



1994 INDEX

Volume 103 January - December

Part II to December 1994 SMPTE Journal

842 Table of Contents

845 Subject Index

850 Author Index

853 Index to Current SMPTE-Sponsored American National Standards, and SMPTE Standards, Society Recommended Practices, and Engineering Guidelines

858 Index to American National Standards, SMPTE Recommended Practices and Engineering Guidelines, and International Standards

**Society of Motion Picture and Television Engineers
595 West Hartsdale Ave., White Plains, NY 10607**

TABLE OF CONTENTS

January - December 1994 • Volume 103

JANUARY

| | | |
|---|-----------------------------------|----|
| A Migration Path to a Better Digital Television System (Point of View) | JAE S. LIM | 2 |
| Rendering Techniques for Computer-Aided Design | STUART FELDMAN | 7 |
| Accelerated Life Testing of Metal Particle Tape..... | FRASER MORRISON and JOHN CORCORAN | 13 |
| An Improved Law of Contrast Gradient for High Definition Television..... | A. N. THIELE | 18 |
| Special Report on the 135th SMPTE Technical Conference and Equipment Exhibit, Los Angeles, Oct. 29-Nov. 2, 1993..... | | 26 |
| SMPTE Holds Annual Elections | | 48 |
| 1994 SMPTE Advanced Television and Electronic Imaging Conference, Chicago, Feb. 3-5, 1994 .. | | 51 |

FEBRUARY

| | | |
|---|------------------------------------|-----|
| Video Post-Production with Compressed Images | YOON YUNG LEE and JOHN W. WOODS | 76 |
| Film-to-Video Transfers: Time for a Change (Point of View).. | DAVID RICHARDS and EDMUND DiGIULIO | 85 |
| Results of a New Receiver Overscan Survey | DAVID RICHARDS and EDMUND DiGIULIO | 94 |
| Merging Digital Technology into an Analog World..... | THOMAS R. SPRAGUE | 100 |
| Implementation of a Large Digital Routing System at the CBC Broadcast Center | PETER F. WARTH | 105 |
| Assumptions in Television Colorimetry | LEROY DEMARSH | 110 |
| Color News Film, 1967-1975 | SHELDON NEMEYER | 112 |
| 136th SMPTE Technical Conference and World Media Expo, Los Angeles, Oct. 12-15, 1994..... | | 113 |

MARCH

| | | |
|---|------------------|-----|
| Motion-Picture Theater Sound System Performance: New Studies of the B-Chain..... | | |
| | TOMLINSON HOLMAN | 136 |
| Bit-Serial Digital Signal Jitter Causes, Effects, Remedies, and Measurement..... | MICHAEL ROBIN | 150 |
| Computers in Post-Production: Possibilities and Challenges | GREG ESTES | 157 |
| 1,001 Questions to Ask Before Deciding On a Nonlinear Video Edition System ... | ROBERT R. TURNER | 160 |
| Digital Film Scanning and Recording: The Technology and Practice | GLENN KENNEL | 174 |
| Program Chairman's Address —135th SMPTE Technical Conference and Equipment Exhibit, Los Angeles, Oct. 29–Nov. 2, 1993..... | JONATHAN ERLAND | 182 |

APRIL

| | | |
|--|-------------------|-----|
| 1993 Progress Report — Foreword | STANLEY N. BARON | 209 |
| Engineering Report..... | KENNETH P. DAVIES | 210 |
| Motion Pictures | FRANK J. RICOTTA | 211 |
| Television | PAUL BERGER | 216 |
| Education | JOHN A. CARLSON | 264 |
| Report on 1994 SMPTE Advanced Television and Electronic Imaging Conference, Chicago, Feb. 3-5, 1994 | | 267 |

PART II

| | | |
|-----------------------------------|--|-------|
| SMPTE Directory for Members | | 1-186 |
|-----------------------------------|--|-------|

MAY

| | | |
|--|--|-----|
| Pixels and Halide — A Natural Partnership? (Point of View)..... | DAVID J. BANCROFT | 306 |
| Double Scan Playback — A Novel Technique for Increasing the Error-Handling Capability in Digital VTRs..... | TAKEO EGUCHI and LUKE FREEMAN | 312 |
| A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor..... | J. BLANKEVOORT, H. BLOM, P. BROUWER, P. CENTENB. VD HERIK, R. KOPPE, A. MOELANDS, J. V ROOY, F. STOK, and A. THEUWISSEN | 319 |
| Digital Signal Distribution in a Combined Digital/Analog Environment..... | MICHAEL CONNELL | 330 |
| An Overview of the DTTB Model..... | S. N. BARON | 333 |
| Video Compression Techniques and Multilevel Approaches..... | MARZIO BARBERO and MARIO STROPIANA | 335 |
| 136th SMPTE Technical Conference and World Media Expo, Los Angeles, Oct. 12-15, 1994..... | | 345 |

