TESTING FORUM

Committee D-18 News

ASTM Award of Merit

Ernest T. Selig, professor of civil engineering, University of Massachusetts, Amherst, MA, was recently named a recipient of the 1984 ASTM Award of Merit.

A resident of Amherst, Selig was honored at the 27 June 1984 meeting of ASTM Committee D-18 on Soil and Rock in Denver, CO. The award recognizes his distinguished service in the standards writing activities of Committee D-18, and his exceptional leadership in founding the *Geotechnical Testing Journal*, which provides worldwide exchange of testing technology.

The Award of Merit and accompanying title of Fellow of the Society were established in 1949, to acknowledge distinguished service to ASTM through marked leadership, outstanding contribution, or publications of papers.

Selig joined ASTM Committee D-18 in 1963. He has served as member and chairman of several subcommittees, and organized and chaired several symposia. A specialist in geotechnical engineering, Selig has authored several papers on soil and rock.

Selig became associated with the University of Massachusetts as a professor of civil engineering in 1978. For ten years before this, he served in the same capacity at the State University of New York at Buffalo. He was employed with ITT Research Institute from 1957 to 1968. In addition to teaching and research, Selig is currently a consultant for private and goverment organizations.

A native of Harrisburg, PA, Selig received a B.M.E. degree in mechanical engineering from Cornell University in 1957. He received an M.S. degree in mechanics in 1960, and a Ph.D. degree in civil engineering in 1964, both from the Illinois Institute of Technology.

Selig is a member of the American Society of Civil Engineers, the American Railway Engineering Association, the Transportation Research Board, and the Internatioal Society for Soil Mechanics and Foundation Engineering.

ASTM Hogentogler Award

Toralv Berre, head of the Geotechnical Laboratory of the Norwegian Geotechnical Institute, Oslo, Norway, is the 1984 recipient of ASTM's C. A. Hogentogler Award.

Berre was honored for his paper on "Triaxial Testing at the Norwegian Geotechnical Institute" (*Geotechnical Testing Journal*, Vol. 5, No. 1/2, March/June, 1982, pp. 3–17). The C. A. Hogentogler Award, sponsored by ASTM Committee D-18 on Soil and Rock, is given each year to the author(s) of a paper of outstanding merit on soil and rock for engineering purposes that is presented at an ASTM meeting or published by ASTM.

Berre received B.Sc. and M.Sc. degrees in geotechnical engineering from the Technical University in Trondheim, Norway, 1964, and the Imperial College of Science and Technology, London, 1968, respectively. He was a research engineer at the Norwegian Geotechnical Institute from 1966 through 1970 when he obtained his present position.

Berre is a native of Tana, Norway and a resident of Oslo. He holds membership in the Norwegian Geotechnical Society and the International Society for Soil Mechanics and Foundation Engineering.

Call for Papers

ASTM seeks papers for the Symposium on Field Methods for Groundwater Contamination Studies and Their Standardization, sponsored by ASTM Committees D-19 on Water and D-18 on Soil and Rock. The symposium will be held the week of 2 Feb. 1986 in Cocoa Beach, FL.

The major topic areas include: (1) Geophysical Methods Applied to Groundwater Studies, A. Borehole Geophysics and In Situ Parameters, B. Surface Geophysical Methods; (2) Sampling Methods; (3) Field Chemical Analysis Methods and Precision; (4) Well Construction Methods, A. Well Construction and Monitoring Wells, B. Casing Materials; and (5) General Interest.

The purpose of the symposium will be to develop information that can be used to prepare guidelines for groundwater contamination studies and to develop information for methods that can become ASTM standard methods or ASTM standard practices.

Prospective authors are requested to submit a title, a 300–500 word abstract, and the ASTM Paper Submittal Form by March 1, 1985 to Symposium Chairman Gene Collins, National Institute for Petroleum and Energy Research, P.O. Box 2128, Bartlesville, OK 74005, 918/336-2400. Paper Submittal Forms are available from Kathy Greene, ASTM Publications Division, 1916 Race Street, Philadelphia, PA 19103, 215/299-5414. Additional information on the symposium and instructions for submittal of abstracts are available from Collins and Greene.

Presentations for the symposium will be selected by a program committee on the basis of submitted abstracts. Offered and invited papers will be scheduled for oral or poster presentation. All papers will be reviewed and considered for publication in an ASTM Special Technical Publication (STP).

ASTM may print and distribute accepted abstracts at the symposium with the approval of the chairman.

