

# CONTENTS

<b>Design of Transit Structures for Urban Areas</b> <i>by David G. Hammond and Drupad B. Desai</i> (Urban Transportation Division) . . . . .	1
<b>Economic Measure of Benefits of Transportation</b> <i>by John F. Brotchie</i> (Urban Transportation Division) . . . . .	17
<b>Transportation Energy Considerations</b> <i>by Alexander French</i> (Urban Transportation Division) . . . . .	27
<b>Gate-Arrival Terminals—Solution for Air Cargo?</b> <i>by Francis Chin, Richard de Neufville, and Jorge Rebelo</i> (Air Transport Division) . . . . .	47
<b>Roadside Slope Design for Safety</b> <i>by Eugene L. Marquis and Graeme D. Weaver</i> (Highway Division) . . . . .	61
<b>Access Control on Arterial Highways</b> <i>by John C. Glennon and Jamil A. Azzeh</i> (Urban Transportation Division) . . . . .	75
<b>Processing Variable Forms for Travel Estimation</b> <i>by Jason C. Yu and Robert J. Popper</i> (Highway Division) . . . . .	91

→

---

This Journal is published quarterly 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 \$6.00. Nonmember subscriptions available; prices obtainable on request. Second-class postage paid at New York, N.Y. and at additional mailing offices. TE.

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

<b>Use of Finite Element Analyses for Railcar Design</b> by Michael J. Dennis (Urban Transportation Division) . . . . .	105
<b>Measuring Watershed Land-Use Changes with Airphotos</b> by Donald B. Stafford, James T. Ligon, and M. Eugene Nettles (Technical Council on Aerospace) . . . . .	117
<b>State-of-the-Art of Ballastless Track at-Grade</b> by Walter L. Wheeler (Urban Transportation Division) . . . . .	131
<b>Factors Affecting Reliability of Urban Bus Services</b> by Brian P. Sterman and Joseph L. Schofer (Urban Transportation Division) . . . . .	147
<b>An Algorithm for Route Deviation Service</b> by Stanley T. L. Lung and Wilfred W. Recker (Urban Transportation Division) . . . . .	161

---

DISCUSSION

Proc. Paper 11881

---

<b>Finite Element Analysis of Pile-Supported Pavement Structures</b> , by Raman Pichumani, John E. Crawford, and George E. Triandafilidis (May, 1974. Prior Discussion: May, 1975). <i>closure</i> . . . . .	179
<b>Need for Estimated Cement Requirements for Stabilizing Lateritic Soils</b> , by Samuel A. Ola (May, 1974. Prior Discussion: May, 1975). <i>closure</i> . . . . .	180
<b>Use of Simulation in Airport Planning and Design</b> , by Dana E. Low (Nov., 1974. Prior Discussion: Aug., 1975). <i>closure</i> . . . . .	182