



Lock & Dam 22

(Saverton, Missouri)
Mississippi River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG.

Construction: 1934-1939

General Contractors:

Lock: Joseph Meltzer, Inc., New York, N.Y.

Dam: Massman Construction Co., Kansas City, Mo.

Congressional District: MO-9; IL-17

Description

Lock and Dam 22 is 301.2 miles above the confluence of the Mississippi and Ohio rivers. Bluffs rise more than 200 feet above the river west of the lock; the valley is quite wide east of the complex.

Lock dimensions are 110 feet wide by 600 feet long with provisions for an auxiliary lock. The maximum lift is 10.5 feet with an average lift of 7.5 feet. It takes approximately seven minutes to fill or empty the lock chamber.



The movable dam has nine non-submersible Tainter gates (25 feet high by 60 feet long), one submersible Tainter gate (25 feet high by 60 feet long), and three submersible roller gates (25 feet high by 100 feet long). Completing the dam system are two transition dikes and a submersible earth and sand-filled dike. It takes seven hours for water to travel from Lock and Dam 21, in Quincy, Illinois, to Lock and Dam 22.

History/Significance

Construction on Lock 22 began Dec. 28, 1933, and was completed in May 1935. Construction on Dam 22 began Sept. 21, 1936, and was completed in July 1938. The structure was placed in operation on July 22, 1938.

Two sites were investigated for the location of Lock and Dam 22. The first site at 5.3 miles downstream of Hannibal had unfavorable sub-soil conditions. Thus, the existing site 7.8 miles downstream of Hannibal was selected.

It was on the submersible roller gates at Dam 22 that the Rock Island District introduced the Poiree dam trestles to mitigate scour problems. The trestles were subsequently used as a retrofit solution on other Project dams. The District also incorporated an experimental design for a submersible roller gate with end shields and introduced a new type of non-submersible, truss-type Tainter gate. It was also on this dam's submersible roller gates that the St. Paul District Hydraulic Laboratory conducted tests that led to the design of stilling basins for roller gates.

Extreme hot weather during the summer 1934 caused construction delays. A record high 116°F was recorded on July 20, 1934. However, winter temperatures were mild for the most part. Favorable river stages existed during the entire construction period. Rainfall was considerably below normal due to the drought during summer 1934. From Nov. 30 to Dec. 10, 1934, construction progress was practically stopped due to accidental flooding of the cofferdam area. The average daily number of men employed by the contractor on the lock was 327 with a maximum of 959 on Oct. 31, 1934. Due to high river stages in April 1937, the dam construction was delayed for six days.

The lock and dam elements of the complex were completed at a federal cost of \$3,943,000.

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) 794-5274, www.mvr.usace.army.mil

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	24,643,731	2010	23,643,750	2005	27,371,325	2000	36,812,642
2014	21,345,591	2009	26,043,486	2004	26,731,864	1999	38,074,304
2013	16,996,396	2008	22,264,425	2003	32,210,205	1998	34,086,190
2012	21,834,782	2007	28,908,447	2002	37,567,046	1997	32,418,424
2011	22,475,759	2006	29,789,804	2001	33,315,392	1996	35,047,950

Commodity Tonnage (2015)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	433,600
Petroleum and Petroleum Products	310,900
Chemicals and Related Products	4,294,385
Crude Materials, Inedible, Except Fuels	2,281,180
Primary Manufactured Goods	1,546,562
Food and Farm Products	15,710,104
Manufactured Equipment & Machinery	57,600
Waste Material	4,800
Unknown or Not Elsewhere Classified	4,600

Vessel & Lockage Data (2015)

Average Delay - Tows (Hours)	3.45	Non-Commercial Vessels	27
Average Processing Time (Hours)	0.81	Non-Commercial Flotillas	24
Barges Empty	6,818	Non-Commercial Lockages/Cuts	24
Barges Loaded	15,805	Percent Vessels Delayed (%)	88
Commercial Vessels	2,168	Recreational Vessels	241
Commercial Flotillas	2,151	Recreational Lockages	185
Commercial Lockages/Cuts	3,594	Total Vessels	2,436
Non-Vessel Lockages	-	Total Lockages/Cuts	3,803

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