

MR. MCCREA ON RAILWAY FINANCES.*

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tend to do this. The company will, therefore, in the future be obliged to expend for operating expenses probably not less than 75 per cent. of any increased earnings which it may derive, but the 25 per cent. which will be thus left will not represent surplus earnings; thus, for example, gross earnings of the Pennsylvania Railroad Company in the year 1909 exceeded those for the year 1900 by about \$66,000,000 the operating expenses, including taxes, increased \$52,000,000 and the net earnings about \$14,000,000.

But in this same period the investment of the company in the property from which this income was derived had increased to the extent of \$288,000,000. Interest on this amount at the rate of 6 per cent. would be more than \$17,000,000, so that of the increased earnings of 1909, which, as has been already said, amounted to \$66,000,000, \$52,000,000 was absorbed by operating expenses and taxes, leaving \$14,000,000 net earnings, or \$3,000,000 less than the interest on the amount necessary to secure them.

In my judgment, therefore, it would be wholly unsafe to assume that the company will, as the result of the growth of its business, be enabled to recoup itself for the depletion in its surplus revenue, which is certain to result from a continuance of the present operating cost. Under these conditions I feel that it is essential, in the interest of the public and of shippers, as well as of the railway company itself, that it should be permitted to secure through an advance in rates the amount which represents its additional outlay on account of the advance in wages in order that its surplus earnings may continue at approximately the rate at which they have been running in the past. It will require the expenditure of more than these surplus earnings to enable the company to keep pace with the demands of the public and of its shippers, and unquestionably additional capital must be secured in the future. If we are to obtain this we must not only be in a position to make a fair return on it, but we must be able to show a margin of safety in our earnings.

I believe, generally speaking, that what I have said in regard to the Pennsylvania Railroad as to the necessity for the rate advance is equally true of almost all railways in the United States, certainly those which are conservatively managed and which are endeavoring to give the public such a service as they have a right to expect.

ROCK CRUSHING PLANT.

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of the plant and the excellence of its equipment are resulting in a saving in the cost of construction of the reservoir and the disposal of the rock taken from it which should pay for the entire equipment. It has sufficient capacity to crush the rock as fast as taken from the quarry, so that the product can be marketed immediately after excavation. The rock is handled but once from the excavation to the marketing, and in this way it is immediately disposed of and is out of the way. The rock is excellent in quality and instead of being thrown away on a waste bank, as was the case of the rock taken from the excavation for the Chicago drainage canal, for example, is made to yield a profit. Messrs Laurin & Leitch use a very great quantity of crushed rock in their own work on other contracts, noticeably, street paving, concrete work, and other engineering work of similar character, and a portion of this rock will be used in this way, the cost of which will be less to them than rock purchased upon the open market. The plant, which was de-

signed and equipped by the engineering force of Allis-Chalmers Company, possesses an unusual flexibility of operation in addition to unusual economy of production, so that it may be operated to suit both the work of excavation and the market for crushed stone, producing rock for the lowest possible cost of production. The plant is exceedingly compact, resulting in the smallest possible buildings, and is well arranged for operating with the smallest crew of men. One man handles the hoisting and haulage equipment, two men the dumping of cars and feeding of crusher, two men the handling of cars at the foot of the incline trestles, one man for the spring floor, one man for the number sixes, one man for the transmission and hoist floor, one engineer, two boiler men, one oiler and two men upon the conveyers, loading, etc., and these men constitute the entire operating force of the plant. One side of the haulage incline may be operated independently of the other if necessary, as can also one of the incline trestles. One side of the No. 21 crusher with its elevator and screen, can be operated independently of or without the other. Any one or all of the number sixes may be cut out temporarily, and when the balance of the plant is shut down rock may still be loaded or piled on the storage piles, or the drills at the quarry may be operated.

DETERMINING THE VALUE OF WATER POWERS BY PROPORTION.

In valuing a large manufacturing property recently, Lockwood, Greene & Co., of Boston, the architects and engineers of industrial plants, used a method of proportion in determining the value of two of the three water powers owned by the property in question.

The three developments had heads of 50, 29 and 12 feet, respectively. These will be indicated by the letters A, B, and C. Both the tangible and intangible value of A was very carefully determined by comparison with the cost and operating expense of a steam plant of equivalent power designed to operate at a maximum efficiency. This value was further corroborated by comparison with another hydraulic plant designed by Lockwood, Greene & Co., which had been operating under very similar conditions for about four years. The actual value of this plant was very closely known.

When the value of A had thus been carefully determined and checked, the values of B and C were determined by proportion in the ratio of their available heads. For example, letting Va, Vb and Vc represent the values of A, B and C, respectively, we have:—

$$\begin{aligned} & \qquad \qquad \qquad 29 \\ Va:Vb &= 50:29, \text{ or } Vb = \frac{29}{50} Va, \\ & \qquad \qquad \qquad 50 \\ & \qquad \qquad \qquad \text{and} \\ & \qquad \qquad \qquad 12 \\ Va:Vc &= 50:12, \text{ or } Vc = \frac{12}{50} Va. \end{aligned}$$

In the case of both B and C, the developments were much older, and the equipments not in as good condition as in the case of A, so that certain allowances and deductions had to be made from the values as determined above.

Winnipeg, Man.—Owl Metal Co., \$40,000; E. H. Goddard, A. Farquhar, A. G. Kemp. Security Lumber Co., \$500,000; J. P. Jansen, E. E. Sharpe, L. J. Elliott. Cummings Brass, Iron & Wire Co., \$50,000; F. J. Cummings, Toronto; T. Cummings, W. J. Cummings, Winnipeg. Transcontinental Townsite Company, \$100,000; H. W. Emeny, F. W. Crockett, L. J. Wisner, Elora, Iowa.