

## The Old Canal

The Des Moines Rapids in the Mississippi River at Keokuk were long a hazard to river navigation. For more than forty years engineers and boatmen pondered the problem of improving navigation in order to allow boats to pass over the nine miles of the Rapids in times of low water. These shoals were recognized as one of the greatest obstacles to efficient and economical transportation on the upper river between St. Louis and St. Paul. Even the canoes and pirogues of the early settlers had to be carried around the Rapids during extreme low water.

With the advent of the steamboat the problem became even more acute. Packets were stranded frequently on treacherous rocks and bars; many boats were sunk when holes were torn in their hulls. It was necessary, during low water, to unload freight carried by boats, either at Keokuk or Montrose, and lighter it over the Rapids. The lighters, built for low water navigation, were pulled either by horses walking along the shore, or by man-power. This was expensive and slow, so a simpler and cheaper method was demanded.

Surveys were begun as early as 1837 by the United States government. Robert E. Lee, then

a U. S. Army lieutenant, made the first survey. In 1849, Samuel R. Curtis, of Keokuk, incorporated a company to build a canal around the Rapids. While no work was actually done at this time, the idea was later carried out. In 1854, Lieutenant G. K. Warren of the United States Engineers made another survey, but this work was halted by the Civil War. Finally, in 1866, General J. H. Wilson drew up plans for the canal, and Congress appropriated \$200,000 for the project. In 1867 another \$500,000 was voted for canal construction, and on October 8 of that year construction was commenced at Galland, or, as it was called then, Nashville. Messrs. Henegan and Son of Mt. Vernon, Ohio, were awarded the contract.

Swedish and Irish laborers employed in the construction often locked horns. On June 25, 1870, reports of a bloody battle starting in a whiskey shanty brought a ban on the sale of liquor to the men. Several men were cut with razors and beaten in the fight. Earlier in the year, in March, Sheriff J. A. Bishop of Keokuk deputized a large posse to put down a disturbance caused by a strike against the government. Warrants to arrest the strikers "who had compelled anti-strikers to lay down shovel and hoe" were issued, the newspapers reported. To serve these warrants of arrest the sheriff summoned a posse of fifty men, mounted and armed. Eighteen strikers were arrested and sent to jail in Fort Madison. Work stoppages

were not without a ludicrous interlude, however, for on August 7, 1869, the workmen left their jobs and fled for their homes in terror, on the occasion of a total eclipse of the sun.

On August 22, 1877, the canal was officially dedicated, and the first boats passed through it. The achievement was hailed appropriately by a one-line caption in the *Gate City* of August 23: "CONSUMMATED." On the occasion of the canal opening, the paper reported that "the streets were alive with people, and flags were fluttering from a large number of public and private buildings." Government officials and representatives of the steamboat lines were special guests for the occasion. Commodore Davidson brought a delegation from St. Louis on the steamboat *Golden Eagle*. Early in the day, the committee in charge was apprised by telegram that the St. Louisans would be delayed, and, to add to the confusion, it was found that the gates of the lower lock were stuck and refused to move. The committee held a hurried consultation and decided that, rather than disappoint the crowd, the celebration would be staged if the packet *Northwestern* with important personages on board could be locked through.

"At half past two," the *Gate City* reported, "the *Montana* came sailing down the canal with flying colors, having passed through from the upper end. The *Louisa*, with the Fort Madison delegation on board, came down at three P. M."

During all this time workmen had been engaged in freeing the lower lock gates, so that "at five P. M.," the report continues, "the lower gates swung open and the Northwestern of the Keokuk-Northern Line, flying the Union Jack, with her lower deck guards and hurricane roof crowded with people entered the lower lock." Trouble with the valves used to fill the basin developed, but only momentarily. The lock filled in ten minutes and the first boat was locked through the lower entrance to the seven and six-tenths mile long canal. The bluffs were lined with cheering crowds, and the Chicago, Burlington & Quincy Railroad ran a three-car train, filled with people, over its tracks paralleling the big ditch.

