

six weeks.'” The main point in this allegation, and which seems to have been somewhat overlooked in the discussion, is the combined statement that the wagons had been built by contract, and that they were so faulty as to require rebuilding within six weeks. If the statement is bisected its meaning is entirely altered, and it loses its force altogether. Thus, if wagons built by contract are only found to be defective after running for some years, the original defects could not have been serious, and the chances are that the defects are mainly due to ordinary tear and wear, or insufficient maintenance. Again, if wagons built by day-labour in the Government workshops are found to be defective when turned out, it is simply evidence of carelessness or incompetency on the part of the officers and workmen. Nothing more serious can be implied, for no one has any pecuniary interest in making bad work; on the contrary, the more labour that is put on the better for those concerned.

The statement, however, as it stands is of a much more serious character; it clearly implies connivance at bad work on the part of the officer who supervised it, to the benefit of the contractor who was carrying it out, or possibly to the benefit of both.

I ought to notice here a difference between the address of the Chairman of the Civil Service Commission and the report of the Commission. The address says: “We do not say where or when these wagons were built; we simply say those delivered in Christchurch about the end of last year were in a disgraceful state:” but the report (page 6) distinctly says, “Wagons built by contract in Dunedin.” The discrepancy is probably due to a want of precision in some of the statements made by the Locomotive Engineer, Christchurch, since his original evidence was given.

#### NATURE AND EXTENT OF DEFECTS.

I shall hereinafter show that I am in no way responsible for the defective wagons referred to in the report of the Civil Service Commission, so it is not my duty either to censure or excuse those who are responsible. In order, however, to make the matter clearer, and as you have asked me to report on the whole question, it is necessary that I should refer not only to the nature and extent of the defects, but also to their probable cause.

The wagon stock at present in the Middle Island numbers upwards of 4,000. I have analyzed all the statements made in the documents to which I have had access, and find that thirty-six wagons are stated in general terms to be defective, and of these a specific description of defects is given in six cases, the latter being the wagons referred to in the report of the Civil Service Commission.

I have not, of course, seen the minutes of the oral evidence submitted to the Commission, and I have had no opportunity of personally examining the wagons themselves; consequently my ideas of the nature and extent of the defects are formed from the written evidence and the report, and an inspection of the pieces of framing now in Wellington, together with information sent me by the officers of this department.

The evidence quoted in the report, and most of the statements subsequently made by Mr. Smith, are of too general a character to admit of minute investigation, more particularly as many of the points referred to are, to a great extent, matters of opinion. For instance, there is a note by Mr. Smith, on one of the defective pieces of framing, to the effect that the tenons should be  $1\frac{1}{4}$  inches long, and he sends a sample of how framing ought to be made. The specification prepared by the late Engineer-in-Chief, under which all the wagon contracts were carried out, says, “The longitudinal frames are to be stub-tenoned half an inch into cross-frames.” It is unnecessary to add that the specification provides all that is required. I ought perhaps to explain further that elaborate mortising and tenoning is not an essential in the framing of a railway-wagon: work of this kind is not sufficient to resist the severe strains to which the vehicle is subjected; consequently the connections depend almost entirely on the heavy bolts, through rods, and angle irons. The strongest evidence of defects in the wagons that I have seen is the specimens of framing now in Wellington. With reference to the piece of a headstock from wagon No. 1670, this is a case of excessive shrinkage in the timber, which had evidently been used in a very green state: there is no fault to be found with the workmanship. In No. 1595 or 599, both the timber and workmanship are defective. Although the defects in the workmanship are considerably aggravated by the shrinkage of the timber, it is evident that the joint was never good, particularly on one side, where the mortise is now half an inch wider than the tenon. No. 1515 is a very curious case: the tenon seems first to have been worked in the usual way, and then cut close off. There was no object in this, for the mortise was large enough to receive it, and no labour has been saved. I can only account for it on the supposition that this is not the original framing, but a piece inserted in repairing the wagon, the tenon being cut off to avoid pulling the whole vehicle asunder.

With reference to the wagons alluded to by Mr. Smith in his telegrams to the Chairman of the Civil Service Commission, of dates the 1st and 10th July, the District Engineer, Christchurch, reports that the defects are chiefly the result of unseasoned timber having been used, but that the shrinkage in most cases is not greater than might be expected in using ordinary Australian timber not specially seasoned.

A similar statement is made by Foreman Anderson, of Christchurch, in his last annual report to Mr. Smith. In reference to the Dunedin and Invercargill wagons, he estimates that 25 per cent. of the repairs are due to “the fact of green timber being used in the building of them.” So far as using green timber is concerned, I ought perhaps to remind you that the supply of wagons was the burning question in connection with the southern railways for several years: large numbers had frequently to be supplied at short notice. I should, therefore, not be surprised to learn that it was sometimes impossible to get the proper timber in time.

Another probable cause of defects in the wagons is the want of proper attention in maintaining them. This is apparent from the annual report made on the 30th June, 1879, to Mr. Smith, by Foreman Anderson. Referring to the Dunedin-Invercargill rolling-stock, the report says, “The repairs to this stock, both carriages and wagons, have been very heavy on account of being allowed to run much too long. If sundry repairs had been made to them in time a considerable saving would have been the result.”