



GRL NEWSLETTER

No. 19

INFORMATION GATHERED BY THE ENGINEERS OF
GOBLE RAUSCHE LIKINS AND ASSOCIATES, INC.

NOVEMBER 1992

Season's Greetings

This is our last 1992 Newsletter and we would like to now express our appreciation for the past cooperation and our wishes for the future. 1992 was again full of work, meetings, discoveries and developments. Our equipment and software have become faster, more powerful and more elegant. So, since the 486 PC, the laser printer and the fax now save us so much time(?), we hope that you can use that time for reflection of the good things that have been accomplished this year.

We thank you for your association with us during the past year and look forward to a fruitful cooperation in the New Year. Have a peaceful holiday season!

1992 PDA USERS DAYS FINISHED

The 1992 series of PDA User Days has come to an end. The series was started in March in Nanjing, China where approximately 100 Chinese PDA experts had gathered, and in Singapore with 25 in attendance. On August 27 and 28, about 40 PDA users, primarily from the USA, gathered here in Cleveland following a one-day seminar on wave equation use and general dynamic pile testing.

Also, approximately 30 piling experts joined PDE and PDI in The Hague on September 24 and 25, following the Fourth Stress Wave Conference. This European Users Days featured a special session on stress wave measurements on dynamic penetrometers. Hakan Erickson of Hercules Grundlaggning, Stockholm and Lars Weiner of the Swedish Geotechnical Institute presented their findings to compliment the growing efforts of GRL and PDI in the area.

HANNIGAN AND WEBSTER OPEN GRL CHICAGO OFFICE

GRL is pleased to report that Patrick J. Hannigan has joined the GRL engineering staff as of July. Pat is well known to the deep foundations industry as a practitioner, pile tester, author and lecturer. He had been involved in several research projects and practiced geotechnical engineering and dynamic pile testing as a Principal Engineer at STS Consultants. Pat graduated from the University of Notre Dame and holds an MSCE from the University of Missouri-Rolla. He is a registered P.E. in nine states.

Scott D. Webster, a graduate of The Citadel Military College with an MSCE from Michigan Technological University, also joined GRL in August. Scott had worked as a Senior Project Engineer for STS Consultants in Illinois, Virginia and North Carolina in a variety of assignments which included geotechnical engineering studies and dynamic pile testing and analyses. Scott is a registered P.E. in six states and is the co-author of several papers. Both Pat and Scott have opened our new GRL Chicago office (see back).

GRL AT FOURTH INTERNATIONAL STRESS WAVE CONFERENCE

From September 21 through 24, approximately 200 piling experts met at The Hague in Holland for the Fourth International Conference on the Application of Stress Wave Theory to Piles. Earlier, in 1980 and 1984, the Conference had been held in Stockholm under the sponsorship of the Swedish Geotechnical Institute. In 1988, Professor Bengt Fellenius of the University of Ottawa organized the Third Conference in Ottawa, Canada again in close cooperation with the SGI. It was then decided to hold the Fourth Conference in Holland in 1992.

Several Dutch Institutions sponsored this year's event, among them Ballast Nedam, Delft Geotechnical Institute, Fugro-McClelland, Heerema, ICE, IFCO, IHC, NGT, TNO and the University of Delft. The conference included several technical sessions and a most spectacular field exhibition. On that occasion, four hammer manufacturers competed in a speed driving event in Delft. Also, sheet piles were vibrated or pushed down and extracted and a variety of load and integrity tests were performed.

Prior to the conference, a number of "prediction" events were conducted. At the end of the exhibition day, dynamic results, static load-set curves, actual installation records and pre-manufactured pile defects were disclosed. Best predictions were honored in the great lecture hall of the University of Delft. Carl-John Grävare of Pile Dynamics Europe (PDE) had participated and won the first prize in the bearing capacity prediction category, having used a PAK (Pile Driving Analyzer™ Model K) and CAPWAP™.

During the technical and poster sessions, 88 technical papers were submitted. GRL contributed 11 papers which were presented by G. G. Goble, C. M. Morgano and F. Rausche. **The Proceedings of the Fourth International Conference of the Application of Stress Wave Measurements** has been edited by Prof. Frans Bahrends and published by A. A. Balkema, Rotterdam, Brookfield, Pile Dynamics, Inc. (PDI) in cooperation with PDE exhibited its most recently developed products, in particular the PAK and the P.I.T.-Collector.

In retrospect, the Conference was the most elaborate of the four Stress Wave Conferences to date. GRL expects the Fifth Stress Wave Conference (to be held in the United States in 1996) will continue the historic Olympic frequency cycle of the previous Stress Wave Conferences. Further information on the 1996 USA Stress Wave Conference will be forthcoming in future GRL Newsletters.

CALENDAR OF EVENTS WITH GRL PARTICIPATION

1993

Feb 18-19 **Seminar on Dynamic Pile Testing and Workshop on Wave Equation Analysis and NDT - Pile Integrity Testing**, Boulder, Colorado, GRL & Associates, Inc., Jay Berger, 303-494-0702.

Feb 22-26 **Deep Foundation Design**, Cocoa Beach, Florida, University of Florida, Ote Nelson, 904-392-1701 or fax 904-392-6950.

Mar 28- Apr 2 **American Concrete Institute**, Vancouver, British Columbia, 313-532-2600.

