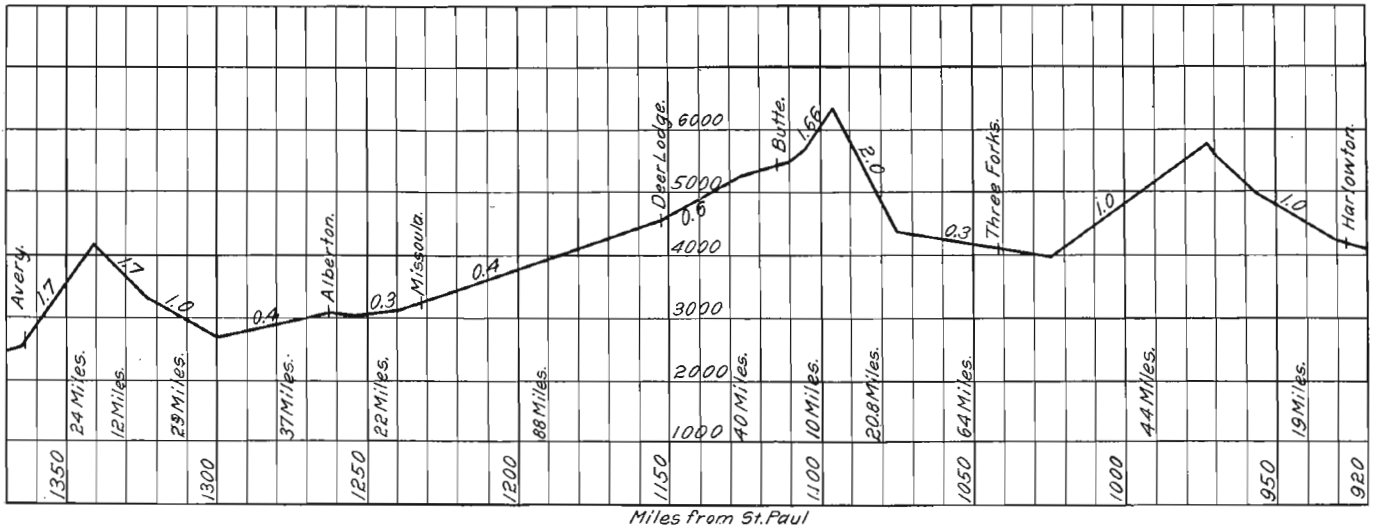


ally moved by our railways would at the present day tax the full capacity of that road, working day and night for one year. The commerce is increasing on an average of 8 per cent. and more per year, and notwithstanding that one-half of this yearly increase would tax the capacity of one of the first railroads in the land, no provision is being made and no provision can be made under the rates now received for transportation service for the proper and safe conduct of this prospective traffic.

