

TESTING FORUM

Symposium on Geophysical Methods

ASTM is sponsoring a Symposium on Geophysical Methods for Geotechnical Investigations on 29-30 June 1989 at St. Louis, MO. Organized by ASTM Committee D-18 on Soil and Rock, the symposium will be one part of that committee's summer meeting taking place 25-30 June 1989 at the same location. The Society of Exploration Geophysicists (SEG) is a cooperating organization for the symposium.

The purpose of the symposium is to bring together an interdisciplinary group of scientist and engineer users, researchers, consultants, and manufacturers to develop information useful for preparation of standard guides for the application of geophysics to geotechnical engineering. The program is designed to show advantages and disadvantages of a variety of geophysical techniques, equipment, and programs related to geologic engineering, groundwater hydrology and contamination, waste disposal, soil mechanics, rock mechanics, and other scientific input to geotechnical engineering studies. Areas of interest include surface and borehole geophysical techniques and investigations both on land and water.

All papers have been selected for oral presentation and will be published in an ASTM Special Technical Publication (STP). English is the official language. There will be no registration fee. The Symposium Co-chairmen are Wayne Saunders, ICP Technology, Inc., 9300 Lee Highway, Room 958, Fairfax, VA 22031-1207 and Fred Paillet, U.S. Geological Survey, MS 403, Box 25046, Federal Center, Denver, CO 80225.

For attendance information and program brochure contact Robert Morgan, ASTM Staff Manager, 1916 Race Street, Philadelphia, PA 19103 (Phone: 215/299-5505).

International Group Discusses Artificial Recharge of Ground Water

The Task Committee on Guidelines for Artificial Recharge of Ground Water, of the American Society of Civil Engineers' (ASCE) Irrigation and Drainage Division, sponsored an International Symposium on Artificial Recharge of Ground Water at the Inn-at-the-Park Hotel in Anaheim, California from 23 to 27 Aug. 1988. Cosponsors were the U.S. Geological Survey, California Department of Water Resources, University of California Water Resources Center, Metropolitan Water District of Southern California, with cooperation from the U.S. Bureau of Reclamation, International Association of Hydrological Sciences, American Water Resources Association, U.S. Agency for International Development, World Bank, United Nations Department of Technical Cooperation for Development, and a number of local and state organizations.

Because of the world-wide interest in artificial recharge and the need to develop efficient recharge facilities, this symposium brought together an interdisciplinary group of engineers and scientists to provide (1) a forum for many professional disciplines to exchange experiences and findings related to various types of arti-

cial recharge; (2) learn from both successful and unsuccessful case histories; (3) promote technology transfer between the various disciplines; (4) provide an education resource for communication with those who are not water scientists, such as planners, lawyers, regulators, and the public in general; and (5) indicate directions by which cities or other entities can save funds by having reasonable technical guidelines for implementation of a recharge project.

Authors from 15 countries and from 14 states of the United States presented over 80 papers orally or by poster. The nearly 300 attendees represented over 25 countries. On 22 August an optional one-day continuing-education course on artificial recharge theory and practice was offered at the hotel. Mid-way through the symposium, two one-day tours visited well-injection recharge and barrier projects, surface recharge areas, and water reuse projects in Los Angeles and Orange Counties, and a one-day tour of facilities in the San Joaquin Valley took place on the Saturday following the symposium.

A proceedings of approximately 600 pages of selected symposium papers will be published by ASCE, available sometime in 1989. Requests for placement on the mailing list for future announcements of the Proceedings should be sent to Ivan Johnson, Chairman, ISAR Organizing Committee, A. Ivan Johnson Inc., 7474 Upham Court, Arvada, CO 80003, USA.

IAHS Fourth International Symposium on Land Subsidence

The fourth in a series of symposia on land subsidence is being developed by a special organizing committee of the International Association of Hydrological Sciences' Commission on Ground Water. Present plans are considering Mexico City, Mexico or Houston, TX, as locations for the symposium to be convened tentatively in 1990. Both locations are sites of outstanding amounts of subsidence.

It is expected that a number of international and national organizations will be cosponsors with IAHS of the symposium, as has been the case with the three previous symposia on the subject. The first IAHS International Symposium on Land Subsidence was held in Tokyo, Japan, in 1969; the Second International Symposium was in Anaheim, CA, in 1976, and the Third was in Venice, Italy, in 1983. Selected papers from these symposia were published in IAHS Publication No.'s 88-89, 121, and 151 respectively, available from IAHS Treasurer, 2000 Florida Avenue, NW, Washington, DC 20009.

