Journal of the

STRUCTURAL DIVISION

Proceedings of the American Society of Civil Engineers

STRUCTURAL DIVISION EXECUTIVE COMMITTEE Lynn S. Beedle, Chairman; Bruce G. Johnston, Vice-Chairman; Henry J. Degenkolb; Gerard F. Fox; Jack G. Bouwkamp, Secretary; Ralph B. Peck, Board Contact Member

COMMITTEE ON PUBLICATIONS

Gerald F. Borrmann, Chairman; Glen V. Berg; Freeman P. Drew;
Herbert M. Glen; John D. Haltiwanger; Francis J. Hanrahan;
H. A. Miklofsky; William G. Murphy; Raymond C. Reese;
Henry J. Degenkolb, Executive Committee Contact Member

CONTENTS

February, 1965

Papers

	Page
Effect of Large Alternating Strains on Steel Beams by Vitelmo V. Bertero and Egor P. Popov	1
Survey of Current Structural Research Progress Report of the Committee on Research	13
Wood Beams Prestressed with Bonded Tension Elements by John Peterson	103
Strength of Round Steel Columns by Theodore V. Galambos	121
Buckling of Three-Legged Columns With Batten Bracing by Jorge Y. Tamayo and Morris Ojalvo	141
Copyright 1965 by the American Society of Civil Engineers. Note.—Part 2 of this Journal is the 1965-9 Newsletter of the Structu Division. The three preceding issues of this Journal are dated August, 1964, C ber, 1964, and December, 1964.	

Masonry Walls on Continuous Beams by Saky Rosenhaupt and Yehuda Sokal	155
Membrane Forces and Buckling in Reticulated Shells by Douglas T. Wright	173
Torsion of Structural Shapes by I. A. El Darwish and Bruce G. Johnston	203
Slenderness Effects in Buildings by Emilio Rosenblueth	229
Ribless Folded Plates by Seng-Lip Lee, Victor A. Pulmano, and T. J. Lin	253

Page

DISCUSSION

Nonlinear Behavior of Structural Plane Frames, by S. A. Saafan. (August, 1963). Prior discussion December, 1963, April, August, 1964. Discussion closed.) by S. A. Saafan (closure)	2 79
Matrix Analysis of Semi-Rigidly Connected Frames, by G. R. Monforton and T. S. Wu. (December, 1963. Prior discussion: April, June, August, 1964. Dis- cussion closed.) by G. R. Monforton and T. S. Wu (closure)	281
 General Computer Program for Limit Analysis, by Chu-Kia Wang. (December, 1963. Prior discussion: April, August, 1964. Discussion closed.) by Chu-Kia Wang (closure)	283
 Philosophy of Engineering Design of Structures, by Malcolm S. Gregory. (December, 1963. Prior dis- cussion: June, August, 1964. Discussion closed.) by Malcolm S. Gregory (closure)	284
Error Statistics for Reinforced Concrete Beams, by Theodore Zsutty, (December, 1963. Prior discussion: August, 1964. Discussion closed.) by Theodore Zsutty (closure)	286
Phase I Report of the Task Committee on Folded Plate Construction, by the Task Committee on Folded Plate Construction. (December, 1963. Prior discussion: April, June, 1964. Discussion closed.) Task Committee on Folded Plate Con-	
struction (closure)	288

Energy Absorption of Structures Under Cyclic Load- ing, by Kenneth Medearis and D. H. Young. (February, 1964. Prior discussion: October, 1964. Discussion closed.) by Kenneth Medearis and D. H. Young (closure)	290
Deflection of Circular Curved I Beams, by Ross A. Close. (February, 1964. Prior dis- cussion: October, 1964. Discussion closed.) by Ross A. Close (closure)	292
Pressure Testing of Thick Reinforced Concrete Cell, by Stanley H. Fistedis. (April, 1964. Prior discussion: None. Discussion closed.) by Stanley H. Fistedis (closure)	294
Response of Structures to Triangular Pulse Load- ing, by Tseng Huang. (April, 1964. Prior dis- cussion: None. Discussion closed.) by Tseng Huang (closure)	295
Reinforcement Requirements for Girder Web Openings, by Edmund P. Segner, Jr. (June, 1964. Prior discussion: None. Discussion closed.) by Peter Kocsis by Herman Tachau	295 298
 Structural Analysis of Multistory Buildings, by Ray W. Clough, Ian P. King, and Edward L. Wilson. (June, 1964. Prior discussion: December, 1964. Discussion closed.) by Semih S. Tezcan by A. A. Eremin 	301 303
by James L. Tocher Moment Equations for Computer Analysis, by Semih S. Tezcan. (June, 1964. Prior discussion: None. Discussion closed.)	303
by A. A. Eremin Cable Movements Under Two-Dimensional Loads, by Terrence O'Brien and Arthur J. Francis. (June, 1964. Prior discussion: None. Discussion closed.) by Alan Jennings	307 307
Analysis of Short Span Folded Plates, by Kaveti Seetharamulu and Mangesh G. Kularni. (June, 1964. Prior discussion: None. Discussion closed.) by Peter Gergely	311
Strength of Elastically Stabilized Beams, by Robert W. Haussler. (June, 1964. Prior dis- cussion: October, 1964. Discussion closed.) by Richard T. Douty	312

Dynamic Plastic Analysis of Steel Frames, by B. Rawlings. (June, 1964. Prior discussion: None. Discussion closed.) by A. A. Eremin	316
Interaction of Shear Walls and Frames, by Fazlur R. Khan and John A. Sbarounis. (June, 1964. Prior discussion: None. Discussion closed.) by Yoshio E. Yamamoto	317
Frames of Solid Bars of Varying Cross Sections, by Edward J. Krynicki and Zbigniew E. Mazurkiewiez. (August, 1964. Prior discussion: None. Discussion closed.) by Shou-ling Wang by S. Z. Al-Sarraf	318 320
 Buckling of a Prestressed Circular Ring, by John E. Goldberg and John L. Bogdanoff. (August, 1964. Prior discussion: None. Discussion closed.) by James A. Cheney	328 329
Vacuum-Cast Refractory Castables, by David J. Damiano. (October, 1964. Prior discussion: None. Discussion closes March 1, 1965.) by Jacob J. Creskoff	332
 Buckling of Longitudinally Stiffened Cylinders, by Jeng C. Shang, Walter J. Marulic, and Rolland G. Sturm. (October, 1964. Prior discussion: None. Discussion closes March 1, 1965.) by Richard L. de Neufville	333

INFORMATION RETRIEVAL

The key words, abstract, and reference "cards" for each article in this Journal represent part of the ASCE participation in the EJC information retrieval plan. The retrieval data are placed herein so that each can be cut out, placed on a 3×5 card and given an accession number for the user's file. The accession number is then entered on key word cards so that the user can subsequently match key words to choose the articles he wishes. Details of this program were given in an August 1962 article in CIVIL ENGINEERING, reprints of which are available on request to ASCE headquarters.