

# Building of the Cobble Mountain Dam

Cobble Mountain Reservoir  
 once a glacial lake  
 years ago. Around 1905  
 bridge, engineer Allen  
 er skilled engineers rec-  
 incomparable value of this  
 site as water supply for the city  
 Springfield, say in the year 2000.  
 When these men surveyed the rough  
 wooded slopes, as they looked in 1905,  
 it took great foresight to envision this  
 vast basin filled with water, by man, as  
 once nature had done.

## Highest Dam in the World

In 1927, work on the project com-  
 menced. The construction of Cobble Mountain Dam, then the  
 highest hydraulic fill dam in the world, quickly eclipsed in  
 popular interest the tunnel construction, begun at the same time.  
 By spring of 1930, when the dam was well on its way, visitors  
 gazed astounded at a tremendous gash in the face of the moun-  
 tain. So large its very size left one awe struck and fearful. The  
 equally tremendous activity gave it a note of reassurance.

The engineer in charge of construction was Harry H. Hatch.  
 Hundreds of workmen were being housed and fed on the loca-  
 tion. Young engineers worked in laboratories analyzing all the  
 varieties of silt, clay, sand, gravel and rock that were available for  
 use as dam-building material. There were pits from which the  
 proper material could be "borrowed" and transported to the dam  
 site. There were two methods to transport the materials. The first  
 was wholly hydraulic, where the material was excavated by  
 hydraulic "giants" supplied with water under sufficient pressure  
 to break up the soil and carry it, mixed with water, into steel pipes  
 leading directly to the dam. The other method, semi-hydraulic,  
 involved the use of a double track narrow gauge railroad by  
 which the material was transported dry to the edge of the great  
 chasm where the dam now lies. Twelve times an hour ten-car  
 trains dumped 40 cubic yards of filling material into a dissolving  
 bin called a hog box.



The Cobble Mountain Spillway

## 7100 Cubic Yards Per Day

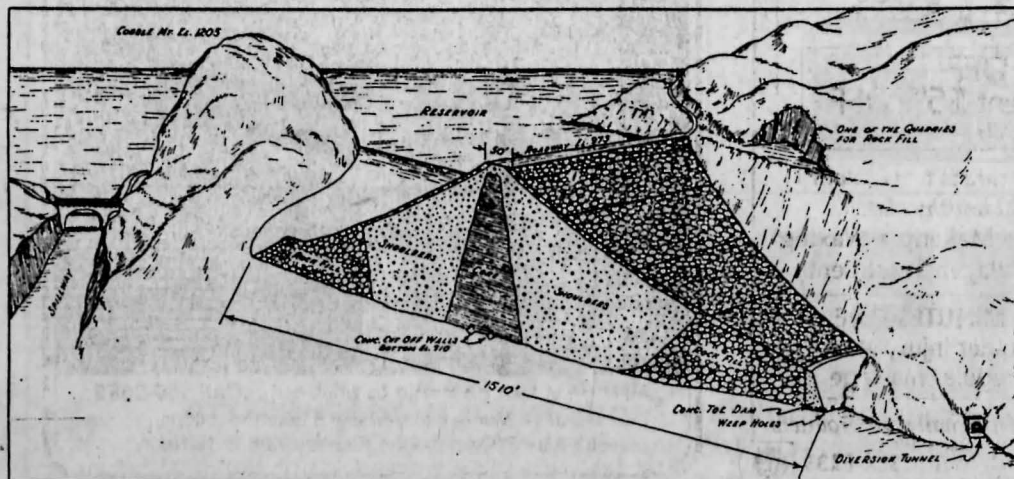
The hydraulic giant shot a stream of water into the material  
 reducing it to a swirling mass of sand and stones forcing it into  
 a revolving "grizzly", a device to grade it for size. The rocks held  
 in the grizzly were discharged into a rock chute. From the chute  
 they bounded down the slope. The finer material was carried by  
 water to the beaches which supported the core of the dam during  
 construction. On an average day, 7100 cubic yards of material  
 was placed in the dam, yet it seemed almost imperceptible, and  
 one gets the feeling the task is impossible. However, it has been  
 done, successfully. Before building the dam all organic material  
 had to be removed. All roots, sod, and vegetation were picked up  
 and taken away. It is an important fact that the dam does not have  
 any kind of conduit through its body for any purpose.

## Tragedy and Comedy

During the dynamiting of Cobble Mountain a piece of rock  
 the size of a grand piano was blown over the mountain where it  
 struck and killed one of the workman. For the comedy side,  
 imagine Ernest Zoerb, Mr. Lochridge's chauffeur, piloting his  
 old big Pierce-Arrow down 30 degree grades and around hairpin  
 turns on a roadbed of slithering  
 mud! Getting stuck? Not too of-  
 ten.

## The Water Supply

Unfortunately Granville did  
 not take advantage of the oppor-  
 tunity to supply its own town with  
 water! We supply three cities with  
 water, yet, to quote Coleridge,  
 "water, water, everywhere and not  
 a drop to drink!" One visitor view-  
 ing the spillway explained to his  
 family. "This is where the water  
 will flow down the mountain once  
 the system begins. If that were



Cross section diagram of the dam

true Westfield would indeed have cause for alarm. The spillway is, of course for flood control. With an earth dam water must never flow over the top. The spill way is 1700 feet east of the dam and is cut through solid rock. The top of the dam is 20 feet higher than the maximum elevation in the reservoir.

### The Tunnels

The first tunnel built was the Diversion Tunnel, necessary to divert the water from the dam during construction. The gates for the tunnel are located at the bottom of a 300 foot shaft in the first gate house on the Blandford side. It is 1600 feet long, and is built through solid rock. It is closed now but could be open for leveling purposes or flood control.

The power tunnel is the climax and high point of the entire project. The water enters the east portal of this tunnel (at the second gate-house, Granville side) and is carried 7200 feet under the mountain, through solid rock to a point where it reaches three steel pipes, located at such an angle as to give the water a sharp drop of approximately 300 feet to the power plant. Here turbines, transformers and generators transform the energy of the water fall into electric power.

### The Surge Tank

Another interesting sight, on the hill above the power plant, is the surge tank. It is a huge steel stand pipe, 25 feet in diameter, 207 feet high, and open to the sky. Many amusing explanations for it have been over heard. Its real purpose is indicated by its name. It is located at the upper terminus of the forementioned pipes, and when these lines are closed at the power plant below, the water may "Surge" up in the tank and spend its force harmlessly. A compressor at the bottom of the tank discharges air which makes currents and maintains the water a little above freezing.

From the power plant the water goes to the West Parish filter beds. Here it is filtered and aerated and piped on to storage at Provin Mountain.

Cobble Mountain still stands as one of the world's great accomplishments in dam building.

The material for this article was taken from an article, published in 1934, by Katherine Duke, in The Associates Press which then was the official publication of the Municipal Associates of Springfield. More of Cobble Mountain will be written in future issues of Southwoods. □

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