The Symposium Organizing Committee consists of Joseph F. Poland, USGS Retired, Sacramento, California; Laura Carbognin, National Research Council, Venice, Italy; German Figueroa Vega, Water Commission of Valley of Mexico, D. F. Mexico; and Ivan Johnson (Chairman), A. Ivan Johnson, Inc., Arvada, CO. Anyone interested in offering a paper or getting on the mailing list for future detailed information should contact Johnson at 7474 Upham Court, Arvada, CO 80003, USA.

TESTING FORUM

A. Ivan Johnson Elected to ASTM Board of Directors

A. Ivan Johnson, president of A. Ivan Johnson, Inc., a soil and water consulting firm in Arvada, CO, has been elected to a three-year term on the ASTM Board of Directors, effective 1 Jan. 1989 (Fig. 1).

Johnson holds a B.S. degree in civil engineering and an A.B. degree in mathematics from the University of Nebraska, and pursued graduate study in soil mechanics and soil physics at the same institution. Johnson's career has included 30 years with the U.S. Geological Survey, where he organized and supervised the National Hydrologic Laboratory and the National Water Resources Training Center in Denver. He served as Assistant Chief of the Office of Water Data Coordination in Washington, DC, for eight years before retiring in 1979. He has been involved in many subsurface exploration and ground-water evaluation and research studies throughout the United States and abroad, and is recognized internationally as an authority on soil, rock, and water, and their interrelationships within the earth's environment.

An active member of ASTM for 45 years, Johnson received the Award of Merit in 1982, the Frank Reinhart Terminology Award in 1983, and the W. T. Cavanaugh Memorial Award in 1987. A member of standards-writing Committee D-18 on Soil and Rock, he served as chairman for six years, and presently chairs its subcommittee on terminology for soil, rock, and contained fluid. He has also been an active member of Committees D-19 on Water; D-22 on Sampling and Analysis of Atmospheres; D-34 on Waste Disposal; D-35 on Geotextiles, Geomembranes and Related Products; and E-43 on Metric Practice. In addition to these activities, Johnson is a member of the Coordinating Committee for Environmental Activities and vice-chairman of the Board of Trustees of ASTM's Institute for Standards Research.

Johnson is the author or co-author of over 100 professional papers and reports. He is also active in numerous other organizations, including the American Society for Civil Engineers, Ameri-

can Geophysical Union, American Water Resources Association, Association of Geoscientists for International Development, American Society for Photogrammetry and Remote Sensing, International Committee on Remote Sensing and Data Transmission, International Society of Soil Mechanics and Foundation Engineers, American National Metric Council, U.S. Metric Association, and the International Association of Scientific Hydrology, where he is honorary president.

Raymond N. Yong is Co-Recipient of ASTM's Publication Award

Raymond N. Yong, director of the Geotechnical Research Centre, at McGill University in Montreal, is a 1988 recipient of the Charles B. Dudley Award.

Yong, a resident of Beaconsfield in Quebec, received the award at ceremonies hosted by Committee D-18 on Soil and Rock 23 Jan. 1989, in Orlando, FL. He and co-recipient Frank C. Townsend, a professor in the Department of Civil Engineering at the University of Florida, in Gainesville, received the honor for co-editing ASTM Special Technical Publication (STP) 892 Consolidation of Soils: Testing and Evaluation (Fig. 2).

The Charles B. Dudley Award was established in 1925 by ASTM in commemoration of the Society's first President, in order to stimulate research leading to standardization, extend knowledge in a specific field of interest to the Society, and recognize meritorious contributions to the publications of ASTM.

A native of Singapore, Yong holds a B.A. degree from Washington and Jefferson College (1950), a B.Sc. degree from the Massachusetts Institute of Technology (1952), and a M.Sc. degree from Purdue University (1954), all in mathematics and physics. He received his M.Eng. (1958) and Ph.D. (1960) degrees from McGill University, both in soil mechanics.

In 1959, Yong joined the faculty of the Civil Engineering and Applied Mechanics Department at McGill University as an assis-



FIG. 1—A. Ivan Johnson elected to the ASTM Board of Directors.



FIG. 2—David M. Greason presents the ASTM Publication Award to Frank C. Townsend and Raymond N. Yong.

TESTING FORUM

tant professor. Before assuming his current position, he was associate professor, and Professor of Civil Engineering and Applied Mechanics. He received his present title at McGill University in 1976 and received the title of the William Scott Professor of Civil Engineering and Applied Mechanics at the University of Florida in 1984.

