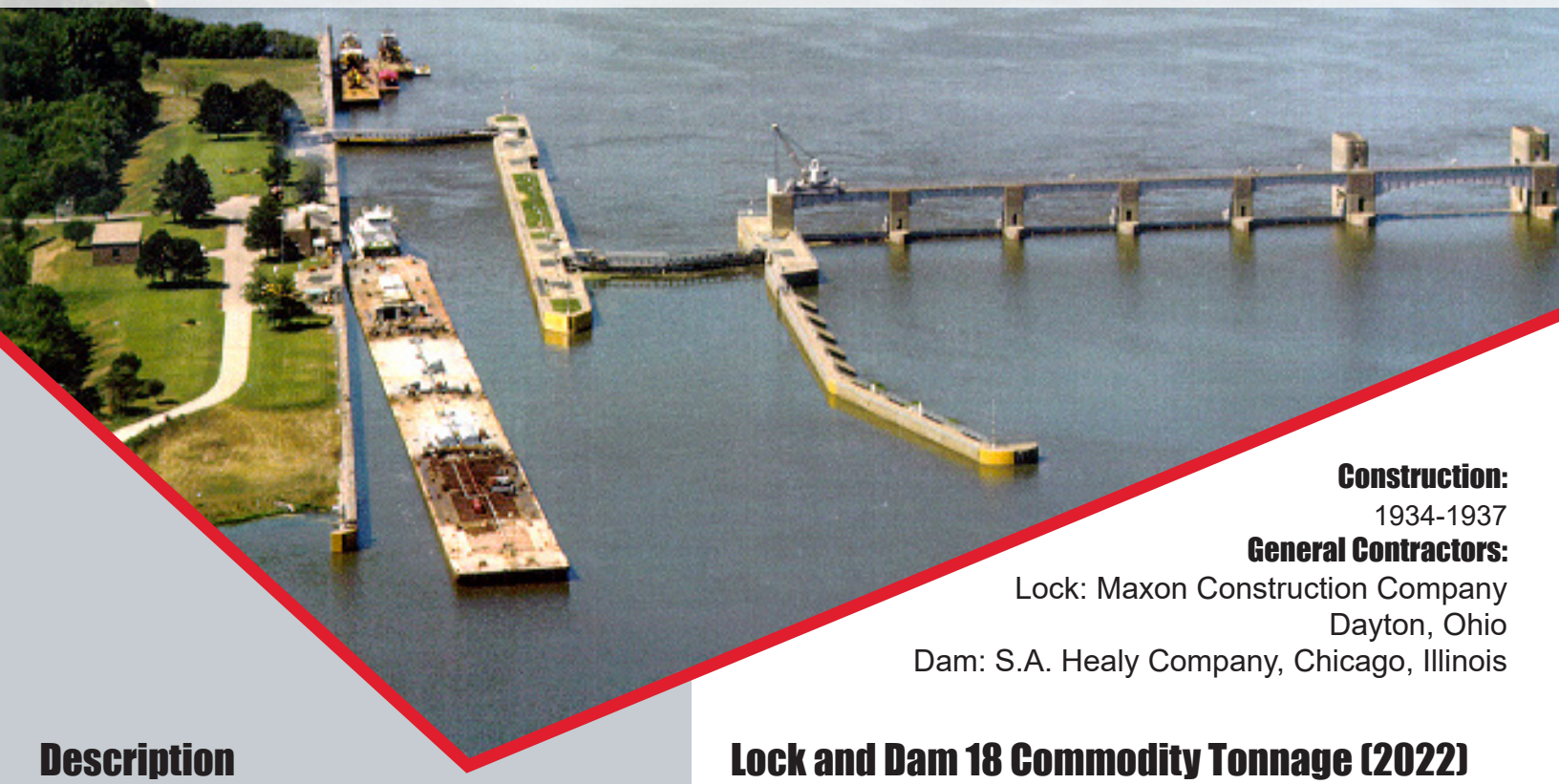
Lock & Dam 18 Mississippi River, *Gladstone, Illinois*



Construction:
1934-1937
General Contractors:
Lock: Maxon Construction Company
Dayton, Ohio
Dam: S.A. Healy Company, Chicago, Illinois

Description

Lock and Dam 18 is 410.5 miles above the confluence of the Mississippi and Ohio rivers. The bottom lands on both shores are flat and punctuated by sloughs, marshes, and reefs. The river is dotted with low islands of various sizes. The Oquawka State Wildlife Refuge is adjacent to the lock and dam complex on the Illinois shore. The installation's esplanade interrupts a levee and functions as part of the Henderson River diversion that converted Turkey Island into an extension of the Illinois shore.

