

By the contract the line should have been constructed by about 1905, but the Order in Council authorizing its working is dated 29th January, 1908.

The Order authorizes the use of horses or mechanical traction, provides for the maintenance at level crossings, and stipulates that should the tramway be used for passenger-traffic suitable vehicles shall be provided, which have been inspected and passed by an Engineer appointed by the Minister of Public Works.

Failing to observe any part of the Order the company is liable to a fine of £5 a day.

Attached to the Order are three schedules. The first describes the conditions under which the line shall be worked, the second includes the scale of charges for passengers and goods, and the third the general regulations.

The cost of the line in the company's books appears to be about as follows:—

	£	s.	d.
Track and formation	117,629	19	0
Locomotives	2,905	2	6
Cars and wagons	5,340	10	6
Tools and machinery	407	14	11
Cottages and buildings	816	2	1
Total	£127,099	9	0

EXISTING CONDITIONS.

In the following remarks on the present condition of the line I have divided the subject so as to be more readily compared with the previous extracts from the contract and specification, and to be easier for future reference if desired.

From Putaruru to Lichfield the line is laid on land leased from the Government, formerly used for the Putaruru-Lichfield Railway, which was abandoned several years ago.

FORMATION AND TRACK.

The track is constructed to a gauge of 3 ft. 6 in., laid with steel rails weighing 30 lb. to the yard, on sleepers 7 ft. by 7 in. by 5 in., and the line is worked by locomotives, but of a much less weight per wheel than specified in the original contract.

Steel rails of 30 lb. to the yard, even if heavily sleepers, are scarcely sufficient for axle-loads of 8 tons as provided for in the original specification, although they are quite heavy enough for loads in excess of those they now carry.

The five miles from Putaruru to Lichfield are in good condition, although a little slack of ballast in places. Between Lichfield and Kopokoraki there are two or three rock-cuttings which should be widened. This could be done at a cost of about £25. Up to 21½ miles, Kopokoraki, the track, with the exception of some 3 or 4 miles which may be said to be in indifferent order, is well maintained. From Kopokoraki to Mokai the track is generally in good order.

At present there are fourteen surfacemen employed with a working foreman, and some assistance is afforded by a lad at Kopokoraki and a bridgekeeper at the Waikato River.

At about 26 miles, where the formation has been washed out, the track has been repaired in timber trestle-work. On the outside longitudinal beams are supported by vertical posts resting on solid rock, and on the inner side the beam is let into the rock. The structure is perfectly safe, and quite fitted for existing loads. The banks in many cases are too narrow, and scarcely support the sleepers at the ends.

From Putaruru to Kopokoraki, while the sleepers are mostly totara, there are a good many rimu; from Kopokoraki to Mokai they are all totara. They are of the full size specified, and are being well maintained, the sappy totara and decayed rimu being renewed as required.

The sleepers are not adzed, following the American practice, and rails are laid vertically and wheels are cylindrical. Although this differs from the practice on the New Zealand railways, there is no objection to the method.

The curves and grades are most severe from the Waikato River to Mokai; the easiest section is from Putaruru to Kopokoraki. While the middle section, from Kopokoraki to the Waikato River, has sharp curves and heavy grades, it is lighter than the section from the river to Mokai.

BRIDGES.

The main structure is that over the Waikato River. The type may be termed a "braced arch." It has been well built of sound totara timber, and should have a long life; but when the time for repairs arrives considerable difficulty will be experienced in carrying these out on some parts of the structure. This, however, is not a matter for immediate concern: the structure will last very many years with only a trifling expenditure. I have calculated the strengths of the principal parts, and find they are fully strong even for the loads it was originally proposed to carry, and no fear need be entertained as regards the safety of the structure.

The other bridges are structures of small spans of 15 ft. There are ten of these, with a total number of spans of fifty-seven. With the exception of that at Ngatuwera (six spans), which is partly of totara and partly of rimu, all are built of good heart of totara, and will last for many years. They are fully strong for the loads they are carrying—in fact, they are unnecessarily strong, as the original design provided for a much heavier type of locomotive than is now in use.