Yong, active in ASTM for 15 years, is a member of the Institute of Civil Engineers (Great Britain); the Canadian Society of Civil Engineering; the American Society for Civil Engineers; the Canadian Geotechnical Society; the Society of Rheology; and the International Society for Terrain-Vehicle Systems.

Frank C. Townsend Named Co-Recipient of ASTM's Publication Award

Frank C. Townsend, a professor in the Department of Civil Engineering at the University of Florida, in Gainesville, FL, is a 1988 recipient of the Charles B. Dudley Award.

Townsend received the award at ceremonies hosted by ASTM Committee D-18 on Soil and Rock 23 Jan. 1989, in Orlando, FL. He and co-recipient Raymond N. Yong, director of the Geotechnical Research Center at McGill University in Montreal, received the honor for co-editing ASTM Special Technical Publication (STP) 892 Consolidation of Soils: Testing and Evaluation.

The Charles B. Dudley Award was established in 1925 by ASTM in commemoration of the Society's first President, in order to stimulate research leading to standardization, extend knowledge in a specific field of interest to the Society, and recognize meritorious contributions to the publications of ASTM.

A native of Gainesville, Townsend earned his B.S.C.E. (1962) degree from Michigan Technological University, and he received his M.S.C.E. (1968) and Ph.D. (1970) degrees from Oklahoma State University. In 1970, he went to work for the Corps of Engineers, Waterways Experimental Station as a research civil engineer, a position he held for nine years. In 1979, he joined the faculty at the University of Florida. His career concentration has been in geotechnical engineering, most recently, geotechnical centrifugal modeling of consolidation of waste clays, and of deep foundations.

In addition to ASTM, he is a member of the American Society of Civil Engineers and Tau Beta Pi.

Organized in 1898, ASTM (American Society for Testing and Materials) is one of the largest voluntary standards development systems in the world.

In Memoriam, Earl B. Hall

The many friends and colleagues of Earl B. Hall (Fig. 3) were deeply saddened by his death on 12 Oct. 1988 in San Diego, CA. The former chairman of ASTM Committee D-18 and stalwart member of the Committee for almost four decades died after a prolonged and serious illness. He is survived by his wife, Barbara.

A native of San Diego, Hall received his engineering training at Los Angeles City College, the University of California at Los Angeles, and Massachusetts Institute of Technology.

In 1935, Earl Hall began his professional career with the U.S. Forest Service as a technician, and two years later joined the Coachella Valley Company Water District as office engineer. In 1940, he was named field engineer for Leeds, Hill, Barnard, and Jewett. Soon thereafter, he began a 24-year career with the U.S. Army Corps of Engineers. In 1964, Earl organized and started the firm known as Geotesting, Inc. with laboratory facilities in San Rafael, CA. In 1977 the operation of Geotesting, Inc. was suspended and a new firm, Earl B. Hall, Inc., was organized specifically to design, manufacture, and install geotechnical instrumentation.

The expertise of Earl Hall had a major and far reaching impact on the design and fabrication of geotechnical testing apparatus. By the 1950s, his work at the Corps of Engineers' South Pacific Division (SPD) Laboratory, near San Francisco, had resulted in him being recognized as the "premier" geotechnical testing equipment person in the Corps. As Chief of the Soil Section in the SPD Laboratory, he had developed apparatus and techniques for large-scale triaxial and direct shear tests on materials containing large amounts of gravel and cobble sizes. By the early 1960s, the SPD Laboratory had established a wide reputation for large-scale testing and evaluation of engineering properties of soils and rock. Private firms as well as other government agencies programmed work at SPD Laboratory to be accomplished under Earl's direction.

Recognizing the need for "custom" soil testing services, Earl retired from the Corps of Engineers and started Geotesting, Inc., the cornerstone of which was a triaxial chamber for 12-in. (304.8-mm) diameter specimens and a 300 000-lb (136 080-kg) loading frame, both designed by Earl, produced, and assembled in his home workshop. With state-of-the-art equipment and extraordinary attention to detail, Geotesting acquired a diverse clientele from every continent in the world. Through its years of operation, Geotesting also served as a research facility and proving ground for apparatus marketed by Karol-Warner, Inc., and east-coast soil testing equipment firm.