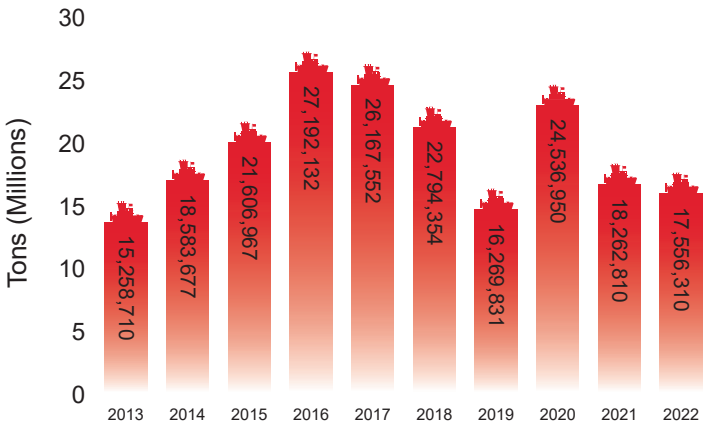
Lock dimensions are 110 feet wide by 600 feet long with additional provisions for an auxiliary lock. Maximum lift is 9.8 feet with an average lift of 6.9 feet. It takes approximately 10 minutes to fill or empty the lock.

The dam is composed of 14 submersible Tainter gates (20 feet high by 60 feet long) and three submersible roller gates (20 feet high by 100 feet long). All gates submerge to a depth of eight feet. The dam includes a submersible earth and sand-filled dike, a non-overflow earth and sand-filled dike, and two transition dikes. It takes eight hours for water to travel from Lock and Dam 17, in New Boston, Illinois, to Lock and Dam 18.

Lock and Dam 18 Commodity Tonnage (2022)

Food and Farm Products	9,907,370
Chemicals and Related Products	3,697,920
Crude Materials, Inedible, Except Fuels	1,262,710
Primary Manufactured Goods	1,248,320
Coal, Lignite, and Coal Coke	714,220
Petroleum and Petroleum Products	686,620
Manufactured Equipment & Machinery	23,350
Waste Material	--
Unknown or Not Elsewhere Classified	15,800
Total Tonnage	**17,556,310**

Annual Tonnage (10 Year- Historical)



U.S. ARMY CORPS OF ENGINEERS – ROCK ISLAND DISTRICT
CLOCK TOWER BUILDING, P.O. BOX 2004, ROCK ISLAND, IL 61204-2004
Corporate Communications Office, (309) 794-5729, www.mvr.usace.army.mil

History/Significance

Construction on Lock 18 began on Jan. 26, 1934, and was completed in April 1935. Construction on Dam 18 began in September 1935 and was completed in May 1937. The structure was placed in operation on September 8, 1937.

Dams 11 and 18 were the first in the Rock Island District to employ submersible, elliptical Tainter gates. They were also the first dams in the District to use submersible roller gates. Four sites were considered for Dam 18: just below the foot of Otter Island at mile 406.5, immediately above the old mouth of the Henderson River at mile 412.0, near Oquawka and at the current site. The selected site called for diversion of the Henderson River to a point below the dam. The final site was partially selected because the Iowa River Flint Creek Levee and Drainage District No. 16 drainage pumps discharged into the lower pool and were unaffected by raising of the water level for the upper pool.

The following winter of 1934-1935 was also so severe that little work was accomplished during January and February. The draft of the barges engaged in the construction activities was limited during the summer of 1934 due to the low river stages. During the peak of construction in September 1934, the project employed 960 men as laborers and 74 men as supervisors. Average employment was 478 laborers and 44 supervisors.

The lock and dam elements of the complex were completed at a federal cost of $4,122,400.

Lock and Dam 18 underwent rehabilitation in the early 1990's. Major work completed included lock electrical replacement, lock gate and valve machinery replacement, lock concrete repairs, lock gate and valve refurbishment, dam scour protection, and dam gate machinery and chain replacement. Rehabilitation work was intended to increase the lock's useful service window by 25 years. The lock gates and upper anchorages were replaced within the last 5 years.

Vessel & Lockage Data (2021)

Average Delay - Tows (Hours)	1.31
Barges Empty	4,872
Barges Loaded	11,617
Commercial Vessels	1,905
Commercial Lockages	2,841
Other Vessels	25
Other Lockages	24
Recreational Vessels	591
Recreational Lockages	299
Total Vessels	2,521
Total Lockages	3,164

The 9-Foot Channel Navigation Project

The 9-foot Channel Navigation Project includes 37 lock and dam sites (42 locks) on 1,200 river miles in Illinois, Iowa, Minnesota, Missouri and Wisconsin. Constructed largely in the 1930s, it extends from Minneapolis-St. Paul on the Upper Mississippi River to its confluence with the Ohio River near Cairo, Illinois, and up the Illinois Waterway to the T.J. O'Brien Lock in Chicago.

The system is often compared to a stairway with the "treads" being the pools of water created by each dam, with the locks serving as "risers," carrying boats from one river pool to the next like an elevator. This system of locks and dams provides what the rivers in their natural states couldn't – a dependable nine-foot depth for commercial navigation.

Operating the locks and dams is a continuous job as tows and recreational vessels lock through year-round, if weather conditions permit. The structures have long outlived their life expectancy but continue to operate efficiently thanks to the hard work and dedication of USACE employees who operate and maintain the structures.

The inland waterway navigation system is essential to the economy of the Midwest as well as the nation and world. More than 580 facilities ship and receive commodities within the Nation's Corn Belt Ports Statistical Area. Grains (corn and soybeans) dominate traffic; cement and concrete products are the second largest group. A modern 15-barge tow transports the equivalent of 1,050 semi-trucks (26,250 tons, 937,387 bushels of corn, or 240 rail cars). On an annual basis, the 9-foot channel project provides billions of dollars in transportation cost savings to the navigation industry.

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