CONTENTS

Papers	Page
UNIFIED NONDIMENSIONAL FORMULATION FOR OPEN CHANNEL FLOW by Paul Minton and Rodney J. Sobey	1
DISPERSION FROM PIT IN UNIFORM SEEPAGE by Bruce W. Hunt	13
SEEPAGE FROM SHALLOW RESERVOIR by Bruce W. Hunt	23
EXACT NONLINEAR MODEL OF WAVE GENERATOR by Roger H. Multer	31
MATRIX METHOD FOR ANALYSIS OF HYDRAULIC NETWORKS by Amir N. Nahavandi and George V. Catanzaro	47
ESTIMATING DISCHARGE FROM SUPERELEVATION IN BENDS by Robert P. Apmann	65
FLUID FLOWS FROM AXISYMMETRIC ORIFICES AND VALVES by Stevens T. K. Chan and Bruce E. Larock	81
COMPUTING EVAPOTRANSPIRATION BY GEOSTROPHIC DRAG CONCEPT by John A. Mawdsley and Wilfried Brutsaert	99
HYDRAULIC ROUGHNESS OF ICE COVERS by Peter Larsen	111
(over)	

The Society is not responsible for any statement made or opinion expressed in its publications.

This Journal is published monthly by the American Society of Civil Engineers, Publications office is at 345 East 47th Street, New York, N.Y. 10017. Address all ASCE correspondence to the Editorial and General Offices at 345 East 47th Street, New York, N.Y. 10017. Allow six weeks for change of address to become effective. Subscription price to members is \$8.00. Nonmember subscriptions available; prices obtainable on request. Second-class postage paid at New York, N.Y. and at additional mailing offices. HY SM

	Page
BAGNOLD APPROACH AND BED-FORM DEVELOPMENT by Christopher John Pratt	121
TRANSIENT HYDRAULIC SIMULATION OF BREACHED EARTH DAMS	
by Danny L. Fread and Terence E. Harbaugh	139
COMPUTER MODEL OF VORTEX SHEDDING FROM A CYLINDER	
by John R. Chaplin	155
WATER-HAMMER CHARTS FOR VARIOUS TYPES OF VALVES by Don J. Wood and S. E. Jones	167
UNIT-RESPONSE METHOD OF OPEN-CHANNEL FLOW ROUTING	
by Vernon B. Sauer	179
LONGITUDINAL DISPERSION IN SINUOUS CHANNELS by Shoji Fukuoka and William W. Sayre	195
SHAPE EFFECTS ON RESISTANCE IN FLOOD-PLAIN	100
CHANNELS by Chin-Lien Yen and Donald E. Overton	219
RELATIVE DIFFUSION IN NONISOTROPIC TURBULENCE by Jacob Odgaard	239
DISCUSSION	
Proc. Paper 9459	
CHAPTER III. SEDIMENT MEASUREMENT TECHNIQUES: RESERVOIR DEPOSITS, by the Task Committee on Preparation of Sedimentation Manual, Committee on Sedimentation of the Hydraulics Division (Dec., 1970. Prior Discussions: June, Aug., Sept., 1971).	
closure	261
BED LOAD TRANSPORTATION IN ALLUVIAL CHANNELS, a by Satya P. Garg, A. K. Agrawal, and Prem Raj Singh (May, 1971. Prior Discussions: Jan., Oct., 1972).	263
by Öner Yücel	200
by Rolf Kellerhals and Dale I. Bray (Aug., 1971. Prior Discussions: Jan., May, 1972).	
closure	266

 $^{{\}tt a}$ Discussion period closed for this paper. Any other discussion received during this discussion period will be published in subsequent Journals.

	Page
FLOW OVER ROUNDED SPILLWAYS, by Kamil H. M. Ali (Feb., 1972).	
by John J. Cassidy	267
EFFECT OF TRANSPORTATION PLANNING ON FLOOD PLAIN MANAGEMENT, by Thomas M. Lee (Mar., 1972). by C. T. Sriramulu and G. Padmanabhan	269
BIAS IN COMPUTED FLOOD RISK, a by Clayton H. Hardison and Marshall E. Jennings (Mar., 1972). by Bernard W. Gould	270
OBTAINING OVERLAND FLOW RESISTANCE BY OPTIMIZA-	
TION, by David L. Schreiber and Donald L. Bender (Mar., 1972). by Donald E. Overton by Omkar N. Wakhlu	273 274
END EFFECTS IN MODELS FOR SEEPAGE BELOW WEIRS, by S. Muthukumaran and V. C. Kulandaiswamy (Mar., 1972). by S. H. Nagaraja and V. G. Palnitkar	277
ROLE OF ECONOMICS IN PLANNING FLOOD PLAIN LAND USE, a by L. Douglas James (June, 1972).	211
by Emmet M. Laursen	280
· ·	
TECHNICAL NOTES	
Proc. Paper 9463	
MODIFIED USBR IMPACT BASIN by Clifford D. Smith and Elias M. Korolischuk	283

^a Discussion period closed for this paper. Any other discussion received during this discussion period will be published in subsequent Journals.