



GRL NEWSLETTER

Information gathered by
the engineers of
**GOBLE RAUSCHE LIKINS
AND ASSOCIATES, INC.**

**NUMBER 7
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CALENDAR OF EVENTS

- The Deep Foundations Institute (DFI) will have held its Raleigh, NC joint seminar with NCSU and ASCE at mail time of this newsletter. GRL participated in a demonstration pile test. A prestressed concrete pile was dynamically and statically tested during the convention. Timber reaction piles were also dynamically tested. The event was coordinated by Jim Harmston of Foundation Services.
- ISOPT-1, the First International Symposium on Penetration Testing, will be held March 20-24, 1988 in Orlando, FL. Pile Dynamics, Inc. (PDI) will be exhibiting equipment for electronic testing of SPT and other penetrometer devices.
- Kansas Department of Transportation will hold their Annual Engineering Conference March 30 and 31, 1988. PDI's Garland Likins will lecture on dynamic pile testing and will also spend time with the PDA engineers of Kansas DOT to answer their testing questions.
- University of Colorado Seminar On Dynamic Testing of Drilled Shafts will be held July 13 and 14, 1988 at the campus of the University of Colorado in Boulder according to G.G. Goble. A bulletin is enclosed with this newsletter.
- A PDA USERS DAY will be held in Singapore on October 31 and November 1, 1988. It will be organized by Balken Piling System of Gothenburg, Sweden. Introductory seminars for non-PDA users are also planned near this time in Bangkok and other cities. Please contact GRL or Balken Piling System in Sweden, phone (46-300-14590) for further information.

● PDA USERS DAY 1988 will be held May 22 and 23, 1988 in Cleveland, OH. The program will start at 1:00 PM, Sunday May 22 with discussions on

PDA and transducer developments
CAPWAPC developments
PIT - Low Strain Integrity Testing and
GRLWEAP advances

As during previous PDA Users Days, the PDA-engineers will have hands-on learning with the newest hardware and software. Exchange of ideas and experiences will form the foundation of the event.

It is expected that the PDA Users Day participants will drive or fly to Ottawa on May 24 to attend the Third International Stress Wave Conference.

- Third International Conference on the Application of Stress Wave Theory on Piles, May 25, 26 and 27, 1988, Ottawa, Canada.

Bulletin No. 2 is enclosed. Participants from all continents are expected to be present. Proceedings will include papers covering basic research as well as applications and case studies on bearing capacity and integrity testing, driveability and dynamic pile-soil interaction analysis. Please make sure to register for both conference and hotel.
- The DFI Annual Members' Seminar and Meeting will be held October 10, 11 and 12, 1988 in Atlanta. Please contact DFI, P.O. Box 281, Sparta, NY 07871, phone (201) 729-9679 for further details.

SEMINAR ACTIVITIES

Bert Miner, former GRL Colorado Manager and now a research assistant at the University of Texas in Austin, presented a talk on "Dynamic Analysis of Pile Capacity" to the ASCE members of Corpus Christi, TX at their October 1987 meeting.

PDA TRAINING

GRL engineers have recently conducted training sessions with engineers of the Departments of Transportation of Florida and Alabama. Topics included Wave Equation, wave mechanics, Case Method, PDA operations and CAPWAPC analyses. At Nebraska DOT, a review of results was conducted by GRL engineer C. M. Morgano.

PILE BUCK ANNUAL

GRL has participated in the preparation of the Pile Buck Annual which is now available according to Mr. C.S. Smoot, President, Pile Buck, Inc., P.O. Box 1056, Jupiter, FL 33468.

FLORIDA

After GRL performed a low-strain integrity test on short notice in Fort Lauderdale, District Director for I-595, Don E. Henderson, P.E. personally thanked GRL in a letter dated December 22, 1987 for the quick response. He concluded the letter saying: **GRL has once again demonstrated it is a firm which can be counted on in an emergency.**

GRL Florida Manager Mohamad Hussein reports that a dynamic and static pile test series was performed at the Orlando International Airport. Development of set-up bearing capacity with time has been documented and is available for efficient construction control testing.

