

A FEW PERTINENT FACTS

Undoubtedly the most important step taken to insure the advancement of Prineville and to safeguard the surrounding country against a possible shortage of water for crops was when the Ochoco Irrigation District was formed in order to construct a reservoir for the storage of water.

Lake Ochoco has a storage capacity of 47,000 acre feet. That this is of the utmost importance to the growth and development of Prineville is recognized by all familiar with the city and its possibilities.

The Twohy Brothers Company, who originally started the construction, were responsible for the erection of the large camp which made it possible for the workmen to remain near the works at all times. This company erected superintendents' cottages, roomy bunk houses for the employees, private living quarters for those employees who brought their families with them, a big store office, dressing rooms, warehouses mess hall and dormitory—the best accommodations for all who furnished their brains and muscles toward completing the dam.

In spite of the enormous increase in the cost of labor and construction materials occasioned by the war, the work was not abandoned but the project was pushed forward as rapidly as possible. The price of labor had increased 35 per cent higher than at the time the contract was awarded. Steel cable, which was very difficult to get, cost 100 per cent more than it did previously. Blasting powder had risen 40 per cent, and cement 20 per cent. Feed, oats, and hay cost 100 per cent more than had formerly been paid, and freight rates increased 25 per cent. All of these items were in constant demand almost daily in large quantities on this construction work, and the fact that the work was carried on in spite of this reverse is worth consideration.

The work of excavation in the main canal was accomplished through the means of a large steam shovel, the heaviest piece of machinery ever used near Prineville. A great por-

tion of the main canal is through solid rock cuts and several long stretches of flume aggregating about 4,000 feet in length was replaced by the large earth and rock canal, thereby making a more permanent job.

The large reinforced concrete conduit has a capacity of 1,000 cubic feet of water per second. After leaving the conduit the water flows through a concrete lined canal built on the steep rock hillsides for about one and one-half miles. This canal has a rock wall on one side and has a three inch concrete lining throughout the whole mile and a half. Although there was more than five times the quantity of this rock wall than estimated the contractor would have completed the canal and lined it with concrete within ten days of the contract time, if it had not been necessary for the directors to have this work temporarily discontinued, in order to irrigate some of the land. It was necessary to build almost half a mile of road to get sand and gravel for the concrete up to the canal.

The big dam, which is 125 feet high and over 1,000 feet long and 600 feet thick on the bottom and 18 feet thick on the top, is the largest and most important part of the project. To built the dam, it required over half a million yards of earth and rock and nearly 6,000 yards of concrete. To stop the water from flowing under the dam, it was intended to excavate through the gravel in the foundation into the solid clay bed underlying the dam site, and to fill this trench with clay. It was, however, decided to build the dam in two individual sections, the first to raise the water about forty feet and the second section to raise the water the full height. It was therefore, necessary for the contractor to excavate two puddle trenches instead of one, and the dam now has this additional factor of safety.

The main part of the dam is built of earth and rock sluiced down from the mountain sides. Two large pumps driven by a 400 horse-power electric motor pumped 6,000,000 gallons of water a day under great

pressure, loosened the material which was then carried into the dam through flumes and pipe lines. This pumping unit consisted of one 400 horsepower electric motor which was connected directly to twin five stage pumps weighing forty tons each and mounted on a concrete foundation of equal weight.

It was contemplated to get all the half million yards of material for the big dam from the south side of the valley. The material there, however, proved a great disappointment to everyone connected with the project. It contained so much rock and so little earth, that the powerful giants were unable to loosen it. The contractors, at great expense, moved his giants and pipe lines to five different pits, but each one that was tried, turned out to be a disappointment. By resorting to a great deal of expensive blasting and other unusual work, enough material was secured to build the first section of the dam, which contained about 50,000 cubic yards of materials. Another body of material was then located on the opposite side of the valley, and all the giants, pipe lines and other equipment were moved to this new location.

Continuing with the work on the north side of the stream, an abundance of material for the construction was obtained.

Sluicing operations were under way at all times, unless the weather was unusually cold, which delayed the work only a short time.

The Twohy Brothers Company abandoned their contract on February, 1919, after completing approximately 26 per cent. of the structure.

The Ochoco District subsequently took over the work under the contract and entered into an agreement with the Sluicing Department of the Puget Sound Bridge and Dredging Company, for the continuation and completion of the sluicing and other operations.

During the season of 1920, the dam proved its worth by storing all the water yielded by the drainage area, or about 22,000 acre feet. The amount stored during the season of

