



Locks & Dam 15

(Rock Island, Illinois)
Mississippi River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Construction: 1931-1934

General Contractors:

Lock: Merritt-Chapman & Whitney Corp., Duluth, Minn.

Dam: D.A. Healy Company, Detroit, Mich.

Congressional District: IA-2; IL-17

Description

In the heart of the Quad Cities, Locks and Dam 15 is 483 miles above the confluence of the Mississippi and Ohio rivers. The complex stretches across the Mississippi River at one of its narrowest points at the foot of the Rock Island Rapids. The complex extends from the northwest tip of the Army's Arsenal Island on the Illinois side, to a small area of flat-bottom land on the Iowa side. A roadway and railroad bridge, joining Davenport and Rock Island, spans the site.



The main lock is 110 feet wide by 600 feet long; the auxiliary lock is 110 by 360 feet. Both have a maximum chamber lift of 16 feet with an average of 13 feet and takes about seven minutes to fill or empty. Each lock gate weighs nearly 82 tons. The 1,203-foot-long movable dam is the largest roller dam in the world consisting of 11 non-submersible 100-foot-long roller gates with 11 control houses. Nine gates are 19 feet 4 inches in diameter and two are 16 feet 2 inches. It takes three hours for water to travel from Lock and Dam 14, in Pleasant Valley, Iowa, to Lock and Dam 15.

History/Significance

Construction on Lock 15 began on April 9, 1931, and was completed in December 1932. Construction on Dam 15 began in 1932 and was completed in May 1934. The structure was placed in operation on March 7, 1934.

The complex was the first 9-Foot Channel Project complex which served as a prototype for the whole system. Dam 15 is unusual among the Project as it is the only dam on the River made entirely of roller gates as it was constructed at the narrowest part of the channel and is subject to ice and debris jams; is built at a 16-1/2 degree angle to gain additional dam area for maintaining the nine foot navigation channel; employs roller gates that are non-submersible, of differing sizes, and of non-standard length; is not at a right angle to the river; includes no earthen embankment dike section; incorporates a power plant that generates electricity to operate its gates and valves; and uses an open-truss service bridge with a bulkhead-lifting crane on its lower chord. The complex is also unusual because the intermediate locks' wall encases a bridge swing span.

The contractor for the lock construction was favored with low river stages, a mild winter of 1931-1932 and satisfactory labor conditions. No serious difficulties were encountered in the construction of the locks. The average number of men employed was 221. For construction of the dam, the maximum number of men employed was 280 during the latter part of November 1933.

The lock and dam elements of the complex were completed at a federal cost of \$7,480,000.

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) 794-5729, 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>
2016	23,803,628	2011	17,250,083	2006	21,942,068	2001	24,708,731
2015	19,148,356	2010	17,923,333	2005	20,991,007	2000	28,753,278
2014	16,453,426	2009	18,274,953	2004	20,948,490	1999	31,209,760
2013	13,705,556	2008	15,635,867	2003	25,019,206	1998	27,168,117
2012	16,835,910	2007	20,880,043	2002	28,829,063	1997	25,826,822

Commodity Tonnage (2016)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	1,489,300
Petroleum and Petroleum Products	149,107
Chemicals and Related Products	3,942,832
Crude Materials, Inedible, Except Fuels	2,188,101
Primary Manufactured Goods	1,489,050
Food and Farm Products	14,385,808
Manufactured Equipment & Machinery	151,730
Waste Material	3,000
Unknown or Not Elsewhere Classified	4,700

Vessel & Lockage Data (2016)

Average Delay - Tows (Hours)	2.55	Non-Commercial Vessels	76
Average Processing Time (Hours)	0.69	Non-Commercial Flotillas	73
Barges Empty	6,760	Non-Commercial Lockages/Cuts	73
Barges Loaded	15,131	Percent Vessels Delayed (%)	68
Commercial Vessels	2,694	Recreational Vessels	1,437
Commercial Flotillas	2,637	Recreational Lockages	614
Commercial Lockages/Cuts	3,935	Total Vessels	4,207
Non-Vessel Lockages	-	Total Lockages/Cuts	4,622

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). In 2015, the 9-foot channel project generated an estimated \$3 billion of transportation cost savings compared to its approximately \$246 million operation and maintenance cost.

UPDATE: April 2017