Apr 12-14 **13th Central Pennsylvania Geotechnical Seminar**, Hershey, Pennsylvania, ASCE and PA DOT, Cari Beonenga; 717-763-7211.

May 4-8 **11th Southeast Asian Geotechnical Conference**, Singapore, Professor K.Y. Yong, (65) 733-2922 or fax (65) 235-3530.

Jun 14-16 **Ninth International Bridge Conference**, Pittsburgh, Pennsylvania, Engineer's Society of Western Pennsylvania.

Oct 18-20 **Deep Foundations Institute 18th Annual Members' Conference**, Pittsburgh, Pennsylvania. Please see enclosed call for abstracts.

Oct 24-27 **American Society of Civil Engineers Annual Conference**, Dallas, Texas, 1-800-548-ASCE.

1994

Jan 5-10 **XIII International Conference on Soil Mechanics and Foundation Engineering**, New Delhi, India.

Nov **International Conference on Design and Construction of Deep Foundations**, Orlando, Florida, Federal Highway Authority, John Hou, 714-547-7178 or fax 714-547-7223. Please see enclosed call for abstracts.

GRL OPENS & RELOCATES OFFICES

GRL has recently widened its network to provide more local access at reduced travel costs for the benefit of our clients. Please note changes in our phone and fax numbers below.

GRL Chicago Opens Office. STS of Northbrook, IL a long term client of PDI decided in early 1992 to discontinue certain specialty geotechnical services. In this process, Pat Hannigan contacted GRL and established our new office, located at 1530 East Dundee Road #120, Palatine, IL 60067. Soon Scott Webster joined Pat. GRL Chicago is now fully equipped with the latest PDI equipment and serves both former STS clients, as well as STS itself, in addition to other midwest firms. For further information, please contact Pat or Scott.

GRL Los Angeles Opens Its Doors! GRL is pleased to announce its newest branch office providing consulting and testing services to southern California. Correspondence may be sent to GRL Los Angeles at 2973 Harbor Boulevard, #532, Costa Mesa, CA 92626-3989. If your company would like an in-house presentation of dynamic testing and analysis, please call Dr. Goble at 714-548-1174.

GRL Philadelphia Relocates. Wondem Teferra, GRL Philadelphia, found more space and moved to 223 Wilmington West Chester Pike, Suite 112-B, Chadds Ford, PA 19317.

GRL Seattle Relocates. Bert Miner moved the GRL Seattle office to 2238 Colchester Drive E., P.O. Box 340, Manchester, WA. 98366-0340.

GRL Colorado New Fax Number. The new fax number is 303-494-5027 please take note of it.

ORGANIZING COMMITTEE FORMED FOR 1994 DEEP FOUNDATIONS CONFERENCE

The Federal Highway Administration is planning an International Conference on Deep Foundations to be held in Orlando in November 1994. A call of papers is issued by the organizers in charge: John Hou, All American Soils, 711 South Bristol St., Santa Ana, CA 92703-4815.

BRAUN INTERTEC USES PDA & RECEIVES AWARD

For their excellent work in the design and construction of a major interchange near Minneapolis, Braun Intertec received an Engineering Excellence Honor Award from the Consulting Engineers Council of Minnesota. Using Monotube piles and the PDA for construction control, substantial savings were achieved over the more conventional design. Congratulations!

PILE TESTERS DUCK AK-47'S

Jonathan Cannon, Maunsell Ltd. of Australia, reported dynamically testing 1.5 m diameter drilled shafts to 3500 tons and 450 mm octagonal prestressed piles to 300 tons at a Mekong River Bridge between Thailand and Laos in early 1992. The border guards at first were suspicious of the pile testers but later realized that they wouldn't harm either piles or guards.

CALIENDO MOVES ON

Dr. Joseph A. Caliendo resigned as Florida State Geotechnical Engineer and assumed a professorship at Utah State University. Joe had been involved in many interesting Florida construction and research projects. In the ADSC June/July issue, he thanked participants of the "Load Testing of an Instrumented Drilled Shaft" project, among them GRL Florida's Mohamad Hussein and referred to the available report. Contact Becky at the ADSC Library; 214-343-2091 or fax 214-343-2384. Best wishes Joe!

GRL/PDI ATTEND DFI ANNUAL MEETING

Dr. George Goble and Mohamad Hussein attended the 1992 Annual DFI meeting in New Orleans. Dr. Goble, in-charge of the rewrite of DFI's Inspector's Guide to Hammers, attended the 17th committee meeting. Hussein presented a paper entitled "Determination of Pile Lengths Under Existing Structures," co-authored by Garland Likins. Other PDA users presenting were Roger Bullivant of Roger Bullivant Ltd., UK with the "Roger Bullivant Cone Pile" and Corey Rice of Braun Intertec Engineering Inc. with "Pile Installation Program in Minnesota," a paper that dealt with test results on various pile types. Dr. Goble is in charge of DFI's 1993 program in Pittsburgh.

WAVE EQUATION SEMINAR PLANNED

Dr. George Goble and Jay Berger, both GRL Colorado, have announced a seminar and workshop on wave equation and pile testing to be held February 18 and 19, 1993 in Boulder, Colorado. The attendees will be informed about testing equipments, analysis softwares and case studies. This year's seminar includes pile integrity testing. We request early reservations as space is limited. Last year's seminar was fully subscribed.

GRL

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