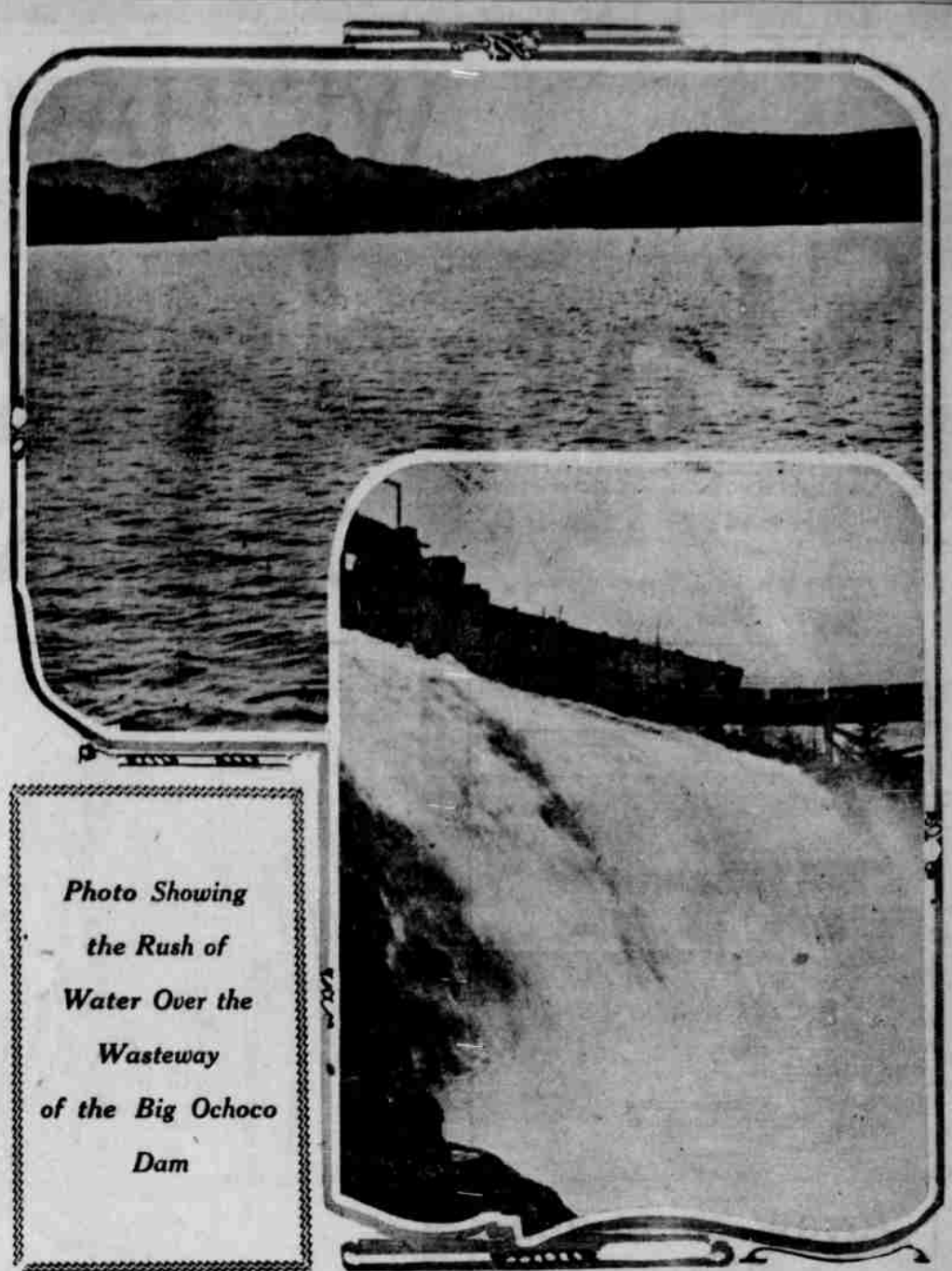


Photo Showing the Rush of Water Over the Wasteway of the Big Ochoco Dam

1919 was 6,300 acre feet. As a result of this stored water, crops were good all over the Ochoco Project, and water users without exception, were much pleased at the manner in which the supply was distributed and over the prospects of future years.

The value to a community of a structure like the Ochoco Dam is hard to estimate, but it is safe to predict that each succeeding year will show crop increases far beyond the most conservative hopes of the land owners.

Financing of the project was effected by three bond issues, totaling \$1,350,000, and marketed through the bond firm of Clark, Kendall and Co., and Ralph Schneeloch Co., and associates of each.

All construction work on the dam was in charge of Project Engineer, R. W. Rea, for the irrigation district and M. R. Kirkpatrick, general superintendent for the sluicing department of the Puget Sound Bridge and Dredging Company.



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Novelists that speak of a face "lighting up" put down an actual truth that few of them are aware of or intend. One of the most delicate instruments in the world, a radiometer, records the "shine" of a human face, and can do it at a distance of several miles. So delicate is the instrument that it can detect and record the glimmer of a candle half a mile away, and if there were no atmospheric obstruction it could detect the same candle 16 miles away. The instrument consists of two thin glass disks, one polished and one blackened, suspended by a quartz thread in a vacuum. Waves of radiant energy striking this instrument disturb its balance, because the bright disk reflects them, while the black one absorbs them.

While the human face to the normal eye gives out no waves of radiant energy, the fact remains that a constant flow of energy is being thrown off, and these waves travel an unknown distance. Although the radiometer is a wonderful and delicate instrument, there is a thermal couple ten times as sensitive as the radiometer and it can detect the heat of a candle 80 miles distant.

Italy to the Rescue.

Visiting a school is a doubtful pleasure. But the woman had promised to call for a friend who is known as a "rooky" teacher. She waited until almost closing time before entering the school, a red brick, lumpy sort of building, not specially attractive. It looked as if she had come too soon. All eyes soon focussed on her instead of on the busy little teacher. The word "trio" was being explained to the children and volunteers were asked to stand and use the word in a sentence. And no one need expect to go home until the word was fully explained.

Little R. T. coaxed, "Come now, tell me just one little story with 'trio' in it."

Timidly, swarthy little Giuseppe raised his hand. His naturally happy face was strained in his effort to help. Then flashed a bright smile at the woman and shouted cheerfully:

"It is nearly trio o'clock."—New York Sun.