Reduced Liquid Movement Subject of Denver Symposium

Reduction of subsurface movement of liquids was the subject of a one-day symposium sponsored by ASTM Committee D-18 on Soil and Rock and cosponsored by the U.S. Committee on Large Dams (USCOLD) of the International Commission on Large Dams. The Symposium on Impermeable Barriers for Soil and Rock, the first specialized symposium of its kind, was held in Denver, CO on 25 June 1984. The program emphasized the interaction of the environmental system of soil and rock containment, impermeable barriers, and enclosed liquids. The theory, testing, and design considerations of such interactive systems was

explored in relation to slurry walls and clay and earth additive linings as applied to geotechnical engineering projects, such as tailings and waste-containment ponds, landfills, solar and biomass ponds, ditches, canals, and reservoirs. A number of papers presented research results on the interaction of various chemical and hazardous wastes with the soil and rock materials and lining or slurry materials.

The morning session of the symposium had eight papers addressing slurry walls, while the afternoon session had ten papers concentrating on clay and soil-admix liners. Eight papers were presented as posters during the coffee breaks and lunch period (Fig. 1). Symposium papers will be published as an ASTM Special Technical Publication, available later in 1984.

Ivan Johnson, Woodward-Clyde Consultants in Denver, CO, and R. K. Frobel of the U.S. Bureau of Reclamation in Denver cochaired the symposium. N. J. Cavalli, ICOS Corporation of America in New York City, and C. B. Pettersson, Brown and Root, Inc., in Houston, TX were the other members of the symposium organizing committee.

The symposium was preceded by the International Conference on Geomembranes on 20-24 June 1984. The conference was sponsored by the Industrial Fabrics Association International (IFAI), in cooperation with ASTM and eleven other organizations, including the American Society of Civil Engineers, American Society of Agricultural Engineers, and the Environmental Protection Agency (EPA). Authors at twelve technical sessions discussed the use of geomembranes—rubber, plastic, and other types of flexible synthetic sheeting—as related to such topics as pond liners, floating covers, dams and embankments, pollution control applications, durability, seams and leakage monitoring, water storage, and more. A trade show with exhibits from 45 manufacturers also was held on 21 and 22 June. Two interesting tours visited the Bureau of Reclamation Engineering Center Laboratories in Denver and the Mt. Elbert Forebay Reservoir, one of the largest geomembrane impoundments in the world. The 96 papers presented during the conference were preprinted by IFAI, available in two volumes for $49 plus postage and handling charges.

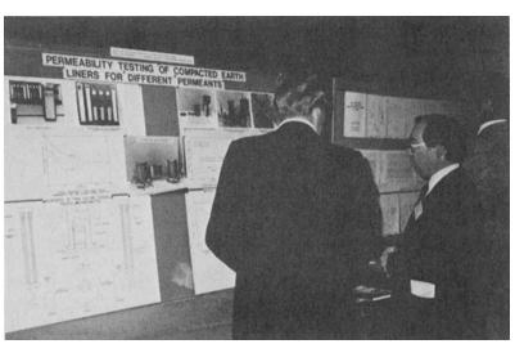

FIG. 1—*Participants of the Symposium on Impermeable Barriers for Soil and Rock present their paper at the poster session.*

To order the symposium proceedings (ASTM STP) contact ASTM, Publications Division, 1916 Race Street, Philadelphia, PA 19103. For the two-volume conference proceedings, contact Industrial Fabrics Association International, 345 Cedar Building, Suite 450, St Paul, MN 55101.

New ASTM Book on Laterally Loaded Foundations

Information on recent advances in the analysis, design, and performance of laterally loaded foundations is presented in a new ASTM publication.

Laterally Loaded Deep Foundations: Analysis and Performance (STP 835) presents the reader with some of the latest techniques and applications of piles subjected to lateral loading. The book is sponsored by ASTM Committee D-18 on Soil and Rock.

Specifically, the book's contents include the results of field tests on a variety of pile types and conditions, several methods of analysis, and methods to determine appropriate soil properties. Papers address such topics as: analysis and design methods; computer solutions; effects of pile spacing and soil disturbance during pile installation; cyclic and dynamic loading; determination of appropriate soil and rock parameters by laboratory and field testing and by the use of references; effects of rate and duration of load application, instrumentation, and concurrent vertical loading; and case histories of performance.

This book will be a valuable addition to the working libraries of engineers and researchers who seek current knowledge on the design, analysis, and performance of laterally loaded piles and pile groups.

To order STP 835, contact ASTM Customer Services Department, 1916 Race Street, Philadelphia, PA 19103, 215/299-5585.

