

Ring Bolt In Canyon Rock Brings Out Historic Lore Of Boat Trips Up River

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About three and one-half miles downstream from the site of the Hoover Dam in Black Canyon, a wash, acting as a drainage channel for the country to the east, has deposited gravel, debris and large rocks in the form of an alluvial fan, which projects brazenly into the channel of the Colorado river.

Aiding in retarding the flow of the river at this location, a reddish-gray andesite boulder of more than eighty tons weight has plunged into the swift flowing water at a point just to the east of the center of the river canyon, has lodged itself securely in the alluvial deposit. Here, by reason of its weight, structural composition and embedded position, it has successfully withstood the battering of the river floods for many years.

The intrusion of the alluvial fan and its included andesite boulder have damned the flow of the river to some extent and the waters breaking over the barriers form another of those swiftly swirling rapids which has obstructed and defeated the successful navigation of the Colorado river since it was first attempted by a lieutenant of Cortez, Hernando de Alarcon, in 1540. During the low water, and at normal stage, the river now flows to the west of the rock and the alluvial bar, extending to the east, is only covered by high floods. According to narratives of old-time trappers and dwellers along the Colorado, the river in years gone by was divided by the boulder, and the eastern portion was used by travelers in small boats as a portage in evading the rapids.

Of greater interest than the gravel bar and its effect upon the flow of the Colorado in this location is an iron bolt and ring which is securely fastened into the top of the large rock. This contrivance, from which the turbulent waters were named Ring Bolt Rapids, consists of a worn iron ring bolt holding in its grasp a smooth moisture-blackened iron ring of large diameter. Directly beneath the ring of the bolt is a 5x10x $\frac{3}{4}$ -in. iron collar covering and protecting the lead-filled aperture in the rock which holds the body of the bolt. The ring is approximately 12 inches in diameter and both ring and bolt have been forged from 1.3-8-inch round bar.

Inquiry into the reasons for the location of such a device at this particular place disclosed a chapter in the history of the Colorado river which had its inception attempt and conclusion in the years between 1849 and 1868.

In 1847 a band of Latter-day Saints, commonly termed Mormons, under the leadership of Brigham Young, crossed the Wasatch mountains and descended into the plains to the west. Finding arable soil and water available for raising crops, the Mormons founded a settlement near Salt Lake and in a few years had sent colonies into the fertile valleys to the north, west and south. The settlers going to the south eventually were halted from further colonization by the Colorado river on the east and the hundreds of miles of desert wastes to the south and west.

It was known from returning travelers that further west and southwest across these deserts and beyond a high range of mountains lay a productive coastal plain which sloped gradually to the shores of the blue Pacific. One

party of colonists had pushed on and after many hardships had reached and established a colony just over the mountains at San Bernardino, but another party had attempted to cross the desert to the west and the disastrous conclusion of the venture had given Death Valley its name.

Other reasons besides colonization for wishing to secure a satisfactory means of communication and transportation between the Mormon settlements in Utah and

around the drum of the winch.

Several trips were made with the steamer, but the rapids, rocks, and bars and frequent floods of the river discouraged the navigator and he finally abandoned his contract with the Mormon Church.

At the time this navigation project was attempted the boundaries of the empire which the Mormons hoped to control were being constantly limited and narrowed by subdivision of the southwest territory into states and by govern-

Historic Ring and Bolt



Anchored in boulder below dam site was used in early days by boatmen to pull their craft upstream through "Ring Bolt rapids." Left to right: Walker R. Young; F. S. Nickell, geologist, Bureau of Reclamation, Denver; and Ralph Lowry, Bureau of Reclamation, Las Vegas.

the Pacific ocean were the opportunities for trade and barter with the towns along the coast and for bringing in the Mormon immigrants that had arrived in Pacific Coast ports by ships from New York and England.

As the way across the desert was hazardous and uncertain, a plan was formulated to use the Colorado river for transportation. Bishop Anson Call commenced the construction of a stone fort and warehouse at a point on the river approximately eight miles above the entrance to Black Canyon. The fort was named Callville and was intended for the upper point of embarkation for the barges plying the river. A man by the name of Adams secured a contract with the Mormon Church to transport freight and immigrants and put a steamer, the "Esmeralda," into service for this purpose. In order to gain passage and control of the boat through the rapids, large rings were fastened by ring bolts to rocks or cliffs at the head of the rapids. Tow lines unwound from the drum of a steam winch on the boat were securely anchored to the rings and the boat was controlled in dropping down the rapids or guided and hauled up the rapids, respectively, by directed winding or unwinding of the line

ment surveys delineating the boundaries of these states. As one effect of these surveys the area including Callville was found to be located in Nevada and not in Utah. It was also becoming increasingly evident that the rails being pushed from the east by the Union Pacific railroad and from the west by the Southern Pacific would, in the not far distant future, reach a junction by which act a transcontinental line would cross the state of Utah and furnish more ready transportation to the Atlantic and Pacific oceans. As a result of these conditions, Mormon control along the Colorado river was lost and, as the new railroad would accomplish the mission for which the river navigation was intended, the project on the Colorado was abandoned. Fort Callville was deserted and the Mormon settlers who lived in the Moapa valley near the fort soon after abandoned their farms and withdrew into Utah.

Once more the Colorado had won its ceaseless battle to maintain its splendid isolation. At the present time only the walls are left standing at Fort Callville and the iron ring anchor in the andesite boulder at Ring Bolt Rapids remain to bear witness of another futile attempt to develop an inland empire by navigation of the Colorado river.