## Journal of the

## HYDRAULICS DIVISION

## Proceedings of the American Society of Civil Engineers

HYDRAULICS DIVISION EXECUTIVE COMMITTEE Arno T. Lenz, Chairman; Harold K. Pratt, Vice-Chairman; Donald R. F. Harleman; Herbert S. Riesbol; Frederick R. Brown, Secretary; Samuel I. Zack, Board Contact Member

> COMMITTEE ON PUBLICATIONS James R. Villemonte, Chairman; Frederick R. Brown; Francis G. Christian; Arno T. Lenz

> > CONTENTS

January, 1964

## Papers

Shear and Velocity Distribution in Shallow Channels by H. Lundgren and Ivar G. Jonsson	1
Hydraulic Jump in All Shapes of Horizontal Channels by Richard Silvester	23
Weather Modification by Richard A. Schleusener	57
Ratio of True to Fixed-Interval Maximum Rainfall by Leonard L. Weiss	77
Pneumatic Reduction of Salt Intrusion through Locks by G. Abraham and P. v. d. Burgh	83

Copyright 1964 by the American Society of Civil Engineers.

Note. - Part 2 of this Journal is the 1964-2 Newsletter of the Hydraulics Division.

The three preceding issues of this Journal are dated July 1963, September 1963, and November 1963.

Stability Aspects of Flow in Open Channels, by Francis F. Escoffier and Marden B. Boyd. (November, 1962. Prior discussion: May, July, 1963. Discussion closed.) by Francis F. Escoffier and Marden B. Boyd (closure) ..... 261 Flood Control Operation of Reservoirs, by Leo R. Beard. (January, 1963. Prior discussion: September, 1963. Discussion closed.) Equilibrium Characteristics of Sand Beaches, by P. S. Eagleson, B. Glenne, and J. A. Dracup. (January, 1963. Prior discussion: None. Discussion closed.) Valve Stroking to Control Water Hammer, by Victor L. Streeter. (March, 1963. Prior discussion: September, 1963. Discussion closed.) Turbulent Flow in Rectangular Ducts, by Hans J. Leutheusser. (May, 1963. Prior discussion: None. Discussion closed.) Project Yields by a Probability Method, by W. Don Maugham and R. Y. Kawano. (May, 1963. Prior discussion: November, 1963. Discussion closed.) 273 Flow Characteristics of Axisymmetric Expansions, by M. C. Chaturvedi. (May, 1963. Prior discussion: September, 1963. Discussion closed.) 277 281 An Analysis of Relief Bridge Scour, by Emmett M. Laursen. (May, 1963. Prior discussion: None. Discussion closed.) 287 Ground Water in Texas, by Mervin L. Klug. (May, 1963. Prior discussion: None. Discussion closed.) 289 Experience with Prototype Energy Dissipators, by R. H. Berryhill. (May, 1963. Prior discussion: September, November, 1963. Discussion closed.) 293 

Page

Short Cuts in Hydrology, by Arthur I. McCutchan.	
<ul> <li>(May, 1963. Prior discussion: November, 1963.</li> <li>Discussion closed.)</li> <li>by M. S. Misra</li> <li>by Tate Dalrymple</li> </ul>	299 300
<ul> <li>An Expression for Bed-Load Transportation, by</li> <li>M. Selim Yalina. (May, 1963. Prior discussion:</li> <li>None. Discussion closed.)</li> <li>by Carl F. Nordin, Jr., and J. P. Beverage</li> </ul>	303
<ul> <li>Velocity of a Water-Hammer Wave in an Elastic Pipe,</li> <li>by A. R. Halliwell (July, 1963. Prior discussion:</li> <li>November, 1963. Discussion closed.)</li> <li>by Raymond C. Binder</li> <li>by Don J. Wood</li> </ul>	315 316
Solving the Equations of Uniform Flow, by William F. Pickard. (July, 1963. Prior discussion: None. Discussion closed.) by L. E. Jones by M. H. Diskin by Ven Te Chow and V. C. Kulandaiswamy	319 320 325
Flood Waves in Prismatic Channels, by F. M. Henderson. (July, 1963. Prior discussion: None. Discussion closed.) by J. I. Collins by A. J. M. Harrison. by D. L. Brakensiek	329 331 333
Sediment-Transport Capability in Erodible Channels, by Shieh-Wen Mao and Leonard Rice. (July, 1963. Prior discussion: None. Discussion closed.) by Bruce R. Colby by Hsieh Wen Shen	337 345
<ul> <li>Accuracy of Current Meter Measurements, by</li> <li>Rolland W. Carter and Irving E. Anderson. (July,</li> <li>1963. Prior discussion: None. Discussion closed.)</li> <li>by Bruce R. Colby</li> <li>by Steponas Kolupaila</li> </ul>	349 352
A Simple Dimensional Method for Hydraulic Problems, by R. B. Whittington. (September, 1963. Prior discussion: None. Discussion closes February 1, 1964.)	357
Natural Roughness Effects in Rigid Open Channels, by A. G. Mirajgaoker and K. L. N. Charlu. (September, 1963. Prior discussion: None. Discussion closes February 1, 1964.)	
by C. R. Neill	359

Sediment Transportation Mechanics: Suspension of Sediment, Task Committee on Preparation of Sedimentation Manual. (September, 1963. Prior discussion: None. Discussion closes February 1, 1964.) by Hunter Rouse	361
Sediment Transportation Mechanics: Density Currents, Task Committee on Preparation of Sedimentation Manual. (September, 1963. Prior discussion: None. Discussion closes <b>Feb</b> ruary 1, 1964.)	
by Hunter Rouse	365
Flow of Clay-Water Suspensions, by Charles D. D. Howard. (September, 1963. Prior discussion: None. Discussion closes February 1, 1964.)	
by George Bugliarello	367

Page