

The rate therefore at which it was stated that cylinder-castings were charged out to locomotives—viz., £12 10s. per ton—is far too low (£15 per ton would be more nearly the value), and it would appear the so-called profit in the working of the year has only been arrived at by neglecting a portion of the charges which the foundry account should have been called upon to carry.

*Cost of castings too high.*

The average shop cost of £13 per ton is, in the opinion of the Board, too high, and exceeds considerably the shop cost of many private firms. It also exceeds the average rate at which castings have been supplied under contract before the Department undertook its own iron-casting. A rise in the price of pig iron has, it may be mentioned, contributed to this result.

*(3.) Points and Crossings.*

From observations and investigations of evidence and returns the Board have come to the conclusion that the manufacture of points and crossings is being carried on at Addington in a satisfactory manner, and that the cost of the work compares favourably with that done by private firms. They, however, consider that 33½ per cent., and not 15 per cent., should be the amount allotted to "fixed charges" when computing the actual shop costs.

The relative success of this work is an example of the effect of working on manufacturing lines and making use of modern machinery.

*(4.) Smith and Forge Work.*

Available data point to the cost of smith and forge work at Addington having increased, rather than, as stated in evidence, decreased, during recent years.

A comparison of the equipment and methods of Addington with those of Petone, Hillside, and the various private shops visited has convinced the Board that the cost of production of smiths' work at Addington must be greater than at the other establishments mentioned.

The method of cost-keeping in vogue at Addington does not permit of accurate relative figures being given.

*(5.) Boiler-work.*

The boiler-work at Addington is being carried on under grave disadvantages, which undoubtedly have the effect of causing the cost of production to be high. These matters have been fully dealt with under the heading "Efficiency of Plant and Appliances."

V. THE OUTPUT.

The association of repair with new work at Addington renders it, with a few exceptions, almost impossible to arrive at figures of any value in connection with the output. The prejudicial effect of such association has already been referred to, and the transfer of workmen from one class of work to the other to meet momentary outside demands must seriously reduce the output per capita. From the returns which are available it would appear that the output from Addington has not increased at a rate corresponding to the increase which has taken place in the number of men employed; also, that the weight of iron castings turned out per man employed in the foundry is lower than that which is attained in private shops engaged on somewhat similar work. The Board are therefore of opinion that with changes in method and equipment a considerably increased output per labour-hour may confidently be expected.

VI. GENERALLY, ANY MATTER CALLING FOR ALTERATION OR IMPROVEMENT IN THE INTERESTS OF EFFICIENCY, ECONOMY, AND DISCIPLINE.

*Knowledge of cost of work.*

The Board have been surprised by the small amount of knowledge of cost of operation and manufacture shown by some of those under whose immediate direction the work is being carried on and the apparently small amount of importance attached to the possession by them of such knowledge. It is desirable that steps should be taken to insure that managers and foremen are fully acquainted with the details of costs of production, and that in the operation of the shops it should be recognised that the cost of the work is a controlling factor in its production.

It would appear that in some cases the supervision of manufacturing work has been placed in the hands of officers who, however efficient they may be in the execution of their ordinary duties, have had no experience beyond the shops of the New Zealand Government Railways, in which manufacturing dates from a comparatively recent year.

*Suggest Home training.*

The Board would suggest that the persons whom it may be intended to place in control of new work should receive, for a period, training in one or other of the railway manufacturing works of the older countries. They view with approval the sending by the Department of its workshops managers and foremen on a visit to the railways of Australia, but cannot consider that the results of such a trip will be comparable with those which should follow a period of, say, two years' active work in an English manufacturing shop.

*Workmen's inventions.*

An idea appears to be prevalent among the workmen that invention, or the scheming on their part of contrivances to reduce the cost of work, will not be favourably received by those in authority. This idea probably arises from a limited knowledge of what has been invented and is in use elsewhere.