JUNE

| | | |
|--|--|-----|
| A Comparison Between HD Hyper-HAD CCD Camera and Color Film for Television Program Production..... | L. J. THORPE, F. NAGUMO, and K. ISHIKAWA | 364 |
| Gamma Correction and Tone Reproduction in Scanned Photographic Images.. | RICHARD PATTERSON | 377 |
| A Virtual Studio System for TV Program Production..... | KAZUO FUKUI, MASAKI HAYASHI, and YUKO YAMANOUCHI | 386 |
| MPEG Overview..... | STAN N. BARON and W. ROBIN WILSON | 391 |
| The Service Multiplex..... | GARY TONGE | 395 |
| Encipherment and Conditional Access..... | LOUIS CLAUDE GULLOU and JEAN-LUC GIACHETTI | 398 |
| 136th SMPTE Technical Conference and World Media Expo..... | | 409 |

JULY

| | | |
|---|--|-----|
| A Neural Video Camera Processor..... | ANTHONY E. ZORTEA | 422 |
| Further Investigations into Continuously Variable, Remote Color Temperature Adjustments for Metal Halide Lamps..... | A. KETSDEVER, W. OMENS, and E. P. MUNTZ | 428 |
| Designing and Implementing a Hybrid Composite Digital/Analog Post-Production System..... | EDWARD W. FRATICELLI | 434 |
| A Digital 1.2 Gbit/sec VCR for a Universal Recording Format of HD Image Data..... | W. SCHIFFLER, J. HEITMANN, and H. VAANHOLT | 439 |
| An Experimental Digital 1.2 Gbit/sec VCR for 1125/60 HDTV Signals..... | SHINICHI MAKINO | 444 |
| Planning Factors and Their Influence on System Aspects..... | JORGEN WEBER | 447 |
| Digital Terrestrial Broadcasting — Issues for Successful Implementation..... | M. D. WINDRAM and A. G. MASON | 455 |
| Engineering Committee Report — IEC TC 60, April 9-16, 1994, Bucharest..... | | 461 |
| 136th SMPTE Technical Conference and World Media Expo..... | | 463 |

AUGUST

| | | |
|--|---|-----|
| Special Conference Preview — 136th SMPTE Technical Conference and World Media Expo..... | | 489 |
| Digital Switching of FM Video..... | A. FORCUCCI and M. COOPERMAN | 502 |
| D-5: 1/2-in. Full Bit Rate Component VTR Format..... | K. SUESADA, K. ISHIDA, J. TAKEUCHI, I. OGURA, and P. LIVINGSTON | 507 |
| Studies of the Influence of Display Size and Picture Brightness on the Preferred Viewing Distance for HDTV Programs..... | MAURIZIO ARDITO | 517 |
| Clean-Agent Fire Suppression Alternatives..... | CHRIS R. REIMER and MILTON R. SHEFTER | 523 |
| Receiver Characteristics..... | M. ARTIGALAS and D. WESTERKAMP | 528 |
| Modulation and Channel Coding for ATV Terrestrial Transmission..... | YIYAN WU | 531 |
| Production and Distribution of Entertainment in the NII (Engineering Report).... | KENNETH P. DAVIES | 536 |

SEPTEMBER

| | |
|---|-----|
| 136th SMPTE Conference and World Media Expo, Preview | 563 |
| Integrating Digital Audio into the Serial Digital Video Signal | 574 |
| An HDTV Digital Camera Processor....T. LEACOCK, R. TOPPER, J. HACKE, L. DISHERT, L. WALLER,and A. ZORTEA | 580 |
| Delivery of TV Over Existing Phone Lines.....PETER F. PRUNTY | 586 |
| Error Management in Digital Terrestrial Television Broadcasting | 595 |
| Channel Coding Approaches and Consequences — Single and Dual Carriers | 608 |
|GLENN A. REITMEIER, RICHARD J. KLENSCH, and HUGH E. WHITE | |

OCTOBER

| | |
|--|-----|
| The Evolution of Digital Audio and Video Format Conversions | 644 |
| 3-D for the Nineties — A Wide-Field Stereo IMAX® Camera | 648 |
| ..G. HARRIS, W. SHAW, M. DEAN, M. HENDRIKS, M. OMIDVAR, H. MURRAY, and K. BAKER | 656 |
| An Optical Disc Solution for Digital Video Storage | 662 |
| Multistandard Image Sequence Storage — ISP500.....WOLFGANG JOURDAN and HARALD NATHER | 666 |
| Displays and Colorimetry for Future Television.....LEROY E. DEMARSH | 673 |
| Digital Television System Scalability and Interoperability | 677 |
| Rewriting RP 103: Handling and Care of Magnetic Tape for Television..... | 682 |
|TIM CAVANAGH, ROBERT HERMAN, and MARVIN NOLAN | |
| 1995 SMPTE Advanced Television and Electronic Imaging Conference, February 9-11, 1995, San Francisco, Calif. | 682 |