Then, at six o'clock, the boats in formation, led by the *Montana*, steamed toward the middle lock. Cheering hundreds stood on the bank or rode in vehicles on the road which ran along the edge. The run was made by the boats in twenty minutes. As the *Northwestern* entered the lock, Henry Weyand "presented her with a handsome wreath of flowers. This was taken up on the hurricane deck and thrown over Major Amos Stickney," who was the engineer in charge of construction. Afterwards the wreath was draped over the boat's bell. On board the boat was U. S. Engineer, Col. J. N. Macomb, in charge of the upper Mississippi, and Montgomery Meigs, his assistant.

It was 7:30 o'clock when the boats reached the

upper, or guard lock. They then turned about for the return trip, taking in all three and a half hours for the round trip. By the time the *Northwestern* had again reached the lower lock the *Golden Eagle*, with the St. Louis contingent aboard, was being locked through. The two boats were connected by stage planks, and the formal reception, given by the city of Keokuk to the official party, began. Samuel M. Clark of Keokuk, as chairman of the executive committee, presided. He presented Judge Edward Johnstone, who made the first formal address, followed by Mayor John N. Irwin. James Brown of St. Louis replied for the boat interests. After other speeches were made, dancing followed in the boat cabins.

Mark Twain, who viewed the completed canal on one of his visits to Keokuk, described it as "a mighty work — this canal over the rapids. It is eight miles long, and three hundred feet wide, and in no place less than six feet in depth. Its masonry is of the majestic type which the war department usually deals in and will endure like a Roman aqueduct." This "majestic" masonry was of brown stone from the quarries of Wells, Timberman and Company at Sonora, Illinois. It formed an outer embankment against the encroaching river, 60 to 90 feet wide, 16 to 27 feet high. The two lift locks and the one guard lock were each 350 feet long and 80 feet wide on top. The first one was at Keokuk, the second two and a

half miles above, and the guard lock five and a tenth miles north of the middle one. The lower lock lift was ten feet, the middle eight feet. Massive lock gates weighing 110,000 pounds each were fitted on a sill. By a system of pulleys, chains, and wire ropes operated by a pump which forced water into hydraulic cylinders behind the wall of each gate, the locks could be operated by one man. The machinery was built in the Buckeye Foundry and Machine Works of Sample, McElroy and Company of Keokuk.

The engine house at each lock was twenty-seven feet, four inches square with a slate roof. Engines installed in these were twenty to thirty horse power. At the second lock, the government built its dry dock and ship yards for repair of boats. The original estimate of cost was \$2,530,000. Through delays and added construction, however, the total cost amounted to \$4,155,000. Congress appropriated a total of \$4,281,000 for the job. Broken down, the cost sheet showed the lower lock was built for \$725,000; the middle and guard locks, \$470,000; section work and excavation, \$1,900,000; channel excavation, \$475,000; and right of way and engineering costs, \$225,000.

Although he could not attend the opening ceremony, the Hon. George W. McCrary of Keokuk, Secretary of War, sent regrets in the form of a telegram in which he described the occasion as "one of deep interest to the whole country and

especially to the people of the Mississippi Valley."

For nearly four decades the old canal furnished safe passage for boats. In the winter it became a hugh skating rink, and in various sections ice fields were staked off, and ice cut and packed into houses built for that purpose. When these were filled, strings of wagons shuttled back and forth from the canal to Keokuk, to fill ice houses there. The canal even served as the "old swimming hole" in summer. Classes in this sport were organized each summer by Professor A. Schueler and Professor P. C. Hayden, both teachers of music. The goal for the pupils in these classes at the end of the season was to be able to "swim the canal."

But the Rapids, tamed for the time, were still to claim their victory — the old canal itself. The fall of water — over twenty feet — was being put to work by the development of the Keokuk water power project, and in the second week of June, 1913, the flood gates of the newly built dam were closed and the river covered the old canal.

Only two markers now remain to tell its history. One is the flashing buoy, which warns steamboat pilots of the sunken guard lock and wall, the other the brownstone bull nose of the first lock. In its deep well are housed the automatic instruments which measure the rise and fall of the Mississippi in Lake Keokuk as the water area above the dam is known today.

FREDERIC C. SMITH