Can the railroads meet this serious situation with which they

C. M. & ST. P. ELECTRIFICATION THROUGH THE ROCKY MOUNTAINS.

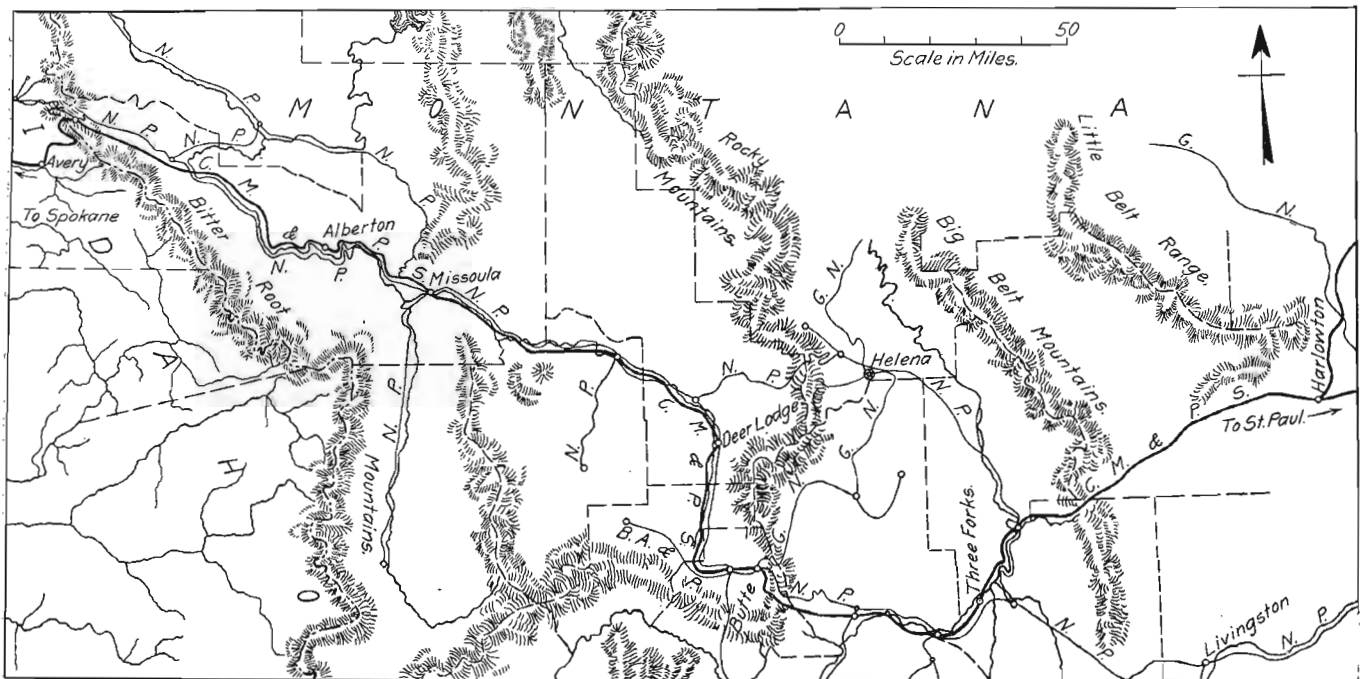
Announcement was made in the *Railway Age Gazette* of January 10, 1913, of the plan of the Chicago, Milwaukee & St. Paul to electrify that portion of its main line to the Pacific coast between Harlowton, Mont., and Avery, Idaho, a distance of 440 miles, and of the granting of a permit by the government to the Great Falls Power Company to construct a transmission line



Profile of C. M. & St. P. Line Which Is to Be Electrified.

are confronted? Yes, if allowed to charge a fair compensation for their services. The railroads now receive on an average per mile seven and a half mills for hauling a ton of freight, and less than two cents for carrying a passenger. If this average compensation could be increased even one mill, or the equivalent of the price of a postage stamp for twenty miles service, it would

across public lands to carry power for this electrification. Engineers of the electrical manufacturing companies are now working on plans for this installation, and expect to complete them by the middle of 1914. It is estimated that it will require two and one-half years to finish the actual construction work after this. This is the first electrification project proposed where en-



Location of That Portion of the C. M. & St. P. Which Is to Be Electrified.

extricate them from all further trouble and anxiety. It is scarcely conceivable that such a slight advance would injuriously affect any trade, industry or person, yet it would be the means of conferring untold benefits upon the entire business interests of the country.

tire engine districts will be covered, and for this reason the operation will be watched with much interest.

Between Harlowton and Avery, three mountain ranges, the Belt, Rocky and Bitter Root, are crossed. The maximum grade westbound is 2 per cent. for 20.8 miles on the eastern approach

to the Rocky mountains, and the maximum grade eastbound is 1.7 per cent. for 24 miles approaching the St. Paul pass tunnel through the Bitter Root mountains. The hardest problem, however, is considered to be presented by the continuous grade of 1 per cent. for 44 miles ascending the western slope of the Belt mountains. One of the conditions imposed upon manufacturers is the construction of locomotives which will pull trains of 2,500 tons up this grade at 20 miles per hour, the heavier grades being operated with pusher locomotives as at present. The necessity for operating the motors at the maximum capacity for this distance is a problem that has not been presented in connection with other work of this nature, and its successful solution will mark an important advance in this field.

In addition to the main line, about 10 miles of side and yard tracks will be electrified, these tracks being mainly located in the freight yards. Besides the yards at Harlowton and Avery, terminals are now operated at Three Forks, Deer Lodge and Alberton. These yards are all small, as trains of 1,700 tons are now hauled across the three ranges with Mikado and Mallet engines without breaking up. Also, as Butte and Missoula are the only cities of importance along this line, comparatively little local traffic originates here, the traffic being almost entirely through business. One important advantage expected from the proposed electrification will be the practical elimination of the intermediate yards at Three Forks and Alberton, as it is planned to run the electric locomotives continuously over two of the present engine districts, or about 220 miles, changing crews midway. In this way the two intermediate yards will be required only for the storage and repair of bad order cars and other minor purposes.

