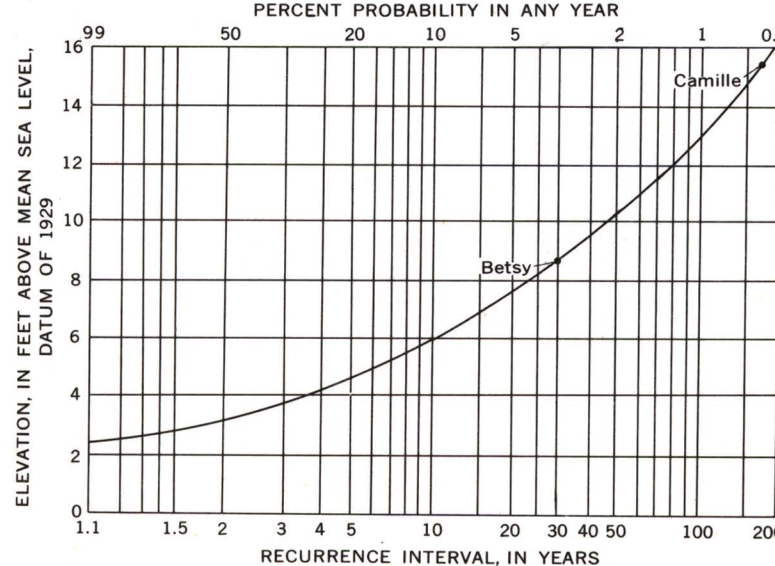




HYDROLOGIC INVESTIGATIONS
ATLAS HA-402

Storm-tide frequency.—Frequency of high storm tides along the Mississippi gulf coast can be derived from a statistical evaluation of the tidal records from the Biloxi gage. The frequency, expressed as the relation of recurrence interval to elevation of high tide at the Biloxi gage, is shown in figure 2. Recurrence interval is inversely related to percent probability of an event being equaled or exceeded in any 1 year. The percent probability of high tide elevations at the Biloxi gage is also indicated. At the Biloxi gage, Hurricane Camille tides are estimated to have a recurrence interval of about 170 years; that is, it may be equaled or exceeded on the average of about 6 times in a thousand years. Hurricane Betsy (1965) tides are estimated to have a recurrence interval of 30 years.



Because of the dissipation of the elevations of tidal waves as they move into the bays and estuaries, the frequency data for the Biloxi gage is applicable only for the gage site. It can be assumed that the frequency of a particular high tide at nearby points along the Mississippi Sound beach areas is approximately the same as the frequency for that tide determined at the Biloxi gage.

Variations in maximum tide elevations.—Water-surface elevations for the maximum tides of Camille (and Betsy) varied from point to point, especially along the beach front. Maximum water-surface elevations shown are generally averages of several floodmarks. Maximum water-surface elevations offshore were determined to be between 15 and 16 feet from floodmarks on Ship and Cat Islands and at the end of the Gulfport pier. The higher flood levels onshore were the result of runoff.

Extent of flooding.—U.S. Geological Survey topographic maps were used on which to delineate the approximate flood boundaries for Camille. Surveys of the water's edge along the streets and roads were used to refine the boundaries.

Flood boundaries for Betsy were delineated using topographic maps and the Mobile Corps of Engineers' report "Hurricane Betsy" as a guide.

Depth of flooding.—At any point, the depth of flooding can be estimated by subtracting the ground-surface elevation from the water-surface elevation determined by interpolating between maximum tide elevations shown on the map. Approximate ground elevations can be estimated from contours on the map, although more accurate elevations can be obtained by leveling to bench marks.

Additional information.—Some of the major wells from which emergency water supplies may be available are located on these maps.

Additional information pertaining to floods along the Mississippi gulf coast may be obtained at the district office of the U.S. Geological Survey, Jackson, Miss. Descriptions of tidal characteristics, tidal records, and tidal datums may be obtained from the following published reports: Harris, D. L., and Lindsay, C. V., 1957, An index of tide gages and tide gage records for the Atlantic and Gulf Coasts of the United States; U.S. Dept. Commerce, Weather Bur. Natl. Hurricane Research Proj., rept. 7, U.S. Department of the Army, Corps of Engineers, Mobile District, 1965, Report on hurricane survey of Mississippi Coast; 49 p.

U.S. Department of the Army, Corps of Engineers, Mobile District, 1967, Hurricane Betsy, 8-11 September 1965; 65 p.



House deposited by floodtide on L. & N. Railroad in Pass Christian.

Photograph by Wide World Photo Inc.

HURRICANE CAMILLE TIDAL FLOODS OF AUGUST 1969 ALONG THE GULF COAST,
PASS CHRISTIAN QUADRANGLE, MISSISSIPPI

By
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1969