

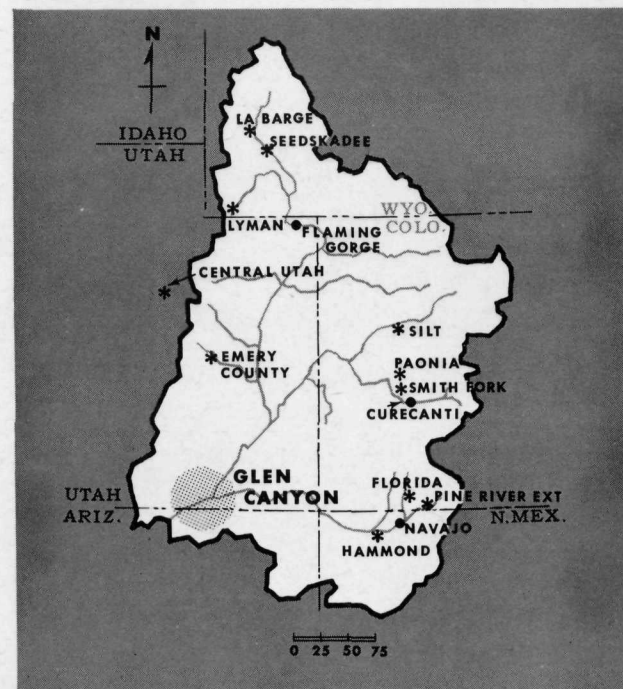
U.S. DEPARTMENT OF THE INTERIOR, STEWART L. UDALL, *Secretary*

Bureau of Reclamation, Floyd E. Dominy, *Commissioner*

GLEN CANYON DAM



THE PROJECT AND THE DAM



PHYSICAL DATA—GLEN CANYON STORAGE UNIT

DAM

Type: Concrete arch.	
Height above river bed..... ft.	580
Height above lowest point in foundation..... ft.	710
Crest length..... ft.	1,500
Crest width..... ft.	25
Base width..... ft.	340
Concrete..... cu. yds. (dam)	4,830,000
	(powerplant) 275,000
There are 3/4 million cu. yds. in Hoover Dam, and 10 1/2 million in Grand Coulee.	
Crest elevation..... ft.	3,715
Maximum discharge through spillways..... sec. ft.	276,000

RESERVOIR

Capacity..... ac. ft.	28,040,000
Area..... acres	162,700
Elevation reservoir water surface..... ft.	3,700
The river elevation at Glen Canyon is 3,142 ft.	
Length..... miles	186

POWERPLANT

Capacity..... kw.	900,000
Number of units.....	8
Capacity of each generator..... kw.	112,500
Capacity of each turbine..... hp.	155,500

The Glen Canyon Dam, Powerplant, and Reservoir, which will be known as Lake Powell in honor of the western explorer and geologist, John Wesley Powell, are the principal storage and power features of the Upper Colorado River Storage project. The dam will be on the Colorado River in Arizona, 13 river miles below the Utah border. Lake Powell will store about 28,000,000 acre feet of water—next in size to Lake Mead, downstream, America's largest man-made lake—to help solve a water resource development problem in the Colorado River Basin.