ISSMFE Subcommittee Meets in Venice Italy

The International Society for Soil Mechanics and Foundation Engineering (ISSMFE) Subcommittee on Symbols, Units, Definitions, and Correlations met at Venice, Italy on 17-18 March 1984 at the Cini Foundation on the Island of San Giorgio Maggiore, Venice, Italy. The group worked at developing a list of new terms, symbols, and units for six new areas of soil mechanics and foundation engineering that were not included in the 1981 (fifth) edition of the ISSMFE "Lexicon in 8 Languages." The new areas covered by the working session include (1) anchors and retaining walls, (2) offshore soil mechanics and foundation engineering, (3) reinforced earth and geotextiles, (4) soil fabric, (5) soil dynamics, and (6) rheology. Once completed, the list probably will be printed as a supplement to the fifth edition of the "Lexicon."

This ISSMFE Subcommittee is also working with similar groups of the International Society for Rock Mechanics (ISRM) and the International Association of Engineering Geology (IAEG) through an intersociety "Coordinating Committee on Symbols, Units, and Definitions." The purpose of the coordinating committee is to attempt resolution of differences between ISRM's 3-language

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FIG. 2—*ISSMFE Subcommittee on Symbols, Units, Definitions, and Correlations meets at Venice, Italy. Shown left to right, front row are Kano Ueshita, Nagoya University, Nagoya, Japan; Erik Sandegren, Swedish State Railways, Stockholm, Sweden; Francois Baguelin (Chairman) Laboratoiere Central des Ponts et Chaussées, Bouguenais, France; Ivan Johnson, Woodward-Clyde Consultants, Denver CO; Takeshi Sato (visitor) Nagoya University, Nagoya, Japan. Back Row: Peter Brenner, Consulting Engineer, Weinfelden, Switzerland; Géza Petrasovits, Technical University of Budapest, Hungary; H. J. Luger, Delft Soil Mechanics Laboratory, Delft, The Netherlands; W. M. Kirkpatrick, Univeristy of Strathclyde, Glasgow, UK.*

glossary of terms, units, and symbols, IAEG's English terminology list, and ISSMFE's 8-language lexicon of 1633 terms (with symbols, units, and definitions). Copies of the ISSMFE Lexicon are still available from the following address: Canadian Geotechnical Society, Suite 700, EIC Building 2050 Mansfield Street, Montreal, P.Q. H3A 1Z2 Canada. The price is $38.00 (US) for ISSMFE members and $45.00 (US) for nonmembers.

Land Subsidence International Symposium

The Third International Symposium on Land Subsidence was held 18-25 March 1984 in Venice, Italy. Sponsors were the Ground-Water Commission of the International Association of Hydrologic Sciences (IAHS); United Nations Educational, Scientific and Cultural Organization (UNESCO); Italian National Research Council (C.N.R.); the Italian Regions of Veneto and Emilia-Romagna; the Italian Municipalities of Venice, Ravenna and Modena; the Venice Province; and the European Research Office. Cosponsors included the International Association of Hydrogeologists (IAH); International Society for Soil Mechanics and Foundation Engineering (ISSMFE); and Association of Geoscientists for International Development (AGID).

Organized within the framework of UNESCO's International Hydrological Program, the symposium brought together over 200 international interdisciplinary specialists in the problems of land subsidence caused by fluid and mineral withdrawal. Because man's continuing heavy development of groundwater, gas, oil and minerals is changing the natural regime and thus causing more and more subsiding areas in the world, there had been sufficient new land-subsidence occurrence, problems, research, and remedial measures taking place since the 1976 Second International Symposium held in Anaheim, CA in order to develop a most interesting program of nearly 100 papers from about 30 countries. The program consisted of papers covering case histories of fluid and mineral withdrawal; engineering theory and analysis; karst "sink-hole" type subsidence; subsidence caused by dewatering of organic deposits or by application of water (hydrocompaction); instrumentation; legal, socioeconomic, and enironmental effects of land subsidence; and remedial works. Papers will be available in a Proceedings in early fall.

Venice was appropriate because of the serious subsidence problems located there. An interesting one-day boat trip to local subsidence sites in the Lagoon of Venice was held during the week, in addition to a two-day field trip on 24 and 25 March in the areas around Venice, the Po River Delta, Ravenna, and Modena.

General cochairmen for the symposium were Dr. Lucio Ubertini, Instituto Ricerche Idrologica, Perugia, Italy, and A. Ivan Johnson, Consulting Engineer, Arvada, CO. Mr. Johnson also was Program Chairman, and Chairperson for Local Arrangements was Dr. Laura Carbognin, ISD, Consiglio Nazionale Delle Ricerche, Venice, Itlay.

Persons wishing more details about the symposium should contact A. Ivan Johnson, Consulting Engineer, 7474 Upham Court, Arvada, CO 80003, (303/425-5610). The approximate 700-page proceedings volume costs $35 and may be ordered from IAHS Treasurer, 2000 Florida Avenue, N.W., Washington, DC 20009. Copies of the field trip guide books may be requested from Dr. Laura Carbognin, ISD/CNR, 1364 San Polo, 30125 Venice, Italy.

