OF GENERAL INTEREST

PROCEEDINGS OF THE SOCIETY

MINUTES OF MEETING

Boston Society of Civil Engineers

MAY 17, 1961.—A Joint Meeting of the Boston Society of Civil Engineers with the Surveying and Mapping Section was held this evening at the United Community Services Building, 14 Somerset Sreet, Boston, Mass., and was called to order by President James F. Brittain, at 7:00 P.M.

President Brittain stated that the Minutes of the previous meeting held April 10, 1961 would be published in a forthcoming issue of the Journal and that the reading of those Minutes would be waived unless there was objection.

President Brittain announced the death of the following members:—

Walter J. Reed, who was elected a member February 15, 1928, and who died April 21, 1961.

Charles W. Newcomb, who was elected a member April 18, 1928, and who died May 1, 1961.

President Brittain stated that this was a Joint Meeting with the Surveying and Mapping Section and called upon Roy L. Wooldridge, Chairman of that Section, to conduct any necessary business at this time. Prof. Wooldridge announced names of applicants for membership in the Society.

President Brittain introduced speaker of the evening:—Dr. David D. Jacobus, Senior Mechanical Engineer, Harvard University—Cambridge Electron Accelerator, who gave a most interesting talk on "The Survey for the Cambridge Electron Accelerator."

A short discussion period followed the talk.

Eighteen members and guests attended the meeting.

The meeting adjourned at 8:30 P.M.

CHARLES O. BAIRD, JR., *Secretary*

STRUCTURAL SECTION

APRIL 12, 1961.—A joint meeting with Main Society and Construction Section was held in United Community Services Building.

President James Brittain opened the meeting asking Dr. Arthur Casagrande to introduce a guest, Dr. H. Leussink, Rector of the Technical University, Karlsruhe, Germany, a specialist in Soil Mechanics.

Then the meeting was turned over to Chairman Robert Bierweiler of the Construction Section, who had no business to transact; then to Chairman Myle Holley of the Structural Section, who presented Mr. William Mueser of the firm of Moran, Proctor, Mueser and Rutledge, and Capt. Perry Boothe, C.E.C., U.S.N. who spoke on the "Design and Construction of Bremerton Base Drydock," Carrier Repair Site—Puget Sound Naval Shipyard, located about 30 miles N.W. of Seattle.

Mr. Mueser spoke first on design features, showing about 30 slides. This is a graving dock, used for repairs rather than construction, and therefore has to be deep enough to take a carrier which may be heavily damaged and

riding low. Also although not the longest nor the widest, it is the deepest, and is the largest dock in terms of volume. It is 1180′ long, 180′ wide at the coping, 198′ at the deck and 61′ deep.

Instead of being dug out of the land, the drydock is built out into the Sound adding 13 acres to the shipyard.

Choice had to be made between the gravity type of structure and the relieved type. If the former had been used, the floor slab would have had to be 43′ thick, requiring nearly one-half million cubic yards of concrete. The possibility of holding down the slab by the use of piles had to be ruled out due to the nature of the material: soft clay on top of very hard material in which sufficient penetration for grip was considered uneconomical. The slab as designed was 7′ thick except under the walls where it was 12′. The walls themselves were 12′ at the base, 3′ at the top.

Earth dams along the sides served as a cofferdam during construction, as a cutoff during operation and also as an integral part of the fill around the dock. The outer end of the cofferdam consisted of eleven cells of 60′ diameter, arranged in a half ellipse.

Filling and de-watering of the dock proved an interesting problem. Filling is to be done in an hour and a half with low velocity at first so as not to disturb the keel blocks. De-watering is accomplished in about 4 hours with four 54 inch diameter pumps with a capacity of 114,000 g.p.m. and 1500 HP motors.

Capt. Boothe spoke of a pre-advertising meeting with interested bidders, briefing them on problems of construction. This was a great aid to the responsible contractors and helped to keep out those not fitted to do the work. The Navy departed from their usual procedure in two ways: The architect-engineer continued through the construction in a consultant capacity, and the construction procedure was not left up to the contractor. Any variation from methods laid down have to be O.K.'d by the Navy.

Preliminary work on the design was started as early as 1947, but bids were not opened until mid-December 1958, with construction beginning about three weeks later. The work is to be completed April 1, 1962 and the total cost expected to be $22,000,000.

The attendance was about 65.

P. S. RICE, *Clerk*

MAY 10, 1961.—Chairman Myle J. Holley, Jr. introduced Mr. Fred U. Severud of Severud, Elstad, Krueger Associates of New York City and Dr. Hannskarl Bandel of the same office. The subject was "The Structural Design of the New Earth Sciences Building at M.I.T.", but since some complications have arisen, Mr. Severud spoke of problems involved and then went on to other work he has done recently.

In the M.I.T. Building there were basic architectural requirements which set up the structural problems. These were: open court space, free space at the base, a relatively tall concrete frame with fenestration which limited the stiffening which could be used. The design which finally went out to bid was based on two towers as end walls connected by full-story Vierendeel Trusses on the other two walls. Bids came in higher than had been planned, so further study is being made.

Mr. Severud showed slides of this building and also of the other recent buildings showing some radical structural approaches. A paper is being prepared for publication.

There were about 45 present.