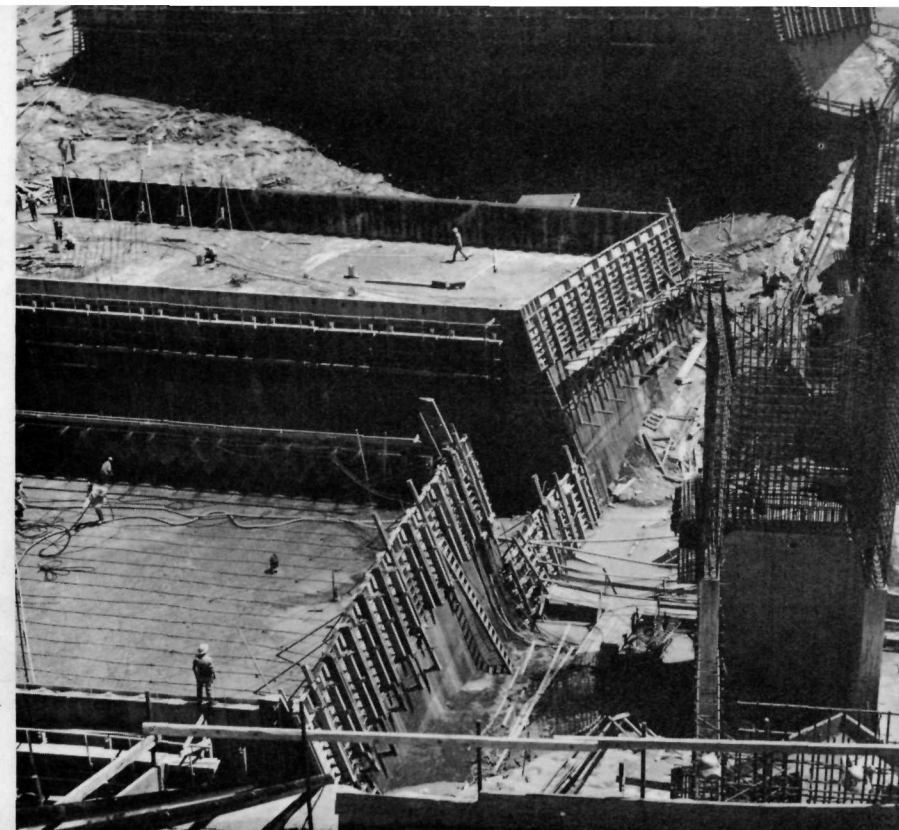
The crux of the problem is the division of the river's water between the Upper and Lower Basins of the Colorado River, as provided by an interstate compact. The volume of water flowing down the Colorado fluctuates sharply from year to year. Consequently, there must be long-term holdover storage capacity in order to meet downstream needs and compact requirements—including requirements for Mexico under an international treaty—and still permit the Upper Basin States to deplete the river for upstream use.

This problem will be solved by construction of a system of storage dams and reservoirs in the Upper Basin, of which Glen Canyon, the largest, is one of four initial units authorized. Only 15 miles above the dividing line between the Upper and Lower Basins, it will store no water for use upstream or in the immediate vicinity of the dam, but is the principal unit storing water to regulate the river and thereby fulfill compact commitments to the Lower Basin. The sale of hydroelectric energy generated at the multipurpose dams will return practically all of the cost of the project and a large part of the cost of 11 participating irrigation projects authorized for initial Upper Basin development. That, in general, is how Glen Canyon

Dam on the Colorado and three other initial dams on its tributaries will aid in developing the area. The participating projects just referred to, and scattered throughout the Upper Basin (11 of them authorized for construction), will irrigate about 130,000 acres in new farms and improve irrigation on about 230,000 acres in old ones. Some 25 other projects are under various phases of study. Farming, in consequence, will greatly increase. Water from the 4 big storage reservoirs will, as planned, turn generators of about 1,200,000-kilowatt capacity, and industry will use the power. Mineral deposits of inestimable value, uranium among them, will be mined. Flood control and navigation on the Colorado will be improved, and the nation's playgrounds will be greatly enlarged, for some of the world's finest recreation places will lie along the shores of the reservoirs or lakes that will form behind the dams.

Glen Canyon Storage Unit will be the keystone in this whole structure. The dam spans the river near its exit from the Upper Basin, as if in the spout of a great funnel where it can control all of the water in the funnel's cone—the Colorado's own flow and all that its tributaries feed into it upstream from the dam. The powerplant will generate about 75 percent of the project's total power and the reservoir will contribute about 75 percent of the water storage that the Congress authorized in 1956 as initial development for the Upper Basin. This reservoir or lake, extending 186 miles behind the dam, will be flanked by remarkably beautiful scenery. The Nation's gain in new public and private wealth will be tremendous.