International Metric-Use Survey

In order to prepare a report on an international survey of metric use in the foreign civil-engineering community, the Committee on Metrication (COM) of the American Society of Civil Engineers (ASCE) met 14-15 May in Atlanta, GA. Some minor business items were discussed, but most of the two days was spent on summarizing and analyzing the responses to a questionnaire circulated worldwide by the committee and in writing a report that could be transmitted through ASCE administrative units (MGA and TAC) to the Board of Directors.

The ASCE/COM developed the questionnaire to determine the use of conventional metric, SI, or other units for civil engineering practice in foreign countries. In addition to reviews by the 22-member COM, the questionnaire was sent to the National Bureau of Standards, Office of Metric Programs, National Institute of Building

Sciences, American National Metric Council, and U.S. Metric Association, among others, for comment before world-wide distribution. Starting in Nov. 1983, hundreds of the 2-page questionnaires were distributed to individual members, and the national committees or secretariats of 21 international organizations related to civil engineering and to a cross-section of private consulting offices in approximately 70 foreign countries. The contacts included such organizations as International Association for Bridge and Structural Engineering, International Union of Architects, International Society for Soil Mechanics and Foundation Engineering, Canadian Institute of Steel Construction, Nordic Committee on Building Regulations, International Council on Tall Buildings and Urban Habitat, and International Organization for the Development of Structural Concrete.

A total of 151 questionnaires from 51 countries were received. Because most responses were from the national committees or secretariates, the summary data represents many more people than are indicated by the number of responses. Of the responders, 105 are now using SI exclusively and 18 additional ones anticipate using SI in the near future. For the final question "Given the choice in your engineering design, which system would you use?," SI was named by 119, traditional metric by 27, and other units by none (not all respondents answered all questions so total responses varied from question to question).

The 12-page report by members of COM summarizes the questionnaire responses and makes recommendations regarding metric practice for ASCE in the United States. After the Atlanta meeting the report was approved by ASCE Management Group A (MGA) and transmitted to the Technical Activities Committee (TAC) for their acceptance and future transmittal to the ASCE Board of Directors. Final approval for publication of the complete report is not expected before the spring of 1985.

For information regarding COM activities, contact should be made with A. Ivan Johnson, Chairman, ASCE Committee on Metrication, Woodward-Clyde Consultants, 7600 E. Orchard Road, Harlequin Plaza-North, Englewood, CO 80111.

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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.

Ernest T. Selig
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^2)	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 feet (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	

$°F = 1.8 \text{ Temp } °C + 32$

$°C = (\text{Temp } °F - 32)/1.8$

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ASTM Committee D-18 on Soil and Rock

Scope

The promotion of knowledge; stimulation of research: the development of specifications and methods for sampling and testing; and the development of nomenclature, definitions, and practices relating to the properties and behavior of soil, rock, and the fluids contained therein. Excluded are the uses of rock for building stone and for constituent materials in portland cement and bituminous paving and structures coming under the jurisdiction of other committees. Included are the properties and behavior of: (1) soil-like materials such as peats and related organic materials, (2) geotextiles, and (3) fluids occupying the pore spaces, fissures, and other voids in soil and rock insofar as such fluids may influence the properties, behavior, and uses of the soil and rock materials.

Officers

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Membership Secretary: R. S. Ladd, Woodward-Clyde Consultants, 1425 Broad St., Clifton, NJ 07012.

Subcommittees and Their Chairmen

TECHNICAL

D18.01 Surface and Subsurface Reconnaissance
C. P. Fisher, Jr.

D 18.02 Sampling and Related Field Testing for Soil Investigations
H. E. Davis

D18.03 Texture, Plasticity, and Density Characteristics of Soils
R. S. Ladd

D18.04 Hydrologic Properties of Soil and Rock
R. S. Ladd

D18.05 Structural Properties of Soils
R. T. Donaghe

D18.06 Physico-Chemical Properties of Soils and Rocks
G. R. Olhoeft

D18.07 Identification and Classification of Soils
C. W. Britzius

D18.08 Special and Construction Control Tests
J. R. Talbot

D18.09 Dynamic Properties of Soils
M. L. Silver

D18.10 Bearing Tests of Soils in Place
G. Y. Balardi

D18.11 Deep Foundations
E. T. Mosley

D18.12 Rock Mechanics
H. J. Pincus

D18.13 Marine Geotechnics
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D18.14 Geotechnics of Waste Management
D. E. Clark

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M. C. Anday

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K. L. Saucier

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P. M. Jarrett

D18.19 Geotextiles and Their Applications
B. R. Christopher

D18.20 Impermeable Barriers
A. I. Johnson

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