Lock Operation Basics

A navigation lock is used as a sort of “water elevator” to get from one water level or “pool” to another. Water always seeks a lower level, so valves and tunnels are used to raise and lower the water in the Lock. No pumping is required in the process.

For a boat going from a higher level to a lower level (e.g. from the river into the canal), the lock is filled by opening the filling valve. The upper and lower gates are closed. The water level of the chamber rises to the upstream level. The upper gate then opens and the boat moves in.

To lower the boat, the gates are closed behind it. Then the filling valve is closed and the emptying valve is opened. The pressure of the higher water in the lock drains to the downstream level in minutes.

The lower gates are then opened and the boat moves out on the lower water level.

History

From the early 1700s, Bayou Plaquemine served as a commercial transport route, promoting settlement and economic prosperity in southwest and central Louisiana by linking the Mississippi with the Atchafalaya, Red, and other Rivers. A lock was built at Plaquemine in 1909. Increased traffic during and after World War II strained the lock’s capacity. The need for greater capacity was fulfilled by completion of the alternate GHWW route and larger Port Allen Lock in 1961.

Plan Your Visit

The Port Allen Lock welcomes the public from 8:00 AM to 4:00 PM, Monday through Friday. For large groups, or visits outside these hours, please call the office. There is no admission charge. The public boat launch is open 24 hours per day, seven days a week.

Remember these important water safety tips:

1. Wear a lifejacket when boating.
2. Learn to swim.
4. Swim only in designated areas.
5. Watch children at all times around water. NEVER leave a child unattended.
Safer, cheaper, greener

Compared to transportation by truck or train, inland waterway barge transportation is:
- less costly
- safer
- more energy-efficient
- less polluting

One of the missions of the USACE is to facilitate the safe, reliable and economically efficient movement of vessels. It does so by constructing and maintaining navigation channels and harbors, and regulating water levels on inland waterways.

The Mississippi River and its tributaries and the GIWW connect Gulf Coast ports; Mobile, New Orleans, Baton Rouge, Houston, and Corpus Christi, with major inland ports, including Memphis, St. Louis, Chicago, Minneapolis, Cincinnati and Pittsburgh.

Fuel Efficiency

Distance one gallon of fuel can carry one ton of cargo

155 miles by TRUCK
413 miles by RAIL CAR
514 miles by BARGE

Capacity and Safety

Barges mean:
- Less congestion and fewer accidents
- Hazardous cargo is kept far from populated areas

1 Barge of liquid cargo equals 46 Rail Cars or 144 Trucks

Environmental Impact

Tons of Green House Gases (GHG) per Million Ton-Miles

Port Allen Lock

The Nation’s Inland Waterways

Vital to the nation’s economy and world trade

The United States is number one in the world in the total value of waterborne commerce. The mighty Mississippi River carries more than one-third of the nation’s waterway tonnage. The Lower Mississippi River carries over 300 million tons of cargo each year and its ports from New Orleans to Baton Rouge are the busiest in the nation.

The GIWW links deep-water ports, rivers and other navigable waterways from the Mexican border to Apalachicola, Florida. It took 30 years to build the GIWW, which was completed in 1949. It serves as a “water interstate highway” across the Gulf Coast region, protected from open-water risks. The GIWW carries about 16 percent of the of the nation’s total internal waterway tonnage. This includes about three-quarters of the country’s refined petroleum and petrochemical products, plus huge quantities of other minerals and farm products. The Louisiana portion of the GIWW has the most traffic and carries an average of 117 million tons of freight per year, valued at over $75 billion annually.

It is estimated that the GIWW saves shippers over $3 billion annually, supports 15,000 direct jobs within barge and towboat companies, as well as 50,000 support service jobs. The GIWW also supports 400,000 indirect jobs within plants, refineries, and factories.

An important link in the nation’s transportation system

Port Allen Lock is a vital link between the two most important commercial waterways in North America – the Mississippi River and the Gulf Intracoastal Waterway (GIWW). The Morgan City – Port Allen Alternate Route is a 160-mile shortcut for barge traffic that otherwise would have to travel the lower Mississippi to New Orleans to reach the GIWW. The GIWW Alternate Route and Port Allen Lock were completed in 1961. The Lock is located at the northernmost point on the Mississippi River where barge traffic can pass into, or out of, the GIWW.

The Port Allen Lock is staffed and operated 24 hours a day, seven days a week. It averages about 6,100 lockages annually, with total cargo of 26 million tons. On average there are 16 lockages per day or one every 90 minutes. The typical barge tow passing through the lock consists of a tow boat and 1 to 6 barges.