The Federal Government will finance the project, but the people who use the water and power will repay about 99 percent of the cost—about two-thirds with interest.



CONSTRUCTION

Glen Canyon Dam, like all large Reclamation dams, is being built by private construction companies that are awarded contracts by competitive bidding. The prime contract, totaling \$107,955,122, was awarded to the Merritt-Chapman and Scott Corporation of New York City, April 29, 1957. It provides for construction of the dam and powerhouse and is the largest single contract the Bureau has ever awarded and probably the largest for any type of construction project.

By June 1960, the contractor had completed the diversion and spillway tunnels, lined them with concrete, built the coffer dams (temporary earth structures diverting the river around the damsite during construction), and excavated the foundation of the dam. First placement of concrete in the foundation of the dam and powerhouse was observed by public ceremonies at the damsite on June 17, 1960. Initial storage of water behind the dam is scheduled for early 1962.

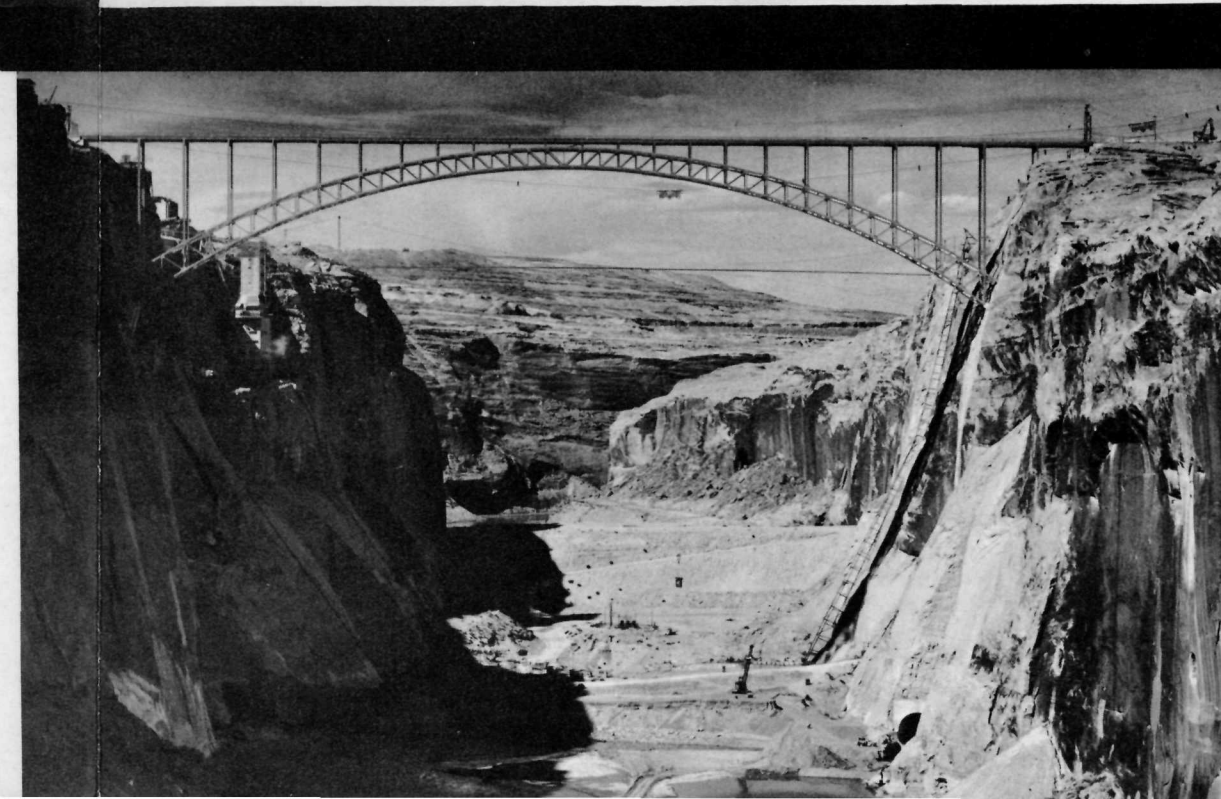
A \$6,392,000 contract for the manufacture of eight 155,500-horsepower, 150-r.p.m., vertical-shaft hydraulic turbines for the powerplant has been awarded to the Baldwin-Lima Hamilton Corp. Additional contracts for generators and other adjuncts will be awarded later to equip the dam and powerplant. Glen Canyon's first hydroelectric generating unit is scheduled to go on line in 1964.

