7th Stresswave Conference Roundup

The following news is excerpted from the PDI/GRL Newsletter No. 48 – Sep. 2004.

The 7th International Conference on the Application of Stress Wave Theory to Piles was held in August in Kuala Lumpur, Malaysia, marking its first time in Asia. This conference has been occurring every four years since 1980 with previous locations in Europe, North America and South America.

Dr. George Goble, George G. Goble Consulting Engineer LLC, gave the keynote address “Pile Dynamics Stress Wave Measurement and Evaluation: Past, Present and Future”. Dr. Goble reviewed development of electronics and sensor technology, and of analysis methods and software. He summarized current practice, including use of the Pile Driving Analyzer® (PDA) model PAL-R with remote transmission capabilities, and envisioned a future when setup would be used more advantageously to lower pile foundation costs and the Load and Resistance Factor Design codes would be implemented.

GRL’s Dr. Frank Rausch and PDI’s Garland Likins delivered special invited lectures. Garland Likins presented “Correlation of CAPWAP® with Static Load Tests”, co-authored with Frank Rausch. This paper summarizes the CAPWAP correlations presented at the previous six Stresswave Conferences dating back to 1980. Data furnished by various PDA users was combined with the original 1975 study by Goble and with the database compiled by GRL for the United States Federal Highway Administration in 1996. Static test results and re-drill dynamic test results were available for 303 piles. The statistical analysis yielded an average CAPWAP prediction to Static Test result ratio of 0.98 and an excellent coefficient of variation of 0.17, confirming the reliability of CAPWAP.

Frank Rausch presented the special lecture “Application and Correlation of the Wave Equation Program GRLWEAP™”, co-authored with Dr. Liquan Liang, Dave Raneman and Ryan Allin. This paper shows that the residual stress option in GRLWEAP makes a relatively large difference in predictions for flexible piles and strongly recommends its use. It also compares predictions with measurements for numerous test cases for both steel and concrete piles, demonstrating the accuracy of GRLWEAP.

Other papers presented included the following:
- Identifying Soil Relaxation from Dynamic Testing, by Michael Morgano and Ben White
- Evaluation of Defects and Tomography for CS, by Garland Likins, Scott Webster and Mario Saavedra
- Inspection and Quality Control of Augercast Piles, by George Piscalko and Ben White
- Dynamic and Static Load Testing of an Augercast Pile, by Bill Chambers and Michael Morgano
- Large Drop Hammer Testing on Driven Piles in Delaware, by Wondem Teferra, Jeff Basford, and Frank Rausche
- Dynamic Pile Test Records with Unusual Characteristics, by Mohamad Hussein, Marty Bixler and Brian Mondello

Several other experienced users of PDI equipment contributed papers on high strain PDA testing, low strain PIT tests, and CSL. Complete conference proceedings may be obtained from Stresswave organizing committee member Richard Yu (richard@pac-ap.com) for US $40 per copy, plus shipping. Selected papers are available at www.pile.com.