

Introduction

With the introduction of ASTM Testing Piles Under Lateral Loads (D 3966) in 1981, ASTM Subcommittee D18.11 on Deep Foundations began formulation of a symposium to be held in June 1983. The purpose of the symposium was to provide a forum for the presentation of recent advances in the analysis, design, and performance of laterally loaded piles and pile groups. Specifically, the symposium committee sought papers addressing 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, concurrent vertical loading, and case histories of performance.

Of the 27 papers initially offered for consideration 11 papers were accepted and presented at the symposium. Those papers presented and included in this volume were by: R. Pyke and M. Bikae; K. Habibagahi and J. Langer; R. Sogge; L. Reese and S. Wright; S. Gleser; J. Briaud et al; W. Cox et al, K. Bhushan and S. Askari; D. Gle and R. Woods; L. Johnson et al; and M. Oakland and J. L. Chameau. The other papers contained herein were accepted but submitted too late for presentation.

The symposium sessions were chaired by members of the organizing committee. The morning session, chaired by Ernest Mosley, addressed design and analysis; the afternoon session, chaired by Christopher Thompson, addressed case histories; and the concluding panel discussion, moderated by the symposium chairman, included all of the symposium speakers as panelists.

In 1953, ASTM sponsored a symposium on laterally loaded piles. That symposium was a milestone as one of the earliest opportunities for discussion of the limited testing and analysis procedures available at that time. Significant advances have been made in the intervening 30 years in the procedures for analysis and testing and in the unique applications of laterally loaded piles. This volume contains some of the latest analysis and testing techniques and applications of piles subject to lateral loading. Several papers are the result of recent technology including heliostat foundations subject to cyclic loading and very small tolerable deflections, offshore drilled shafts subject to large cyclic loads, microcomputer analysis, and the use of the pressuremeter. One paper summarizes and expands much of the previous work concerning the appropriate horizontal subgrade modulus for granular soils. Other papers present special testing procedures and applications including dynamic and group testing and

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use of piles for slope stabilization. Still others present new methods of analysis. Although many questions remain unanswered, this volume is a valuable tool for the engineers and researchers who seek current knowledge on the design, analysis, and performance of laterally loaded piles and pile groups.

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