BRIDGE AT THE DAMSITE

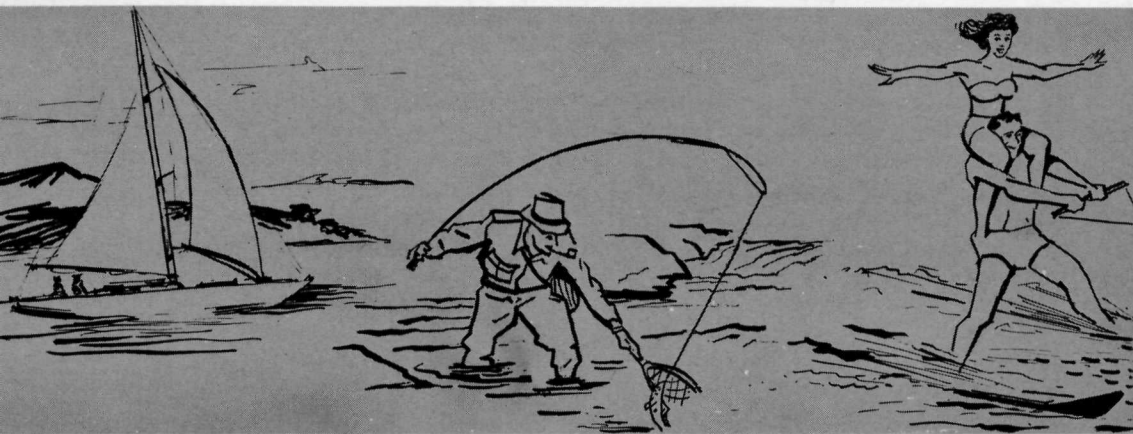
Bridges were among the first essentials at Glen Canyon damsite. The vertical walls of the Canyon rise about 700 feet above the river. The distance from rim to rim is only 1,200 feet in a straight line, but it is about 190 miles by road.

The Glen Canyon Bridge, a spectacular rim-to-rim highway, spans the canyon immediately downstream from the dam. It is the highest and second-longest steel arch bridge in the United States; its 1,028 foot arch stands 700 feet above the river. The deck is 1,271 feet long. The roadway is 30 feet wide and is paralleled by 4-foot sidewalks. The bridge was dedicated and opened to public use on February 20, 1959.

Materials and equipment are transported to the canyon floor by highlines—heavy cableways stretched between towers, two on each rim. Loads of 50 tons are lowered from them on pendant hooks.