PHILADELPHIA

GRL Philadelphia Manager Wondem Teferra reports a large number of timber pile tests along the US East Coast. The tests not only involve new but also existing foundations which are retested for length, integrity or bearing capacity.

GULF OF MEXICO

GRL Colorado Manager Jay Berger assisted on an oil-related installation in the Gulf of Mexico. He tested piles of up to 1400 ft (430 m) length and 400 ft (120 m) penetration. Clear reflections were registered by the Pile Driving Analyzer from soil friction and cross section changes near the pile toe.

CALIFORNIA

After pile damage developed during driving, GRLCO's Jay Berger tested undriven piles on a site in California using the Low Strain Pile Integrity Tester (PIT). Deficiencies were easily spotted and then confirmed by drilling through the questionable pile cross section.

BRAZIL

GRL regrets an error in its No. 6, November 1987 Newsletter. SUPORTE is not a part of the testing team on the offshore platforms.

NEWS FROM PILE DYNAMICS, INC.

The Pile Driving Analyzer's memory has been significantly expanded and temporary storage of up to 97 records is now possible. These records can be chosen by the user at regular intervals. The PDA also sends both digital records and selected results to digital storage devices. In conjunction with a lap-top or other portable PC, investments in expensive analog FM-recorders may now be avoided. The portable PC also allows for on-site CAPWAPC. PDA owners may contact PDI for an upgrade. The system was used for the first time on a cold day in February on a bridge construction site in the Cleveland Metro Parks.

PERSONNEL NEWS

Beth A. Richardson joined the GRL staff in February 1988. Beth is a graduate of the University of Akron where she received a Bachelor of Science degree in Computer Science. GRL's Amy Stroberg and Beth will both help our clients with software related questions and further develop GRL's software.

Pile Dynamics, Inc. is pleased to welcome Carl Webb, a resident of Rio de Janeiro, as a member of its staff. Carl, who is primarily involved in the design and installation of offshore structures, will be in charge of PDI's Brazilian offshore testing. In January, Carl was in Cleveland for PDA and CAPWAPC training.

AUSTRALIA

Julian Seidel of Piletest in Newmarket, Australia reports the successful dynamic testing of "barrettes," 13 m long, 2.8 m wide and 0.5 m thick cast-in-place concrete panels. One of the difficulties was the uniform transfer of impact loads over the total panel cross section. This was accomplished by means of a cast-on adaptor top section which was tapered under 45°.

GRLWEAP (WEAP86) NEWS

GRLWEAP has become the successor of WEAP86. GRL distributed the new program including pre- and post-processors to its CAPWAPC users. All clients who have purchased WEAP86 from GRL during the past 12 months are invited to contact GRL for their free update. Other GRL clients may update to the new program and manual at a low cost.

GRLWEAP offers new analysis options which give the program greater versatility. The graphics output and the help files in the input routine have been greatly expanded. The hammer data file contains data of the newest hammers including hydraulic ones.

CU RESEARCH NEWS

A dynamic test facility is being constructed in the Structures Lab at the University of Colorado for use by the Piling Research Laboratory. This facility will make it possible to induce a controlled axial stress wave in a rod. The test rod will be easily changed to meet required conditions. The primary function of the facility is to test transducers under a wide range of conditions that are accurately controlled. A secondary objective is the performance of controlled tests on SPT systems to support the current SPT research.

VISITORS RECEIVE TRAINING

The new year started with a visit by Jorge Beim of PDI-Engenharia, Rio de Janeiro. Jorge is actively involved in dynamic pile testing. His schedule included both PDA and CAPWAPC training in Cleveland, Orlando and Tampa.

In February, Gina Beim, Manager of PDI Engenharia, also spent time in Cleveland for CAPWAPC training.

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