



EXECUTIVE

Frank J. Haney
Editorial Vice-President

Frederick M. Remley
Chairman/Board of Editors

Lynette Robinson
Executive Director

JOURNAL STAFF

Jeffrey Friedman
Editor/Publisher

Joyce R. Hurwitz
Senior Editor

Carol King
Associate Editor/Public Relations

Mathew V. Kuriakose
Graphics/Production Supervisor

MaryAnn Frusciantè
Production Coordinator

Marilyn Waldman
Advertising/Editorial/Program Coordinator

MARKETING/EXHIBITS

Alan Ehrlich
Marketing/Exhibits Manager

ENGINEERING

Sherwin H. Becker
Director of Engineering

Mark S. Hyman
Staff Engineer



SMPTE Journal[®]

VOL. 101, NO. 7

JULY 1992

ARTICLES

The Digital Hierarchy -- A Blueprint for Television in the 21st Century
G. Reitmeier, C. Carlson, E. Geiger, and D. Westerkamp 466

New Registration Error Detecting System for Three-Tube HDTV Cameras
Itaru Mimura, Naoto Tomura, and Nobuo Murata 471

Experimental Digital VCR with New DCT-Based Bit-Rate Reduction and Channel Coding
N. Endoh, S. Kizu, T. Odaka, K. Ogi, K. Shimoda, and M. Tamura 475

Continuously Variable, Remote Color Temperature Adjustments for Metal-Halide Lamps in Cinematographic Applications
A. Ketsdever, W. Omens, and E.P. Muntz 481

Communication Networks for the Remote Control of Television Equipment: Interim Report from the SMPTE Ad Hoc Group on ESnet
Marc S. Walker 488

How Closed Captioning in the U.S. Today Can Become the Advanced Television Captioning System of Tomorrow
Carl Armon, Dan Glisson, and Larry Goldberg 495

SMPTE REPORTS

The Post Experience, March 27-28, 1992, Toronto, Ontario, Canada
Bill Bishop 498

134th SMPTE Technical Conference and Equipment Exhibit, Metro Toronto Convention Centre, Canada, November 10-13, 1992 501

SMPTE NEWS AND DEPARTMENTS

Section Meetings	502	Books, Booklets, Brochures	508
News	505	New Products	508
Obituaries	505	Classified	512
Errata	506	Professional Services	517
Engineering News	507	Information for Authors	518

STANDARDS AND RECOMMENDED PRACTICES

Approved American National Standards 521
ANSI/SMPTE 102-1991, Motion-Picture Film (35-mm) -- Perforated CS-1870; ANSI/SMPTE 168-1991, Motion-Picture Film (16-mm) -- Perforated 8-mm Type S (1-4); and ANSI/SMPTE 171-1991, Motion-Picture Film (35-mm) -- Perforated 16-mm, 3R (1-3-0)

Approved SMPTE Engineering Guidelines 525
EG 16-1992, Measurement Methods for Motion-Picture Camera Acoustical Noise -- Field Method; and EG 17-1992, B-Chain Electroacoustical Response for Preparing Magnetic Masters for Transfer to 16-mm or 35/32-mm Monaural Photographic Film

SMPTE Journal (ISSN: 0036-1682) published monthly by the Society of Motion Picture and Television Engineers, 595 West Hartsdale Avenue, White Plains, NY 10607. Second-class postage paid at White Plains, N.Y., and at additional mailing office. Copyright © 1992 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 \$65.00), Associate (annual dues \$65.00), and Student (annual dues \$25.00). All members receive the *SMPTE Journal*. Subscriptions are available to nonmembers. Annual rates \$75.00 United States; \$75.00 plus \$10.00 postage elsewhere. Single issues, \$6.00 plus \$2.00 postage. *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).

POSTMASTER: Send change of address to *SMPTE Journal*, 595 West Hartsdale Avenue, White Plains, NY 10607-1824.