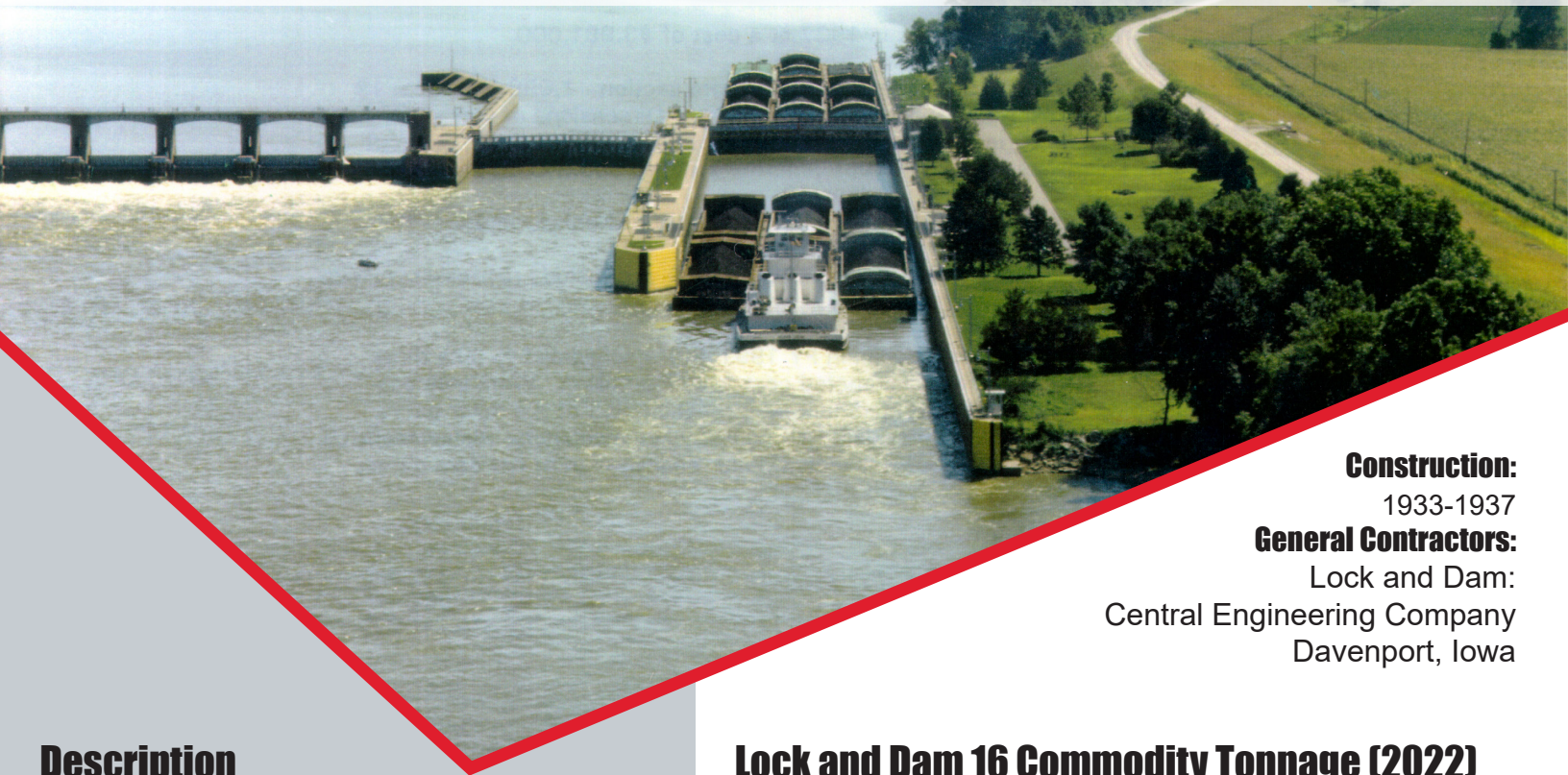


# Lock & Dam 16

Mississippi River, Illinois City, Illinois



## Construction:

1933-1937

## General Contractors:

Lock and Dam:

Central Engineering Company  
Davenport, Iowa

## Description

Lock and Dam 16 is about one mile upstream from Muscatine, Iowa, and 457.2 miles above the confluence of the Mississippi and Ohio rivers. The complex stretches across the river at a point where the valley is wide. The earthen embankment section of the dam straddles portions of Hog Island in the main channel.

