THE PROJECT

The Bonnet Carré Spillway is located in St. Charles Parish, La., about 33 river miles above Canal Street in New Orleans, and was built to prevent the excess of floodwaters downstream of the Spillway from Mississippi River floods to and lower river stages generally, by discharging excess floodwaters into Lake Pontchartrain and thence into the Gulf of Mexico.

The Spillway is a vital component of the overall project for the control of floods in the alluvial valley of the Lower Mississippi that was constructed by the U.S. Army Corps of Engineers New Orleans District, under the supervision of the Mississippi River Commission.

In a major or project flood, it can be operated alone or in combination with the Morganza Spillway (located on the west bank of the Mississippi, 50 miles north of Morgan City) and the Old River Control Structures (95 miles north of Morgan City).

Bonnet Carré has been operated by the Army Engineers on four occasions since its completion in 1932. It was first opened during government agencies, and in 1945, again in 1958 and, most recently, during the most prolonged flood of the century in 1973, when the Spillway’s operation actually lowered river stages at New Orleans by 3.5 feet. All of the structure’s 350 bays were opened on the latter three occasions, while only 285 gates were utilized in 1937.

CONSTRUCTION

Surveys and design were initiated by authority of the Flood Control Act of 1928. Construction of the Spillway was started in 1929 and completed in the spring of 1931.

The guide levees were completed in 1932. The highway and railroad crossings were completed in 1936. The cost of the completed work is $14,213,200.

OPERATION OF STRUCTURE DURING 1931 FLOOD

WEIR STRUCTURE

The Weir Structure is founded on unweathered timber pilings and has a steel sheet piling cutoff wall 45 to 55 feet in depth on the river side of the weir. Beyond the laterally row of battle piers there is a heavily articulated concrete cap 175 to 225 feet wide underlain by an inverted filter of gravel, pebbles, and sand. The structure consists of 365 bays each 20 feet in width separated by reinforced concrete piers 2 feet thick which carry two 1-beam operating bridges. There are 176 bays, in four groups, with weir crest at elevation 11.6 feet mean sea level and 174 bays, in 2 groups, with weir crest at elevation 16.6 feet mean sea level. The bays are each closed by two crested girders whose actual cross-sectional dimension is 8" x 11-1/2" to permit operation without bending and whose lengths are 10 and 12 feet, depending on the elevation of the weir crest. Guide levees confine the flow in the floodway 7,700 feet wide at the river, flaring out gradually to 12,400 feet wide at the lake end.

Under normal operating procedure, about 36 hours are required to open the Spillway completely. Authority for the operation of the Spillway is furnished by the Flood Control Act of 1928.

STATISTICS

Distance Above Canal St., New Orleans, La. (by River) 32.8 miles Length of Spillway (River to Lake) 5.7 miles Widths of Floodway (at Lake) 12,400 feet Widths of Floodway (at River) 7,700 feet Length of Weir, Opening 7,300 feet Average Height of Levees 19 feet Frequency of Operation (Estimated) 10 years Design Capacity 265,000 cubic feet per second, or about 1,875,000 cubic feet per second. The current is transporting 1,250,000 c.f.s., or 9,375,000 gallons per second, below Bonnet Carré Spillway.