BAYOU BODCAU RESERVOIR
LOUISIANA AND ARKANSAS

U. S. ARMY ENGINEER DIVISION, LOWER MISSISSIPPI VALLEY
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA
REVISED JUNE 1963
PERTINENT DATA

DRAINAGE AREA, sq miles ... 656

ELEVATIONS, feet m.s.l.
Conservation pool ... none
Flood control pool ... 199.5
Spillway crest ... 219.0
Crest of dam ... 230.0
Outlet works intake invert ... 157.0

VOLUMES, acre-feet
Flood control pool ... 357,300
Spillway crest pool ... † 967,900

AREAS, acres
Damsite ... 1,666
Flood control pool ... 21,000
Spillway crest pool ... 44,950

DISCHARGE CAPACITIES, c.f.s.
Outlet works (f.c. pool) ... 3,200
Spillway ... 71,000

DIMENSIONS, feet
Dam, length ... 11,900
Dam, maximum height ... 76
Dam, height above mean valley ... 70
Dam, average base width ... 530
Spillway width ... 4,000

STRUCTURAL DATA
Dam, earthfill, cu yd ... 2,320,000
Crown width, ft ... .30
Embarkment slope (above
200 ft m.s.l.) ... 1 on 3
Embarkment slope (below
200 ft m.s.l.) ... 1 on 4
Riprap paving, cu yd ... 6,585
Spillway, weir-type (broad-
crested) concrete, cu yd ... 13,600
Reinforcing steel, lb ... 902,000
Conduits, 2 each, ft, diameter ... *10

† Total to spillway crest
* Intakes restricted to 6 by 6 ft.

VISITORS ARE WELCOME

The Corps of Engineers extends an
invitation to visit the Bayou Bodcau
Dam and Reservoir Project.
HISTORY

Bayou Bodcau Dam and Reservoir were constructed by the Corps of Engineers, U.S. Army, under the supervision of the Secretary of the Army, the Chief of Engineers, and the Division Engineer, Lower Mississippi Valley Division, Vicksburg, Mississippi, with the District Engineer, New Orleans District, New Orleans, Louisiana, in immediate charge of the project. Bayou Bodcau Reservoir is a part of the comprehensive flood control plan for the Red River Basin, authorized by the Flood Control Act dated 24 July 1946, Public Law No. 526, 79th Congress, 3rd Session. Construction of the dam was initiated in April 1947 and completed in December 1949.

Flooding on Bayou Bodcau, since construction, resulted in pool stages of 184.9 feet m.s.l. in February 1950; 187.0 feet m.s.l. in May 1953; 184.4 feet m.s.l. in May 1957; and 196.7 feet m.s.l. in May 1965.

THE DAM

The dam, located on Bayou Bodcau about 23 miles northeast of Shreveport, Louisiana, is designed for flood control. The dam with the outlet works controls the floodwaters and provides substantial protection from flood damages below the dam. The most prominent feature of the project is the main embankment. This embankment is about 76 feet high with a top length of 2,578 feet and a cross section 400-foot uncontrolled spillway located 4,500 feet above the north or right abutment. Its construction required the placement of some 2,307,000 cubic yards of earth. The top width of the dam is 30 feet and the average base width is about 530 feet. The earth was placed in 6-inch layers with impermeable materials upstream and pervious materials downstream of the axis of the dam. The upstream and downstream slopes of the dam were sodded with grass, making the dam resistant to erosion by wave wash and rainfall.

Water flows through the reinforced-concrete, uncontrolled outlet conduits located in the south or left abutment of the dam whenever the reservoir pool level is above the invert elevation of the conduits. A maximum flow of 3,200 cubic feet per second will be obtained when the reservoir pool level is at the flood control stage. This is the design capacity and it approximates the channel capacity below the dam. Although storage provided in the reservoir below elevation 199.5 feet is sufficient to control completely all floods equal to those of record, a spillway is provided as a safety device for the dam should a greater flood occur. The spillway is of the uncontrolled broad-created weir type, 4,600 feet in length, and is located in the north or right abutment. It was necessary to excavate about 570,000 cubic yards of earth for its construction. The weir is paved with a concrete slab to control erosion. The spillway may never be utilized, however, it would be an important factor in preventing destruction of the dam should an unprecedented flood occur.

THE RESERVOIR

During periods of high water, the lake at flood control pool elevation of 199.5 feet m.s.l. will cover 8,100 acres and extend 30 miles upstream with the north end in Lafayette County, Arkansas. Project acreage in Arkansas encompasses 1148.1 acres of Government fee owned land and 1213.36 acres over which easements only were acquired. The total project acreage acquired by the United States (including fee and easement acreage) amounts to 36,127.52 acres.

The dam does not retain a permanent pool. The reservoir is maintained in its natural state except during periods of impoundment of floodwaters. The creation of a permanent pool would hasten the destruction of vegetation in the pool area, thus increasing the susceptibility of the upstream sodded slope of the dam to wave wash.

The reservoir area has limited possibilities for public use, such as hunting and fishing. The general public has free access to and use of the area subject to such regulations as may be necessary in the interest of safety and control of the project. Hunting and fishing are subject to State and Federal laws for the protection of fish and game.

RECREATION

The Bossier Parish Police Jury maintains Ivan Lake, which covers 520 acres of reservoir lands in the vicinity of Phillips and Chemin Creek in Bossier Parish. The dam was constructed by the State of Louisiana Department of Public Works in 1956. The Bossier Parish Police Jury has jurisdiction over the lake area and is responsible for the health and welfare of the general public that visits in this locality.

The Louisiana Wildlife and Fisheries Commission has been granted a license to manage all wildlife resources on Government-owned lands in the Louisiana portion of the Bayou Bodcau Reservoir Project. A major waterfowl and upland game management and hunting area is available to the public. Picnic facilities, rest rooms, and potable water are available on both sides of the dam near the outlet works.

The reservoir is under the supervision of the reservoir superintendent stationed at Texarkana Dam (Lake Texarkana), Midway Reservoir Office, Texarkana, Texas. More detailed information may be obtained at his office, P. O. Box No. 1817, Telephone 791-6209, Texarkana, Texas.
THE BAYOU

Bayou Bodcau originates near Hope, Arkansas, and flows for about 90 miles in a southerly direction into Louisiana to the dam. From the dam it continues its southerly course for 72 miles under the names of Bodcau Lake, Red Chute, Flat River, and Loggy Bayou to enter Red River. The entire watershed is comprised of about 1130 square miles, of which 656 square miles of the basin are upstream of the dam. The average slope of the bayou above the dam is 1.5 feet per mile. Below the dam, Bodcau Lake decreases the slope and makes the channel capacity indeterminate. The natural discharges of the stream at the damsite varied between a minimum of zero and a maximum of 24,900 cubic feet per second, estimated for the flood of May 1930. Such variations in flow have in the past resulted in disastrous floods.

PURPOSE

The reservoir provides 357,300 acre-feet of storage for floodwaters (1 acre-foot = 1 acre, 1 foot deep or 325,850 gallons). It controls all floods of record and protects 72,000 acres of fertile bottomland below the dam.