While contracts have been made for the power, the details of the development are still unsettled, depending largely upon the type of installation adopted. Power will be derived principally from Great Falls and Thompson Falls, although these plants are connected with a number of others. The number of points of delivery of power to the line and their location are also dependent upon the exact sources of the power and the type of construction adopted.

VALUATION OF RAILWAYS BY THE GOVERNMENT.

At a meeting of railroad presidents in New York City April 24, Samuel Rea, president of the Pennsylvania Railroad, was chosen chairman of a committee of 18 members, representing the principal railroads of the country, to consider what action should be taken in relation to the act of Congress empowering the Interstate Commerce Commission to make a valuation of the property of all railroads doing interstate business, which act became effective May 1. The members of the committee have not all been finally selected, but there will be seven to represent eastern railroads, seven, the western roads, and four, the southern.

Appointments by the Commission.

The Interstate Commerce Commission has announced the names of the men who have been selected to lay out plans for the work of valuation as noted below. The commission, in its statement, says:

"The first important step will be the selection of a board of engineers who will assist the commission in formulating plans, and who will have direct charge of carrying out those plans in different portions of the country. These engineers will be selected from widely separated localities and from different lines of work and environment, but in each instance exclusively on the basis of individual merit and with due consideration of experience. This board will meet in Washington and proceed immediately, in co-operation and conference with the commission, to outline plans for the engineering features of the work.

"Each member of the commission will participate actively in the preliminary work until all the more important questions of methods and principles which can at this time be determined have been decided, and will keep in the same close touch with this work throughout its continuance.

"The tentative valuations reached by the commission must be submitted to the carriers, to the department of justice, and to the governors of states in which the properties are located, and to such additional parties as the commission may prescribe. In case of protest against a tentative valuation the commission will proceed to hold hearings at which testimony by the most competent of men will be presented, supported by briefs, and, doubtless, by oral argument, prepared and presented by able counsel.

"The commission will select an advisory board of three, composed of men fully competent to advise on the many and large questions presented at the outset and which will arise as the work progresses. Aside from those above referred to, all who are employed in the valuation work will be selected through the medium of the Civil Service Commission. As soon as the working plans have been approved by the commission, forces will be organized for early active operations in the field, and as soon as the work is started along satisfactory lines, the forces will be multiplied and the work be pressed on the most extensive scale feasible, and consistent with efficiency.

"The engineering problems are, from the viewpoint of physical work, the most extensive and will therefore have to be pushed more aggressively during the early stages of the valuation work. Running parallel with that work and supplementary thereto, financial, statistical and economic studies will be taken up. These studies will be begun by parts of the present organization of the commission, supplemented from time to time by such additional help as is found necessary. No doubt many men will be employed in the different branches of this work, but none will be taken on until the need for his services is present.

"A division of valuation has been created which will probably not be fully organized until the field work has made substantial progress. This division will probably be the center of the valuation work after the original inventory has been completed, and in the making of the original valuation it will assist wherever experience shows that it can be advantageously used, and in that way the permanent organization will be developed. Certain sections in the division of valuation will be under temporary supervision of chiefs of existing bureaus; in other words, the commission intends to develop the new organization from its present organization, the members of which are known to the commission and have been thoroughly tried out."

The valuation work will be directed, along lines previously approved by the commission, by Commissioner Prouty.

Three days after the issuance of the foregoing the commission announced the names of the five men selected for the board first above mentioned. They are the following:

R. A. Thompson, now employed in valuation work by the California state commission, and formerly employed in like work by the Texas commission. The California commission has agreed to release Mr. Thompson.

Prof. W. D. Pence, chief engineer of the Wisconsin Railroad and Tax Commissions, and who has for some time been in the employ of the Wisconsin commissions in valuation work.

J. S. Worley, Kansas City, Mo., a consulting engineer in private practice, who has had experience in valuation work.

Howard M. Jones, Nashville, Tenn., a consulting engineer in private practice, and who has had much experience, and who is especially familiar with bridge engineering.

E. F. Wendt, Pittsburgh, Pa., president of the American Railway Engineering Association, and assistant engineer on the Pittsburgh & Lake Erie.

The commission hopes to arrange to have an army engineer added to this board.

PROPOSED SPANISH RAILWAY CONSTRUCTION.—A Spanish newspaper calls for tenders for the construction of a railway line from Barbastro to Boltana, 14 miles. Electric power may be used if necessary. Proposals are also requested for the concession of a railway from Betanzos to Ferrol in the province of Corunna, Spain.