

# LAST CHAPTER IS WRITTEN IN RAILWAY CONSTRUCTION STORY



**L**AST week the final gap was closed in the first through line of railway between Chicago and the coast. You may call it the "St. Paul," you may call it the "Milwaukee," or you may call it the "Puget Sound," according to your tastes and the colloquialism of your locality; there is at least one district west of here, where they call it the "Chicago" and they are not so far out of the way as might seem; it is the first through line, as has been said, from Chicago to the coast and its construction has been a triumph of engineering and financial skill. Great physical obstacles have been encountered and overcome and financial difficulties as great have been met and subdued. It has been a wonderful record from start to finish. To deal with the construction of this line all the way from its Dakota terminal to the coast would be out of the way in this edition; it is the purpose of *The Missoulian* to consider only that part of the new line which lies in its home territory; that is enough. What is said of this work here is the result of observation, not of reports furnished by prejudiced persons; this makes the story of the work all the more impressive.

The Chicago, Milwaukee & Puget Sound railroad enters Butte from the east over its own steel but in leaving the Copper city the company has a joint agreement with the Butte, Anaconda & Pacific people whereby the Puget Sound company moves its trains west to Durant over the foreign company's lines. However, preliminary surveys have recently been made by the new comers down the Silver Bow canyon and it is expected that the Puget Sound people will be able to operate trains over its own steel in a very short time.

### In Deer Lodge Valley.

In June, 1907, the Chicago, Milwaukee & Puget Sound company began the work of establishing a railroad grade westward out of Durant and in August, 1908 the last coupling of the steel rails was made at Garrison, a distance of 47 miles. This section of the new road is laid almost parallel with the Northern Pacific and is built through a practically level country. The course of the canyon is followed by both the Northern Pacific and the Puget Sound lines. The latter road follows the North side of the canyon, crossing the Northern Pacific tracks to the south side at Rice track. At Deer Lodge the Puget Sound will have its division point and will maintain terminal buildings and other equipment necessary to the operation of a terminal. During the past year a number of new railroad structures have been erected at this place consisting

of a large machine shop, roundhouse containing 15 stalls, storehouse, blacksmith shop and other buildings of a minor nature together with equipment for turning engines, and sufficient yard trackage for all practical purposes.

### From Garrison.

The Puget Sound line reaches Garrison by about the same line of route followed by the Northern Pacific and here deviation is made in this respect after leaving Garrison, except where the new line has found it expedient to cross to the south side of Hell Gate river in order to follow as straight a course as possible. Just outside of Garrison the company found it necessary to drill a tunnel through the mountain. This bore is 1,200 feet long 16 feet wide at the base and 24 feet high at the center crown. The preliminary work on it was made in August 1907, and the finishing touches were put on during the first days of March, 1908. The completing of this tunnel has been one of the retarding features of the construction of the new transcontinental line.

### Crossings

At six different points on the line between Garrison and Missoula the grade line is pushed across the river. These crossings are constructed of concrete abutments and piers with a superstructure of massive steel. The first of these bridges is at a point about one and one-half miles west of

Gold Creek, the line crossing from the north to the south side of the river. The bridge at this place consists of four 80-foot-through steel girders. At a point about one mile west of Drummond the line again crosses to the north side of the stream and recrosses to the south side one mile west of Nimrod. Half a mile farther west the river is again bridged to the north bank which is followed to a point one

mile farther west. At this point a cut has been made of sufficient width to permit three tracks, two of which are owned and operated by the Northern Pacific and the remaining track owned by the Puget Sound people. The cut, which is 1,700 feet long, is drilled through solid granite rock, its maximum height being 135 feet. The excavating of this cut took the joint railroad contractors a greater length

at that place is constructed for single track only, is 1,200 feet long, 24 feet high and concrete lined throughout. At Bonita, about six miles west of Nimrod the company again encounters the same mountain through which the Northern Pacific has bored a passage. The new line also enters this mountain at a point some feet to the south from the Northern Pacific, the two bores giving the effect of two eyes in the big hill. The Bonita tunnel, while the same height as the one at Nimrod, is not as long by about 3,000 feet.

### A Great Cut.

At Bandmann, two miles west of Bonita, the new railroad passes through another deep cut which is occupied in conjunction with the Northern Pacific, three tracks being laid on this grade and operated in the same manner as that at Hell Gate. This cut, driven through sand and loam, is 55 feet high and 4,200 feet long. In forcing a passage through this hill the contractors experienced a great deal of difficulty due to the loose condition of the banks which were constantly sliding.

On the south bank of the river, above the Clark dam, the Puget Sound company is at this moment drilling through the Bandmann hill to secure a line which will be safe from erosion by the waters. It was at this place that the Puget Sound company lost much of its grade last June.

### The Last Spike.

At a point one mile and three-quarters east of Missoula bridge the new line coupled up its steel on April 1. No ceremony attended the practical completion of the new transcontinental railroad which marked the finishing of tracks between Chicago and the Puget Sound.

At Missoula the new railroad has maintained its engineering headquarters ever since the preliminary surveys were approved. Here all the divisional work has been directed under the supervision of Division Engineer W. E. Danby and his able assistant, W. H. Davison. At this place, too, have been the headquarters of Trainmaster C. H. Marshall who came here from Marion, Iowa, to supervise the construction work on the division between Deer Lodge and the St. Paul Pass tunnel. A large freight warehouse and office building have been constructed near the company's tracks in the local yard and a modern passenger station is to be constructed just below the Higgins avenue bridge during the present summer. The railroad company has planned for ample yard space with every auxiliary institution for handling a good business, both passenger and freight.