RECREATION PLANS

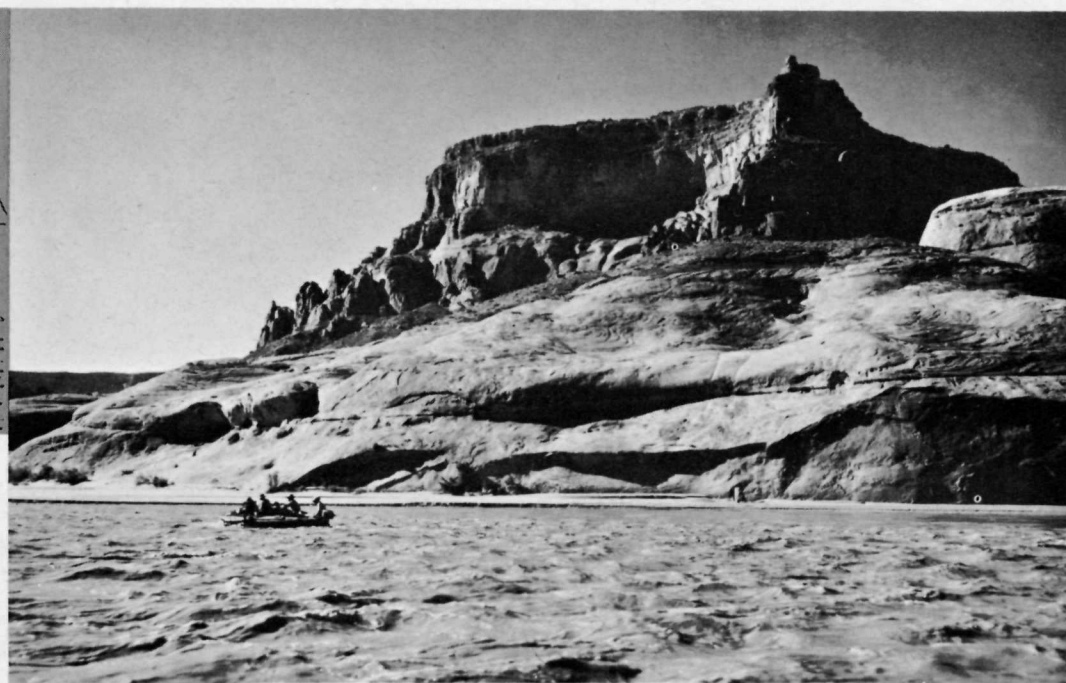


The Glen Canyon of the Colorado River is an unusually placid, 162-mile reach from Hite, Utah, to Lees Ferry, Arizona. Major John Wesley Powell, who headed the first expedition down the river in 1869, named it Glen Canyon because of the occasional oak glens along its banks and at its junctions with tributaries.

The 186-mile-long Glen Canyon Reservoir (Lake Powell) will extend upstream into Cataract Canyon. The lake and adjoining lands have been established as the Glen Canyon National Recreation Area under the National Park Service of the Department of the Interior. This is the status of Lake Mead and its environs behind Hoover Dam.

The Park Service will soon undertake construction of recreational facilities for public use as Lake Powell begins to fill in 1962. The Glen Canyon Recreation Area promises to become one of the Nation's outstanding tourist attractions.

Lake Powell, behind Glen Canyon Dam, will be flanked by varied and beautiful scenery.



The first placement of concrete—June 17, 1960.



HIGHWAYS TO GLEN CANYON DAM.—Excellent, new, paved highways have been built to the Glen Canyon damsite. A 76-mile highway through the highly scenic area has been built from Kanab, Utah, to the damsite. A new 25-mile highway extends northward from Bitter Springs to the damsite. Both of these highway links connect with the Glen Canyon Bridge to form a new link in U.S. Highway 89. The Glen Canyon Bridge was completed in February 1959.

DISTANCES TO GLEN CANYON FROM:

Kanab, Utah	76 miles
Flagstaff, Arizona	135 miles
(Flagstaff and Marysvale, Utah, 190 miles from the damsite, are nearest railheads.)	
Cedar City, Utah	161 miles
Phoenix, Arizona	300 miles
Salt Lake City, Utah	384 miles
National Parks:	
Zion	100 miles
Bryce	138 miles
Grand Canyon, North Rim	124 miles
Grand Canyon, South Rim	142 miles

• Two 16 mm. color, sound films, *CANYON CONQUEST* and *KEY TO THE FUTURE*, are available upon request for showing to school and civic groups, clubs, and other public gatherings. Both films show men and machines at work on this challenging Reclamation project. Send your requests to: U.S. Department of the Interior, Bureau of Reclamation, P.O. Box 360, Salt Lake City 10, Utah. Eastern area residents may write to the U.S. Department of the Interior, Bureau of Reclamation, Washington 25, D.C.

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