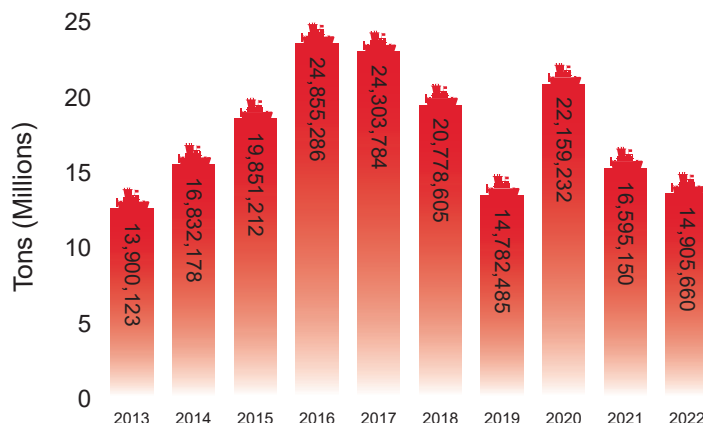
The lock dimensions are 110 feet wide by 605 feet long with additional provisions for an auxiliary lock. The maximum lift is nine feet with an average lift of 6.5 feet. It takes approximately seven minutes to fill or empty the lock chamber.

The movable dam has 12 non-submersible Tainter gates (20 feet high and 40 feet long), three submersible Tainter gates of the same dimensions, and four non-submersible roller gates (20 feet high and 80 feet long). The dam system also includes a linear, concrete capped, ogee spillway; and a submersible earth and sand-filled dike. It takes eight hours for water to travel from Lock and Dam 15, in Davenport, Iowa, to Lock and Dam 16.

## Lock and Dam 16 Commodity Tonnage (2022)

Food and Farm Products	7,935,270
Chemicals and Related Products	3,346,000
Primary Manufactured Goods	1,239,600
Crude Materials, Inedible, Except Fuels	1,090,240
Coal, Lignite, and Coal Coke	617,200
Petroleum and Petroleum Products	613,600
Manufactured Equipment & Machinery	34,950
Waste Material	24,000
Unknown or Not Elsewhere Classified	4,800
<b>Total Tonnage</b>	<b>14,905,660</b>

## Annual Tonnage (10 Year- Historical)



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## History/Significance

Construction on Lock 16 began on Nov. 17, 1933, and completed in February 1937. Construction on Dam 16 began in January 1935 and completed in February 1937. The structure was placed in operation on July 10, 1937.

Dam 16 was the last dam in the Rock Island District to employ non-submersible roller gates, as well as Tainter gates (submersible and non-submersible), which had steel sheeting on only one side. It was also the first dam in the District in which all the Tainter gates were operated by line shafts and motors housed in installations above each gate, rather than from locomotive hoist cars running on the dam's service bridge.

Funds for the design and construction of Lock 16 were provided by the National Industrial Recovery Act and the Public Works Act Appropriation. Four sites were investigated for the location of Lock and Dam No. 16: roughly 2,500 feet below the Muscatine High Bridge, at Muscatine, near Fairport and the selected site at Hog Island.

Below-normal river stages and mild winters for the entire construction period were advantageous to the contractor. The river stages ranged from a low of 531.2 to a high of 541.9 feet (mean seal level). Decisions by the contractor on the procedure to completely dewater cofferdams caused a 30-day delay in construction. The average daily number of employees on the lock facility was 335 with a peak of 735 employees on September 1, 1934. The lock and dam elements of the complex were completed at a federal cost of \$3,682,000.

Major rehabilitation was completed during the winter of 1993-94 and the lock was dewatered for inspections again in the winter of 2017-18.



## Vessel & Lockage Data (2021)

Average Delay - Tows (Hours)	0.78
Barges Empty	4,280
Barges Loaded	10,550
Commercial Vessels	2,240
Commercial Lockages	2,955
Other Vessels	28
Other Lockages	28
Recreational Vessels	349
Recreational Lockages	238
Total Vessels	2,617
Total Lockages	3,221

## 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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