40. And is that the only job you have had to do in engineering within the last two years?—Well, I have practically retired. I surveyed and laid out the first portion of the sewage system of Palmerston North.

41. Have you ever been employed on harbour-works or done any designing in connection with a harbour?—No.

42. Do you know Mr. Howarth, the Engineer for the Wanganui Borough?—No.

43. You would not ask the Commission to take your opinion as against a professional man like Mr. Howarth?—I do not ask any one to take my opinion: I give it.

44. And they can take it for what it is worth?—Yes.

FRANCIS WILLIAM MACLEAN sworn and examined. (No. 45.)

1. *Mr. Myers.*] You are the Chief Engineer of the New Zealand Railways?—Yes.

2. You have not gone into the question of the Foxton Harbour at all?—I do not profess to be a marine engineer at all.

3. You are here to give the Commission some information with regard to the suggested new line of railway, and also in regard to the suggested connection of the tramway with Marton?—Yes.

4. First of all, will you tell the Commission what you can in regard to the question of the cost of this proposed new railway from Levin to Marton. You can take it by sections, if you like?—I have no personal knowledge of the country. So far as I know, there has been no engineering survey made of the country between Levin and Marton, so that one can only form an opinion on general lines from previous experience as to the cost of railways. The total distance, I take it, is something over forty miles. I will take it in sections. There have been no measurements, but the measurements are, roughly, from Levin to Foxton, eleven miles and a half; then from Foxton to Himatangi, five miles and a half; Himatangi to Sanson, fourteen miles; and Sanson to Marton, about eleven or twelve miles. The railway mileage depends upon the distance you have to develop to get your grades. You cannot tell by measuring on a map what the distance would be, and I think you would have to develop a little to get from Bull's to Marton. The whole distance is something like forty-two miles. Speaking roughly, the cost of a railway from our experience—I mean a main line of railway—from Levin to Foxton would, I suppose, be about £10,000 per mile, plus the cost of a bridge, which would be a pretty heavy cost. I should say a bridge over the Manawatu would run into something like £40,000, considering our experience of similar bridges. That section would therefore cost £150,000 or £160,000.

5. Are you taking into consideration that there is some liability of the country flooding?—Yes, and you must make a considerable amount of bridging. For instance, between Levin and the present Manawatu Bridge on the existing railway there are something like twenty bridges, and in a country of that nature you would have to provide perhaps not as many bridges, but certainly as much bridging.

6. Would you mind now taking the section from Foxton to Himatangi?—Well, that is at the present time a railway. It has been relaid with second-hand rails to bring up the strength, but it is a railway which would not be safe for the running of express trains on, and therefore it would have to be rebuilt. We have land there, so that I think we might be able to make it at a pinch at perhaps £3,000 a mile. It is not a main line of railway there. That is a pretty low estimate, because your permanent-way and ballasting cost you £2,500 out of that, so that it does not leave much for incidentals. You have also got to consider the question of the Foxton Station. We would have to spend, at any rate, £20,000 on that, and I should say it would be pretty cheap if you could get out of it at that.

7. Did you tell us anything about the alterations at Levin Station?—Oh, no. At the terminals of Levin and Marton Stations you must make new stations altogether. Now, Levin would not cost a very great deal of money, but probably you would have to spend, to make a workable junction, something like £30,000.

8. That takes us up to Himatangi?—Yes. At Himatangi you have to make a considerable alteration, because the railway from Foxton goes up in that direction, and the Sanson train comes back again. You have to make a complete new station at Himatangi. That might cost £5,000 or £10,000. Then, from Himatangi to Sanson you have a railway. At the present time it is a very indifferent tramway.

9. Are you speaking from a personal knowledge or from reports?—Partly from personal knowledge and partly from reports. I have not been over the whole of the Sanson Tramway, and it is some time since I was over part of it, but I have a pretty good knowledge of the conditions. You have there old 40 lb. rails and very old 28 lb. rails. The tramway is just laid along a public road. Now, by no stretch of imagination could you make a main-express route over a road of that kind: you must make a railway away from the road altogether unless you are looking for trouble every minute of the day, so that I would put down for that fourteen miles (including stations, which you must provide) at a low estimate, £7,000 per mile: call it £100,000 for that section. When that railway was originally laid the country was not very closely settled, and not under modern conditions. With a main line of railway you must provide bridges for your roads in a good many cases, and that is a considerable cost, so the estimates I am giving are very low.

10. Does not the line from Foxton to Himatangi at present run upon a road?—Yes. We have land alongside, but we would have to buy some also. Of course, the estimate I have given is a very low one.