



Lock & Dam 25

(Winfield, Missouri)
Mississippi River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG.

Construction: 1935-1939

General Contractor:

Lock and Dam: United Construction Company,
Winona, Minn.

Congressional District: MO-2; IL-17

Description

Lock and Dam 25 is located at Upper Mississippi River mile 241.4. It is the third southern-most dam in the system on the Upper Mississippi River. The pool length is 32 miles and accounts for 18,000 acres.

The lock consists of a main lock, located against the east bank of Bradley Island, and the upper gate bay of an auxiliary lock. The main lock has the standard 110-foot-wide by 600-foot-long chamber. The average lift is 15 feet. Both the lock and the movable dam are pile-founded structures.



The 1,296-foot long movable portion of the dam has three submersible roller gate, 25 feet high by 100 feet long, and 14 submersible Tainter gates, 25 feet high by 60 feet long. The overflow dike length for is 2,566 feet.

Lock and Dam 25 consists of 14 Tainter gates which pivot vertically and are raised or lowered to control the depth of the water in the pool upstream of the dam. In times of high water, these gates are raised completely and the river flows almost unimpeded, allowing a more natural flow of the river. The three roller gates, located near the center of the dam, also restrict the water flow, but in a manner meant to reduce erosion.

A \$52 million major rehabilitation was completed at Lock and Dam 25 in 1999.

History/Significance

The lock was put into operation on May 18, 1939. The Tainter gates of Dam 25 represented a marked advance over those installed at Old Dam 26. The gates were fully submersible to a depth of nearly eight feet, more than twice that attained at Dam 26. Additionally, the streamlined spillway that characterized the dam gates was replaced by a riveted steel sheet that entirely covered the gate's steel framework, protecting it from ice damage and providing a smooth unobstructed surface for the water to pass over the gate in its submerged position.

Annual Tonnage (20-Year Historical)

| <u>Year</u> | <u>Tons</u> | <u>Year</u> | <u>Tons</u> | <u>Year</u> | <u>Tons</u> | <u>Year</u> | <u>Tons</u> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 2015 | 24,920,093 | 2010 | 24,117,099 | 2005 | 29,043,655 | 2000 | 39,161,898 |
| 2014 | 21,673,519 | 2009 | 26,926,504 | 2004 | 27,870,702 | 1999 | 39,536,830 |
| 2013 | 17,315,949 | 2008 | 23,244,934 | 2003 | 33,749,527 | 1998 | 35,440,234 |
| 2012 | 22,163,268 | 2007 | 30,204,744 | 2002 | 38,916,145 | 1997 | 33,714,880 |
| 2011 | 23,033,059 | 2006 | 31,061,559 | 2001 | 34,855,844 | 1996 | 36,308,057 |

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Commodity Tonnage (2015)

| | |
|---|------------|
| All Units (Ferried Autos, Passengers, Railway Cars) | - |
| Coal, Lignite, and Coal Coke | 435,200 |
| Petroleum and Petroleum Products | 295,000 |
| Chemicals and Related Products | 4,222,345 |
| Crude Materials, Inedible, Except Fuels | 2,347,780 |
| Primary Manufactured Goods | 1,475,263 |
| Food and Farm Products | 16,066,195 |
| Manufactured Equipment & Machinery | 71,910 |
| Waste Material | 4,800 |
| Unknown or Not Elsewhere Classified | 1,600 |

Vessel & Lockage Data (2015)

| | |
|---------------------------------|--------|
| Average Delay - Tows (Hours) | 3.22 |
| Average Processing Time (Hours) | 1.03 |
| Barges Empty | 7,084 |
| Barges Loaded | 16,100 |
| Commercial Vessels | 2,123 |
| Commercial Flotillas | 2,099 |
| Commercial Lockages/Cuts | 3,558 |
| Non-Vessel Lockages | - |
| Non-Commercial Vessels | 34 |
| Non-Commercial Flotillas | 33 |
| Non-Commercial Lockages/Cuts | 33 |
| Percent Vessels Delayed (%) | 57 |
| Recreational Vessels | 401 |
| Recreational Lockages | 228 |
| Total Vessels | 2,558 |
| Total Lockages/Cuts | 3,819 |

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 and up the Illinois Waterway to the T.J. O'Brien Lock in Chicago.

The maintenance needs of this aging infrastructure have surpassed annual operations and maintenance funding. This limited funding has adversely affected reliability of the system and has primarily resulted in a fix-as-fail strategy, with repairs sometimes requiring days, weeks or months. Depending on the nature of a failure and extent of repairs, shippers, manufacturers, consumers and commodity investors can experience major financial consequences. Additionally, today's 1,200'-long tows must split and lock through in two operations within the Project's 600' chambers. This procedure doubles and triples lockage times, increases costs and wear to lock machinery, and exposes deckhands to higher accident rates.

More than 580 facilities ship and receive commodities within the Project. 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). Annually, the 9-foot project generates an estimated \$1 billion of transportation cost savings compared to its approximately \$115 million operation and maintenance cost.

UPDATE: May 2016

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