



Figure I-3-5. Example of wood crib breakwater typical of the construction technique used in the Great Lakes during the late 1800's, in this case from Calumet Harbor, Illinois. Skilled wood craftsmen built the cribs on land or on a barge, floated them into place, and sank them using rock and gravel fill. Almost 1,000 of these breakwaters were built around the Great Lakes, and many of them, now a century old, need rehabilitation.



**Figure I-3-6. Construction of Fire Island jetty on Democrat Point, at the west end of Fire Island, Long Island, New York. Many early USACE jetties were built from the land moving seaward using materials brought in by train. Photograph taken 3 Jan 1940, from Beach Erosion Board Archives.**

*f. The Board on Sand Movement and Beach Erosion.* On January 29, 1929, Major General Edgar Jadwin, Chief of Engineers, USACE, issued a Special Order creating a four-officer board “to investigate and report on the subject of sand movement and beach erosion at such localities as may be designated by the Chief of Engineers.” The Chief of Engineers designated Jamaica Bay, New York, and Cold Springs Inlet, New Jersey, as the first two projects for investigation by the “Sand Board” as it became familiarly known. The board employed two consultants, Dr. Douglas W. Johnson of Columbia University and Professor Thorndike Saville of the University of North Carolina. With their advice and assistance, a list of field experiments was prepared. The northern coast of New Jersey, with its area of active erosion and numerous shore protection installations was selected for conducting the experiments. Lieutenant Leland K. Hewitt was assigned to the board in April 1929, to conduct the experiments. Morrrough P. O’Brien, recently returned from Freeman Scholarship studies in Europe, was borrowed from the University of California to provide expert assistance in the studies. Hewitt and O’Brien set up their headquarters in Long Branch, New Jersey, and began assembling equipment and personnel to carry out their task. Thus began a USACE research program destined to have far-reaching effects (Wilson and Eaton 1960)

*g. The Beach Erosion Board.* During this period, the ASBPA, under the leadership of J. Spencer Smith, its persuasive president, was engaged in a campaign to bring combined Federal, State and local effort to bear upon the U. S. beach preservation problems. After two years of Congressional hearings, Section 2 of the River and Harbor Act of 1930, authorized and directed the Chief of Engineers “to cause investigations and studies to be made in cooperation with appropriate agencies of the various states on the Atlantic, Pacific, and Gulf coasts and on the Great Lakes, and Territories, with a view of devising effective means of preventing erosion of the shores of coastal and lake waters by waves and currents . . .” The new law also provided for the creation of the Beach Erosion Board (BEB) by the provision “that there shall be organized under the Chief of Engineers, United States Army, by detail from time to time from the Corps of Engineers and from the engineers of state agencies charged with beach erosion and shore protection, a board of seven members,