extension to Taupo) to Mokai has not been included, as this portion of the railway would probably be worked as a branch for the purposes of the Timber Company.





MAP OF THE AREA

LAND TRAVEL AND TRAIL COMMUNICATIONS

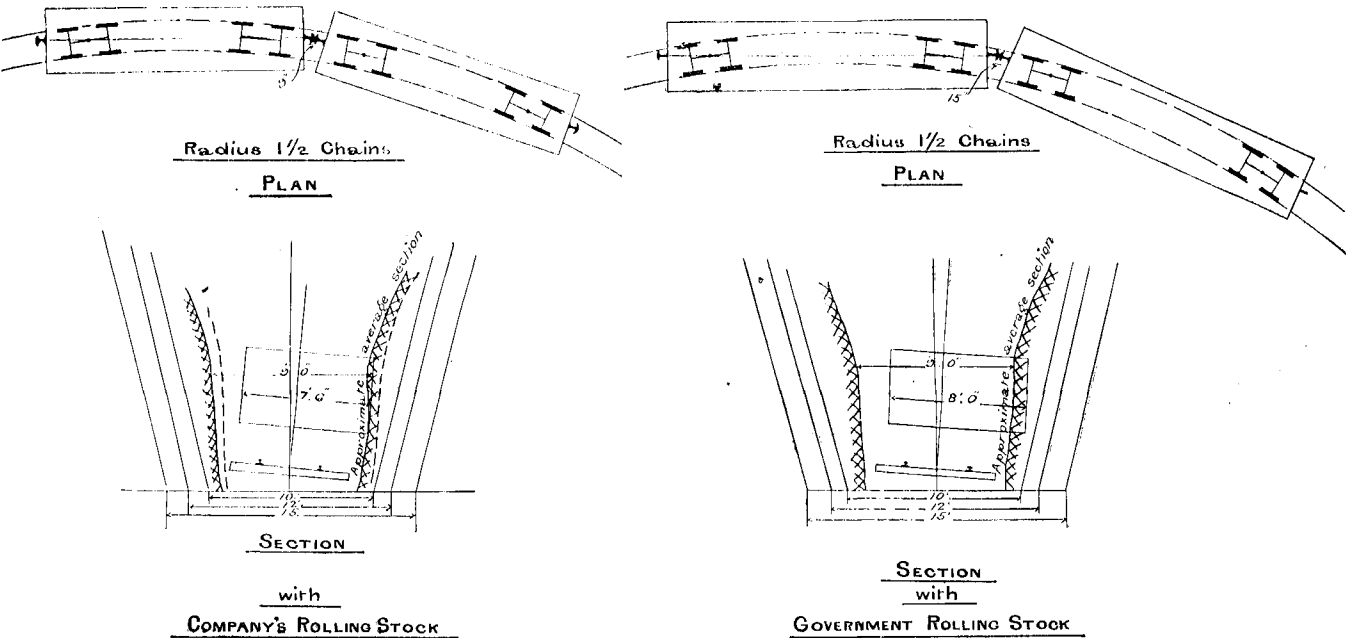
3. ESTIMATED COST OF BRINGING THE RAILWAY FROM PUTARURU TO 19 M. (NEAR KOPOKORAHİ) TO
NEW ZEALAND GOVERNMENT STANDARD.

Cost as stated in (2) from Putaruru to 19 m.	...	...	...	...	...	£
Terminal station facilities at Kopokorahi	...	...	...	...	...	95,000
						5,000
Total	...	...	...	...	...	£100,000

TAUPO TOTARA TIMBER COMPANY'S RAILWAY.—CURVES UNDER 5 CHAINS RADIUS.

	1½.	1¼.	2.	2¼.	2½.	2¾.	3.	3¼.	3½.	3¾.	4.	4¼.	4½.	4¾.
Lichfield to Kopokorahi ..	..	..	..	..	11½	..	14	9¼	6	..	29¾	..	4¾	..
Kopokorahi to Wawa Saddle ..	34½	1¼	17½	4	12	3	18	3¼	12	..	8¼	10	1½	..
Wawa Saddle to Waikato River ..	27	8¾	8¼	16	16	5½	62¼	14¼	6¼	4¼	3	..	..	9½
Waikato River to C Saddle ..	44¼	8¾	24½	20¾	14	..	44	6¼	5½	..	11½	8¼	20½	..
C Saddle to Mokai ..	..	2½	11¾	11¾	12	14¼	2¼	35	4	14	..	11½	..	14½
Totals ..	108¼	30½	62	53	57¾	10¾	173¼	37	43¾	4¼	64	18½	41¼	9½

DIAGRAMS SHOWING POSITION OF THE TOTARA TIMBER COMPANY'S AND N.Z.R. ROLLING-STOCK ON
CURVE OF 1½ CHAINS RADIUS AND IN CUTTING (ON 1½-CHAIN CURVE) WITH VARIOUS CLEARANCES.



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