

approval of the Ministry of Communications. The railway company bound itself to maintain the railway and ports in good condition, effecting ordinary repairs and replacing works, materials, and machinery destroyed by use, and to return them to the Mexican Government in good condition at the expiration of the contract.

The annual earnings were to be apportioned as follows:—

- (1.) Payment of the operating expenses, maintenance of track, &c., and formation of a reserve fund for repairs.
- (2.) Payment of interest on loans.
- (3.) Payment to the two partners of an interest of 5 per cent. on the capital furnished by them.
- (4.) Refundment of losses in previous years which had been charged to capital.
- (5.) Payment of interest of 5 per cent. per annum after seven years on the capital devoted to the Coatzacoalcos port works for the special purpose of securing an additional depth of 1 meter over the 9 meters originally projected, making 33 ft. in all.
- (6.) The surplus to be divisible between the Government and the contractors as follows: During the first thirty-six years, 65 per cent. to the Government and 35 per cent. to the contractors; during the next five years, 68½ per cent. to the Government and the balance to the contractors; during the next five years, 72½ per cent. to the Government and the balance to the contractors; and in the last five years, 76½ per cent. to the Government and the balance to the contractors.

In May, 1904, the railway company, duly authorised by the Mexican Government, issued a loan of £1,250,000 at 5 per cent., guaranteed on the proceeds of the roads and ports. This loan was taken by the Dresdener Bank, and, together with a later issue of £175,000, was used to reimburse the Government and Messrs. Pearson and Son the advances they had made for the construction of the road. The railway company is authorised to increase the amount of its loans to £2,000,000 if necessary.

It is calculated that since the first work was done on the Tehuantepec route about £10,000,000 have been expended, and before the harbour-works are perfected about £1,000,000 will probably have to be expended in addition to the £2,000,000 just appropriated by Congress, making a total capital expenditure on the railway and ports of about £13,000,000.

The work both on the railway and at the ports seems, so far as an amateur can judge, to have been carried out with the thoroughness that characterizes the enterprises of Messrs. S. Pearson and Son. The works at the ports were, at the time of my visit, not yet completed, though they were sufficiently advanced to permit of the commencement of the interoceanic traffic. The railway, however, was practically completed, with the exception of a few deviations, and it certainly was a delightful sensation to be rushing through the tropical forest at a rate which sometimes exceeded fifty-six miles per hour, and so smoothly that even during meals one was not incommoded by the speed. I wish travellers could experience such a sensation on the other lines of Mexico.

Many difficulties were encountered by the contractors in the initial periods of the reconstruction of the railway, arising chiefly from the heavy rainfall during the rainy season, the exuberant vegetation, and other tropical conditions, and also on account of the difficulty in obtaining labour, caused principally by the fears of yellow fever. These difficulties have now been triumphantly overcome, and the railroad is in excellent structural condition, with a good roadbed of rock ballast and new steel bridges, and the management appears to be thoroughly capable and efficient. In the reconstruction of the road many of the heaviest gradients have been reduced and the curves eliminated, and this work was still proceeding when I was on the isthmus.

The engineering conditions for the railway-construction require a gradual ascent from the mouth of the Coatzacoalcos River, crossing many affluents of that river till the Cordillera of the Sierra Madre is reached. There is a depression at the Jaltepec River, seventy-nine miles from Coatzacoalcos. This river is spanned by a steel bridge of six spans, 560 ft. in length. Between this point and the Atlantic the gradients are about 60 ft. to the mile. The real gradient, however, may be said to begin at the point known as Santa Lucrecia, where the Jaltepec River is crossed. The Malatengo Canyon is entered about thirty-eight miles beyond Santa Lucrecia. Here the route is through rock cuts and chasms, which are bridged, gradually climbing upward to Rincon Antonio, where the railway company has established its yard and shops. A short distance beyond Rincon Antonio the Chivela Pass is entered, and crossed at a height of 735 ft. above sea-level. At Chivela the construction of two horseshoe curves and one tunnel was necessary. From this, the highest point, the descent to the Pacific is abrupt, and the steepest gradients are encountered. Through the Chivela Pass the gradients reach 116 ft. to the mile. On the Pacific slope the route follows for some distance the course of the Tehuantepec River, but leaves it before the terminus of Salina Cruz is reached.

The main line, which, as I have said, is 190 miles long, is supplemented by a branch about eighteen miles long connecting Juile and San Juan Evangelista.

At Santa Lucrecia connection is made with the Vera Cruz and Pacific Railroad, over which trains run to Vera Cruz and Cordoba on the Mexican Railway, thus giving uninterrupted access to Mexico City and all parts of the Republic, and also to the United States. At San Geronimo is the junction with the new Pan-American line, which will give, in the future, direct railway access to the Republics of Central America.

The equipment of the Tehuantepec road is of the most modern description. The gauge is of the standard one of 4 ft. 8½ in.; the numerous bridges are of steel, with solid masonry abutments; culverts of adequate capacity have been put in wherever required in solid masonry; nearly the entire road is now laid with 80 lb. rails, and is ballasted with crushed rock or gravel; the ties are of creosoted pine, native hardwood, and California redwood, and are provided with heavy steel tie-plates.