



# SMPTE Journal®

VOLUME 93 • NUMBER 10

OCTOBER 1984

## EXECUTIVE

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

## EDITORIAL STAFF

Jeffrey B. Friedman  
*Editor*  
Joyce R. Hurwitz  
*Associate Editor*  
Anita J. Myers  
*Assistant Editor*  
Rae Hargrave  
*Senior Writer*  
Mathew V. Kuriaköse  
*Graphics/ Production Supervisor*  
Mary V. Connolly  
*Editorial/ Program Coordinator*  
MaryAnn Frusciante  
*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 Vesely-Dickinson  
*Motion Picture Engineer*  
John T. Lolis  
*Test Materials Quality Control Engineer*

## MEMBERSHIP

Josephine LaVecchia  
*Manager, Membership Services*

## ARTICLES

- 904 Development of a Prototype Studio-Quality Component Analog VTR  
*Thomas M. Gurley and Carl J. Haslett*
- 911 The 30mm High-Resolution Diode Gun Leddicon  
*Stewart J. Peppiatt and H.O.W. Jordan*
- 915 On Picture Quality of Some Television Signal Processing Techniques  
*Broder Wendland and Hartmut Schröder*
- 923 Experiments on Proposed Extended-Definition TV with Full NTSC Compatibility  
*Takahiko Fukinuki, Yasuhiro Hirano, and Hiroshi Yoshigi*
- 930 NTSC and MAC Television Signals in Noise and Interference Environments  
*Gérald Chouinard and John N. Barry*
- 943 Acceptability of Picture Tube Colorimetric Reproduction  
*Bjarne Hisdal*
- 948 Sound-Track Application Detector  
*Terry S. Silliman and Ronald E. Uhlig*

## SMPTE REPORTS

- 953 126th SMPTE Technical Conference and Equipment Exhibit  
October 28 — November 2, 1984, New York City
- 976 Hollywood Section Holds Spring Tutorial Seminar

## SMPTE NEWS AND DEPARTMENTS

- |     |                        |      |   |
|-----|------------------------|------|---|
| 902 | Calendar               | 996  | Obituaries                              |
| 903 | Highlights             | 998  | Abstracts of Papers from Other Journals |
| 951 | Membership Application | 1002 | New Products                            |
| 984 | Section Meetings       | 1010 | Professional Services                   |
| 990 | News                   | 1012 | Advertisers Index                       |
| 992 | Addendum and Erratum   | 1012 | Classified                              |

## STANDARDS AND RECOMMENDED PRACTICES

- 1016 Approved American National Standards
- 1018 Approved SMPTE Engineering Guidelines
- 1020 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 © 1984 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 subscribers at a surcharge of \$50.00 to Europe and \$65.00 to Asia (in addition to the subscription rates listed above).