Because of a parallel interest in geotechnical instrumentation, Earl responded to the need for simpler and more reliable instrumentation to monitor the performance of engineered works. Two U.S. patents were soon issued to him for pneumatic instrumentation designs to measure hydrostatic pressure and total stresses within foundations and embankments. This led to alternative methods for monitoring geotechnical behavior, one being the detection of slope changes. Earl and his associates then developed the Hall Inclo-Meter using the acceleration of gravity as a reference and space age components of manageable physical size to measure changes in the inclination of casing installed within embankments and bore holes. As a result, Hall became the founder and president of Earl B. Hall, Inc., a subsidiary of VHS Associates, Inc., from which he retired in Feb. 1979.

Following his retirement from the corporate structure, Earl Hall was actively engaged as a consultant on many projects throughout the world with a major portion of his time spent as an expert witness of projects involved in litigation. At the same time, his designs and procedures continued to be implemented in major projects. At present, three of the 25 highest dams in the world contain Hall instruments.

Earl Hall's participation in Committee D-18 began in 1950 when

TESTING FORUM



FIG. 3—Earl B. Hall.

he became active in three subcommittees: D18.02 on Sampling and Related Field Testing for Soil Investigations; D18.03 on Texture, Plasticity and Density Characteristics of Soils; and D18.05 on Structural Properties of Soils. Later, he chaired Subcommittee D18.05 from 1965 to 1970. In 1964 he was elected First Vice-Chair-

man of the main D-18 Committee, a position in which he served six years, followed by six years as Chairman of D-18 from 1970 to 1976. Another major contribution to D-18 was his extensive revision of the History of Committee D-18 that he completed in 1976. Hall was also a member of two other ASTM committees: E-36 on Criteria for the Evaluation of Testing and Inspection Agencies, and E-41 on Laboratory Apparatus.

The achievements of Earl Hall were acknowledged with several distinguished awards in the ASTM community. In 1977 he was given Honorary Membership in Committee D-18 for meritorious service to the Committee. The next year, he was presented the ASTM Award of Merit for distinguished service to the cause of voluntary standardization. Then, in 1981, the Society conferred its highest award, Honorary Membership, on Hall in recognition of his eminence in the work covered by ASTM.

Whereas, the members of Committee D-18 have lost a distinguished colleague and valued friend; be it resolved that this memorial to the late Earl B. Hall be included in the minutes of the January 1989 meeting in Orlando, FL, and a copy sent to his family with our expression of sympathy and appreciation for his many contributions to ASTM Committee D-18 on Soil and Rock.

SI Conversion Factors for Geotechnical Engineering

During the past several years, Subcommittee D18.93, through the initiative of Marshall Silver, has developed a table of factors for converting U.S. customary and metric units into SI units. The objective is to assist authors in converting their results into SI units and to promote uniformity in the use of SI units in geotechnical engineering. Additional information on the SI system can be obtained from ASTM Metric Practice Guide (E 380) and "SI Units in Geotechnical Engineering," by R. D. Holtz in the *Geotechnical Testing Journal*, Vol. 3, No. 2, June 1980, pp. 73-79. Comments from the profession are invited as letters either to the editor for publication in the journal or to Subcommittee D18.93 for its consideration.

V. P. Drnevich
Technical Editor

To Convert From	To	Multiply By
Length		
inches (in.)	millimetres (mm)	25.4
inches (in.)	metres (m)	0.0254
feet (ft)	metres (m)	0.305
miles (miles)	kilometres (km)	1.61
yards (yd)	metres (m)	0.914
Area		
square inches (in. ²)	square centimetres (cm ²)	6.45
square feet (ft ²)	square metres (m ²)	0.0929
square yards (yd ²)	square metres (m ²)	0.836
acres (acre)	square metres (m ²)	4047
square miles (miles ²)	square kilometres (km ²)	2.59
Volume		
cubic inches (in. ³)	cubic centimetres (cm ³)	16.4
cubic feet (ft ³)	cubic metres (m ³)	0.0283
cubic yards (yd ³)	cubic metres (m ³)	0.765
Mass		
pounds (lb)	kilograms (kg)	0.454
tons (ton)	kilograms (kg)	907
Force		
one pound force (lbf)	newtons (N)	4.45
one kilogram force (kgf)	newtons (N)	9.81
Pressure or Stress		
pounds per square foot (psf)	kilonewtons per square metre (kN/m ²) or kilopascals (kPa)	0.0479
pounds per square inch (psi)	kilonewtons per square metre (kN/m ²) or kilopascals (kPa)	6.89
kilogram force per square centimetre (kgf/cm ²)	kilonewtons per square metre (kN/m ²) or kilopascals (kPa)	98.1
Liquid Measure		
gallon (gal)	cubic metres (m ³)	0.0038
acre-feet (acre-ft)	cubic metres (m ³)	1233
Quantity of Flow		
gallons per minute (gal/min)	cubic metres per minute (m ³ /min)	0.0038
cubic feet per minute (ft ³ /min)	cubic metres per minute (m ³ /min)	0.0283
Mass Density		
pounds per cubic foot (pcf)	megagrams per cubic metre (Mg/m ³)	0.0160
kilonewtons per cubic metre (kN/m ³)	megagrams per cubic metre (Mg/m ³)	0.102
Temperature		
°F = 1.8 Temp °C + 32		
°C = (Temp °F - 32)/1.8		



