



# SMPTE Journal

VOLUME 92 • NUMBER 9

SEPTEMBER 1983

## EXECUTIVE

Maurice L. French  
*Editorial Vice-President*  
Calvin M. Hotchkiss  
*Chairman/ Board of Editors*  
Lynette Robinson  
*Executive Secretary*

## EDITORIAL STAFF

Jeffrey B. Friedman  
*Editor*  
Joyce R. Hurwitz  
*Associate Editor*  
Anita J. Myers  
*Assistant Editor*  
Rae Hargrave  
*Senior Writer*  
Mathew V. Kuriakose  
*Production Supervisor*  
Mary V. Connolly  
*Editorial/ Program Coordinator*  
MaryAnn Fruscianté  
*Production Coordinator*

## ADVERTISING

Dorothy Smith  
*Manager, Exhibits and Advertising*  
Jean Danielson  
*Advertising Secretary*

## ENGINEERING

Alex E. Alden  
*Manager of Engineering*  
Barry C. Detwiler  
*Television Engineer*  
Stanislav Dickinson  
*Motion Picture Engineer*

## MEMBERSHIP

Josephine LaVecchia  
*Manager, Membership Services*

## ARTICLES

- 908 Some Arithmetic Control Algorithms for a Digital Video Effects Unit □ *James E. Blecksmith*
- 912 Electronic Graphics in Television — The Next Step □ *John A. Briggs*
- 918 8–9 Block Code: A DC-Free Channel Code for Digital Magnetic Recording □ *Hirofumi Yoshida, Toshiyuki Shimada, and Yoshitaka Hashimoto*
- 923 The Type-C Format — A Moving Target □ *William F. Carpenter*
- 927 Psychophysical Relationship of Image-Quality Characteristics of Motion-Picture Color Films □ *Wilfried Liekens*
- 938 Projection Performance of Theatrical Motion-Picture Films Using Xenon Short-Arc Lamps □ *Paul Preo*
- 945 A Cost-Effective Video Compressor □ *Kieran K. Fok*
- 948 Biographical Notes, SMPTE Governors Hollywood Region: Edmund M. DiGiulio, 1982–83; Richard J. Stumpf, 1983–1984; Edward H. Reichard, 1982–83; and Dr. Roderick T. Ryan, 1983–84.

## SMPTE REPORTS

- 951 Retirement Can Be a Profitable Pastime □ *Leonard A. Green*
- 954 SMPTE Hollywood Section Presents a Tutorial Seminar on Production Lighting Techniques □ *Laurence J. Roberts*
- 961 Chicago Section Holds Eighth Annual All-Day Meeting — May 7, 1983  
*Ann Brack*
- 964 125th SMPTE Technical Conference and Equipment Exhibit, Los Angeles, October 30–November 4, 1983

## SMPTE NEWS AND DEPARTMENTS

- |     |                                |      |                            |
|-----|--------------------------------|------|----------------------------|
| 906 | Calendar                       | 994  | Book Reviews               |
| 907 | Highlights                     | 996  | Books, Booklets, Brochures |
| 988 | Section Meetings               | 1004 | New Products               |
| 989 | Obituary                       | 1014 | Professional Services      |
| 990 | Theater Evaluation Form (rev.) | 1016 | Classified                 |
| 992 | News                           | 1016 | Ad Index                   |

## STANDARDS AND RECOMMENDED PRACTICES

- 1018 Approved American National Standards
- 1021 Approved SMPTE Recommended Practice
- 1023 Approved International Standard

*SMPTE JOURNAL* (ISSN: 0036-1682) published monthly by the Society of Motion Picture and Television Engineers, 862 Scarsdale Avenue, Scarsdale, NY 10583. Second-class postage paid at Scarsdale, N.Y., and at additional mailing office. Copyright © 1983 by the Society of Motion Picture and Television Engineers, Inc. All rights reserved. Printed in the U.S.A. No part of this issue may be reproduced without written permission of the publisher. Statements and opinions expressed in articles or editorials in the *SMPTE JOURNAL* are expressions of contributors and do not necessarily represent the policies or opinions of the Society. **Advertisements** appearing in this publication are the sole responsibility of the advertiser. **Membership** in the Society is open to any individual according to that person's qualifications. The Society's Headquarters welcomes inquiries from individuals who may apply for these grades: Active (annual dues \$50.00), Associate (annual dues \$50.00), and Student (annual dues \$15.00). All members receive the *SMPTE JOURNAL*. **Subscriptions** are available to nonmembers. Annual rates: \$55.00 United States; \$55.00 plus \$10.00 postage elsewhere. Single issues, \$6.00. Subscription rates to students, \$17.00 United States; \$17.00 plus \$10.00 postage elsewhere. *JOURNALS* will be mailed overseas by *airmail printed matter* to members and subscribers at a surcharge of \$50.00 to Europe and \$65.00 to Asia (in addition to the rates listed above).