### Westward.

Three-quarters of a mile below the Higgins avenue bridge the Puget Sound line passes under the Bitter Root tracks of the Northern Pacific railroad. Two miles and a half farther west the line crosses the Missoula

river on a steel bridge built on concrete piers. It has four, 80-foot and two, 100-foot girder spans.

Five and one-half miles west of Missoula the line passes through the first big cut between this place and the big Taft tunnel. This cut is made at Deschamps' ranch, is 50 feet high and 5,300 feet long and drilled through rock, coarse gravel and loam. At this point the Chicago, Milwaukee & Puget Sound people have made a wide detour to the south from the line of the Northern Pacific but returns to the vicinity of the latter line before reaching Frenchtown.

From the siding known by the Puget Sound men as Primrose, through Frenchtown to Huson the contractors encountered very light grading, little work of an exceptional nature having been necessary over that distance.

About 32 miles west of Missoula the new railroad will maintain its headquarters of the Missoula division, the place having been named Alberton. Terminal buildings have been erected at Alberton and a township platted, the company owning all of the convenient land in the vicinity which it holds subject to an especially prepared contract by which the purchasers agree not to use the property for the sale of intoxicating liquors or for any immoral purposes, whatsoever.

From Alberton the road follows the north side of the Missoula river to Nine Mile and passes through as rough a piece of country as is to be found in western Montana, and crossing the Northern Pacific tracks about five miles west of the terminal. Nearly two miles west of Nine Mile the line enters the mountain which it tunnels a distance of several hundred feet. Following this is a fill of nearly 3,000 feet long and 50 feet deep, numerous small rock cuts and fills

have been made between Alberton and Cyr, while one mile west of that place the contractors have been compelled to drill another small tunnel through the hill. This bore is 250 feet long and built according to the all of the Puget Sound tunnels.

Near the Cyr tunnel is the second Missoula river crossing. This bridge has a total length of 522 feet and is 109 feet above high water mark. The superstructure is composed of two 60-foot and one 70-foot deck girders, one 122-foot and one 211 foot deck span.

### Down the River.

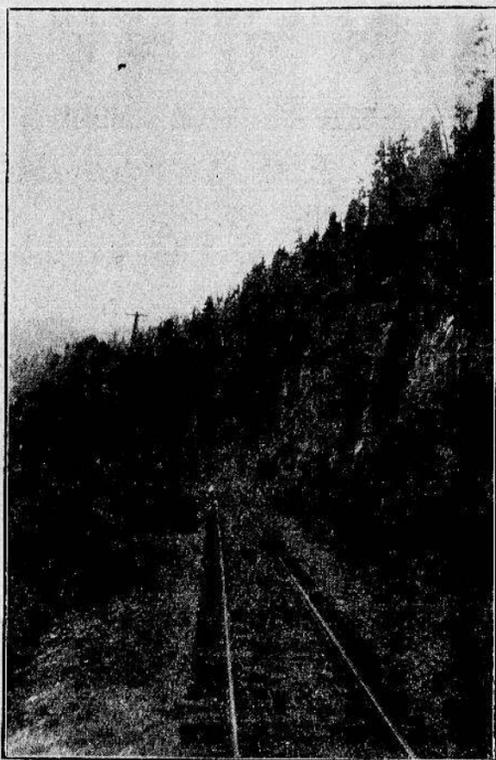
Only a short distance from the second crossing the line recrosses the river, passing over the stream at a point about three and one-half miles west of Cyr. The third crossing has two, 80-foot, one 70-foot and one 122-foot deck girders and one, 240-foot span, making a total of 582 feet. This bridge is 15 feet higher than the second crossing.

From the third crossing of the Missoula river, through the new towns of Parkia, Cobban, Superior and Ashmore the grade passes through a practically even country, little high grading or heavy filling having been necessary. At St. Regis the line again crosses the river just below the Northern Pacific new station. This bridge is 40 feet high and has a 300-foot trestle approach on a slight grade line. Its steel superstructure is composed of four, 113 deck spans making a total of 452 feet.

### Over the Divide.

Leaving St. Regis the railroad enters the St. Regis valley and follows the St. Regis river to the St. Paul Pass tunnel which it reaches after a seven mile climb up a grade of a little less than two per cent. The dis-

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THROUGH THE MOUNTAINS.

mile west of Gemmel. The last bridge east of Missoula is thrown across the river to the south side three and one-half miles west of Clinton. From this place the line follows the south bank continuously until a point considerably west of Missoula is reached. These bridges are of about the same uniform size.

### A Great Bridge.

At Hell Gate one of the most remarkable pieces of railroad construction

of time to complete than any other single piece of construction work on either of the lines.

### Tunnels.

At Nimrod the Chicago, Milwaukee & Puget Sound has, like the Northern Pacific, been compelled to strike through the mountain in order to secure a straight line. The tunnel at this place parallels that of the old line, the two being about 100 feet apart. The Puget Sound line tunnel



IN THE TAFT TUNNEL.

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