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SOURCE Prace a Vynalezky.

ELECTRIFICATION OF CZECHOSLOVAK RAILROADS

Prace a Vynalezky, 30 Sep 49

Plans for the electrification of the Prague-Ceska Trebova line, 165 kilometers, and Zilina-Spisska Nova Ves line, also 165 kilometers, are now almost fully prepared. These two lines are burdened to the limit; the former, particularly, cannot stand any greater concentration of traffic, although it is needed. Conditions can only be improved by electrification. On the Prague-Ceska Trebova line, 160 steam locomotives are in use or in full readiness to move trains between Prague and Moravia. Such a high number of locomotives is necessary primarily because they move relatively slowly and start even more slowly. A 3,000 horsepower steam locomotive may produce less power than expected, and its speed usually does not exceed 60 to 80 kilometers per hour. The express from Prague, on the other hand, starts slowly and gains full speed only somewhere near Bechovice, after losing at least 10 minutes of valuable time.

Rapid starting affects transportation so greatly that 100 electric locomotives will suffice to replace the 160 steam locomotives on the Prague-Ceska Trebova line. The saving in coal will be considerable since the transformation of coal into electric power directly in a power plant and the distribution of the electricity will result in smaller power losses than burning coal in steam locomotives. It has been estimated that 3 million tons of coal can be saved annually by electrifying all the 12,000 kilometers of the railroad lines in Czechoslovakia. All these lines cannot be electrified in the coming years, since on some lines conditions are not suitable.

However, the two above-mentioned lines can be electrified immediately. This project alone will save two long, full coal trains a day. Direct current at 3,000 volts will be used to power the locomotives, as in the USSR, Poland, Bulgaria, Yugoslavia, Italy, Belgium, and elsewhere. This is the most modern system. It is estimated that the investment will amount to 5 million crowns for each kilometer of railroad line. This figure includes everything necessary for the conversion of a steam railroad line into an electric line, including locomotives and converter stations.

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The locomotives will be produced domestically. They will have 3,500 horsepower and will be almost 14 meters long. They will cost about 10 million crowns each and will require 100,000 man-hours to produce. The yearly consumption of current will amount to 200 million kilowatt-hours on the Prague-Ceska Trebova line and 60 million kilowatt-hours on the Zilina-Spisska Nova Ves line, which runs through a mountainous area and reaches an elevation of 900 meters in Strba.

The electrification of both lines will not result in a special load on the power plants, the number of which will increase by the end of the Five-Year Plan. -- Edvard Cenek

Prace a Vynalezky, 20 Aug 49

The Tabor-Bechyně line, built by Frantisek Krizik in 1902, is the oldest electric rail line in Czechoslovakia. The electrification of railroads in Czechoslovakia was determined in principle in 1924 by the Cabinet, which approved the electrification of the Prague-Pilsen line. The Ministry of Railroads had decided that 1,500-volt direct current would be used.

The construction of overhead power lines and subsidiary stations was begun in 1926. The first stage included the lines leading from Wilson Station in Prague to Smichov, Vrsovice, Liben, and Vysocany. Six locomotives for shunting and for light freight trains, four locomotives of the 436.0 series for heavy freight trains, and six locomotives of the 466 series for express and passenger trains were ordered. The first stage included the electrification of 25 kilometers of railroad lines and 70 kilometers of power lines. A subsidiary station with an output of 3,000 kilowatts was established and supplemented in 1929 with another station which had an output of 4,000 kilowatts. Experimental power production was begun in 1928.

The second stage of electrification was to include the Smichov-Zdice line, and the local line to Beroun was to be motorized. This would have shortened the travel time of the local trains by about 30 percent. Execution of this work was postponed because of lack of finances. Work on electrification of the Prague railroad stations, which was only a part of the larger plan, was independently completed for the sole purpose of eliminating smoke at Wilson Station.

Four storage-battery locomotives continue to be in operation at Wilson Station. They can move to the freight sections of the station which are not equipped with the overhead power line. These locomotives are also used for shunting in Masaryk Station, which was excluded from the electrical network.

The Five-Year Plan calls for the electrification of the lines with the heaviest traffic.

The rail motor car, Series M 290, known as the "Slovak Arrow," is a long-distance express car with very modern equipment. Electrification of the Czechoslovak State Railroads has not progressed sufficiently to enable the use of electric locomotives and electric rail motor cars on long-distance lines.

The express locomotive, Series 466.0, produced by the Skoda Works, has four driving axles and two idling axles. It has an hour rating of 2,000 horsepower at a speed of 70 kilometers per hour, and a maximum speed of 100 kilometers per hour.

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The electric freight locomotive, Series 436.0, produced by the Ceskomoravska Kolben-Danek state enterprise, has an hour rating of 1,720 horsepower at a speed of 36 kilometers per hour. Its maximum speed is 60 kilometers per hour  -- Otakan Peukert

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