P. S. RICE, *Clerk*

HYDRAULICS SECTION

MAY 3, 1961.—The meeting was called to order by Donald R. F. Harleman, Chairman of the Section at 7:10 P.M. at the Hydraulics Laboratory of MIT. The minutes of the previous meeting of the section were read and

approved. Mr. Harleman announced the dates of the section meetings scheduled for November 1, 1961, February 21, 1962 and May 2, 1962. He also made some comments about the hydraulic lecture series now being planned.

The Chairman then introduced the speaker, Mr. Philip A. Drinker, Research Geologist, Agricultural Research Service, Hydrodynamics Laboratory, Massachusetts Institute of Technology, whose subject was "Boundary Shear Stress Distribution in Trapezoided Channel Curves."

Mr. Drinker discussed erosion and erosion control of small streams. The boundary shear stress is a parameter of erosive force of water in a channel. The speaker pointed out the tendency of a channel to approach a smooth surface and presented a mathematical correlation between the erosive force and the boundary shear stress. A hydraulic model of a channel curve was described, and later demonstrated, in which experimental results could be observed and measured. The effect of friction and of the radius of curvature of the channel for attenuating erosive forces were studied. A pitot tube developed by J. R. Preston was calibrated and used for determining velocities at the channel surface and throughout the channel cross section. Slides were shown of the effect of flood erosion and the effectiveness of stone revetments in its control.

The meeting adjourned to the hydraulics laboratory where the above model was demonstrated, followed by an informal inspection of other models in operation in the laboratory. The meeting closed at 8:30 P.M. Twenty people were in attendence.

RICHARD F. DUTTING, *Clerk*

SURVEYING AND MAPPING SECTION

APRIL 5, 1961.—The April meeting of the Surveying and Mapping Section was called to order by Chairman Roy L. Wooldridge at 7:15 P.M. The clerk's report of the previous meeting was read and accepted. Chairman Wooldridge announced that a letter will be sent to the Eastern Mass. Association of Professional Engineers and Land Surveyors indicating our schedule for the forthcoming year in order to avoid a conflict of schedules. The dates for the forthcoming meetings were announced as follows:

May 17, 1961 Joint with BSCE which will be held at the Community Services Bldg. The featured speaker will be Dr. Jacobus of the Cambridge Electronics Accelerator.

October 26, 1961, January 17, 1962 April 4, 1962 Annual Meeting and Election of Officers

Chairman Wooldridge then introduced the speaker of the evening, Mr. Carroll F. Merriam, who spoke on "Some Problems of the Surveying Profession as seen by a Retired Engineer."

This very informative presentation was followed by a question and answer period. The meeting was adjourned at 9:00 P.M.

The meeting was attended by 10 members and guests.

RICHARD D. RASKIND, *Clerk*

CONSTRUCTION SECTION

MARCH 22, 1961.—The meeting was called to order at 7:00 P.M. by past Chairman Frank Heger who introduced the new officers of the Construction Section; R. A. Bierweiler, Chairman; J. P. Archibald, Vice-chairman; J. H. Cullinan, Secretary; and L. Tucker, Member of the Advisory Committee.

Chairman Bierweiler introduced the speaker of the evening, Mr. John J. Scheuren, Jr., Overseas Manager for Metcalf and Eddy.

The subject of Mr. Scheuren's talk was "Arctic Construction." His talk, illustrated with slides from various construction projects in Greenland compared the problems of construction in

the Arctic with those of the more temperate Northern climate with which we are more familiar. Mr Scheuren illustrated that the problems in the Arctic were not unlike except for the problem of logistics and the severity of climate which requires careful planning in the construction effort and in most cases air transportation support.

Following Mr. Scheuren's talk was a short movie prepared by the Corps of Engineers showing construction of the Dew Line extending across Greenland and the BMEWS installation at Thule.

Twenty-eight members and guests were present. For those who may have missed the interesting talk it is planned to present Mr. Scheuren's talk in the Journal of the Boston Society of Civil Engineers.

The meeting was adjourned at 8:45 P.M.

JOHN H. CULLINAN, *Secretary*

ADDITIONS

Members

Robert E. Barrett, Jr., 92 Woodbridge St., So. Hadley, Mass.

Henry W. Buck, Buck & Buck, 650 Main St., Hartford, Conn.

William H. Coombs, 10 Sunny Knoll Terr., Lexington, Mass.

Michael A. Donnelly, 11 Whitman Ave., Melrose, Mass.

Gerald T. Fagan, Pine Knoll Rd., Franklin, Mass.

Myron B. Fiering, 3410 Club Dr., Los Angeles, Calif.

Harold S. Gillis, Jr., 11 Beacon Street, Boston, Mass.

Charles W. Lockwood, 53 Sunnyside Rd., Norwood, Mass.

Perry L. McCarty, 4 Lockeland Rd., Winchester, Mass.

Saul Nuccitelli, Cooper Union, Cooper Square, New York

John M. Rufo, 72 Forest St., Waltham, Mass.

Athanasios A. Vulgaropulos, 26 Tudor St., Waltham, Mass.

Janis Zagarins, 40 Berry St., Framingham, Mass.

Juniors

Gerald R. Cichy, 222 Cambridge Rd., Woburn, Mass.

Robert F. Daylor, 71 Liberty St., Rockland, Mass.

Joseph D. Guertin, 9 Lemoyne St., Braintree, Mass.

Joseph H. Metelski, 119 Webster St., Haverhill, Mass.

Joseph Yamello, 10 Knox Park, Everett, Mass.

Deaths

Alfred Colletti, June 20, 1960

Frank H. Potter, April 15, 1961