1916 Race Street
Philadelphia, PA 19103

(215) 299-5462
TWX: 710-670-1037
FAX: 215-977-9679

1989 MEMBERSHIP APPLICATION

OPTIONAL METHOD OF PAYMENT:

☐ AMERICAN EXPRESS

☐ MASTERCARD

☐ VISA

ACCOUNT NO. (ALL DIGITS)

EXPIRATION DATE

SIGNATURE

APPLICATION IS MADE FOR MEMBERSHIP IN ASTM:

☐ MEMBER

AN INDIVIDUAL OR AN INSTITUTION (EDUCATIONAL, PUBLIC LIBRARY, OR A SCIENTIFIC ENGINEERING, OR TECHNICAL NON-PROFIT SOCIETY) SUBSCRIBING TO THE PURPOSES OF THE SOCIETY PROVIDED IN THE CHARTER AND BYLAWS.

☐ ORGANIZATIONAL

AN INDIVIDUAL, BUSINESS, GOVERNMENTAL, RESEARCH, OR PROFESSIONAL ORGANIZATION, OR TRADE ASSOCIATION, OR SEPARATE FACILITY THEREOF SUBSCRIBING TO THE PURPOSES OF THE SOCIETY PROVIDED IN THE CHARTER AND BYLAWS.

PLEASE PRINT ALL INFORMATION CLEARLY. DO NOT EXCEED THE CAPACITY OF EACH LINE.

	LAST	FIRST	INITIAL
NAME			
COMPANY NAME			
NAME			
FACILITY			
STREET			
P.O. BOX			
CITY			
STATE			
ZIP			
PHONE	()	
EXTENSION			
COUNTRY			
JOB TITLE			
PARENT COMPANY (IF DIFFERENT FROM ABOVE)			

OFFICIAL REPRESENTATIVE (ORGANIZATIONAL MEMBERSHIP ONLY)

	LAST	FIRST	INITIAL
NAME			
TITLE			

IF HOME ADDRESS TO BE USED FOR MAILINGS PLEASE COMPLETE BELOW (AFTER COMPLETING ABOVE).

	LAST	FIRST	INITIAL
ADDRESS			
CITY			
STATE			
ZIP			

PLEASE SEND INFORMATION ON THE FOLLOWING COMMITTEES:

BENEFITS AND FEES FOR 1989

MEMBER - ANNUAL FEE
ORGANIZATIONAL - ANNUAL FEE

\$ 50.00
\$350.00

1 JANUARY - 31 DECEMBER
1 JANUARY - 31 DECEMBER

ANNUAL BOOK OF ASTM STANDARDS

- ONE FREE VOLUME - BOOK OF ASTM STANDARDS
- UNLIMITED NUMBER OF VOLUMES AT MEMBER PRICES
- SPECIAL QUANTITY PRICES ON INDIVIDUAL BOOKS AND STANDARDS

- REDUCED RATES FOR COMPLETE SETS OF STANDARDS AND SECTIONS
- ONE ANNUAL SUBSCRIPTION TO STANDARDIZATION NEWS
- MEMBER DISCOUNT ON OTHER PUBLICATIONS

MAIL TO: ASTM ATTN: MEMBER SERVICES

MOVING?

To insure uninterrupted service on your *GTJ* subscription, please notify us at least six weeks before you move.

1. Attach your address label from a recent issue in the space provided opposite. (If label is not available, be sure to give your old address, including Zip Code.)



2. Print your name, membership no., and address below. (Be sure to include Zip Code.)

3. Mail entire notice to: **ASTM**

Subscription Dept.—GTJ
1916 Race St.
Philadelphia, PA 19103

Name _____ Membership No. _____

New Address _____

City _____ State _____ Zip Code _____

(please print or type the above information)