NOVEMBER

| | |
|---|-----|
| Wavelets and Image Compression | 723 |
| Experiments on Proposed Multiplexing Scheme for Vertical-Temporal and Vertical High Helper Signals in EDTV-IIN. SUZUKI, M. KAGEYAMA, K. ISHIKURA, H. YOSHIGI, and T. FUKINUKI | 728 |
| The Total Surround Sound (TSS) Processor | 734 |
|T. STANOJEVIC, M. CIPRANIC, G. SAKOTA,S. DJURDJEVIC and D. DJURDJEVIC | 741 |
| Concept of a European System for the Transmission of Digitized Television Signals via SatelliteULRICH REIMERS | 748 |
| Visual Investigation of the Head-Tape Interface in an HDTV Digital Baseband VCR..... | 758 |
|T. EBIHARA, J. ITOH, Y. OHTSUBO, and A. TAKAHASHI | 763 |
| The Standards Development Process and the NII: A View from the Trenches (Point of View)..... | 763 |
|STANLEY N. BARON | |
| 1995 SMPTE Advanced Television and Electronic Imaging Conference, February 9-11, 1995 . | 763 |

DECEMBER

| | |
|--|-----|
| The Merging of Computers and Video: Using Ethernet and SCSI for Digital Video Input and OutputSTEPHEN KILISKY | 785 |
| Subjective Testing of Broadcast-Quality Compressed Video.....W. Y. ZOU, K. ELLSWORTH,J. A. KUTZNER, and P. J. HEARTY | 789 |
| Performance Evaluation: From NTSC to Digitally Compressed Video | 795 |
| From Post-Production to the Cinema of the Future | 801 |
| Consideration of Camera SNR from the Viewpoint of Bit-Rate Reduction: A Comparison between Progressive and Interlace Scanning for HDTV.....JUNJI KUMADA | 805 |
| Hierarchical TV Transmission by Spread Spectrum Multiplexing | 811 |
|HIROYUKI HAMAZUMI, YASUHIRO ITO, and HIROSHI MIYAZAWA | |
| New Officers and Governors Elected..... | 817 |
| 1995 SMPTE Advanced Television and Electronic Imaging Conference, February 9-11, 1995 . | 818 |

INDEX TO SUBJECTS — January - December 1994 • Volume 103

BOOKS, BOOKLETS, AND BROCHURES

- ACVL Handbook, 5th Ed., May, 347
Brief items of timely interest, Mar., 186; May, 347
Cinema: The First Hundred Years, *Shipman*, Mar., 186
The Filmmaker's Pocket Reference, *Brown*, Sept., 618
How Did They Do It: Computer Illusions in Film & TV, *Baker*, Sept., 618
McGraw-Hill Dictionary of Scientific and Technical Terms, 5th Ed., Mar., 186
1994 Directory of IC Manufacturers' Data Pages, May, 347
The Visualization Quest: A History of Computer Animation, *Auzenne*, Sept., 618

ERRATA AND ADDENDA

- Double Scan Playback — A Novel Technique for Increasing the Error-Handling Capability in Digital VTRs, *Eguchi and Freeman*, May, 1994; correction, July, 469
Honors and Awards winners figure caption, Jan., 38; correction, Mar., 188
Motion-Picture Theater Sound System Performance: New Studies of the B-Chain, *Holman*, Mar., 136; correction, Sept., 616
Section Meetings, July, 467; correction, Sept., 616
Standards and Recommended Practices, EG 9, Sept., 638; correction, Nov., 781

NEW PRODUCTS

Audio Equipment

- Amplifiers, M9136 and M9136-D, The Grass Valley Group, Nov., 766
Audio adapter, Series2/Model LSX-23-e, Antex Electronics Corp., Sept., 621
Audio mixer, software module, Soundmaster Group, Aug., 548
Audio synchronizer, AD2100 stereo, Pixel Instruments, Nov., 765
Audio systems, AMP-SUR; MSM-2, metering system; AMP-2AM stereo monitor, Wohler Technologies, May, 353
Demultiplexer, ASM-6800 monitoring audio, Leitch Video Intl., Apr., 284
Digital audio D/A, M9422, The Grass Valley Group, Nov., 766
Digital audio distribution amplifier, AarDDA, Aardvark Computer Systems, May, 353
Digital audio mixer, DMX-E2000, Sony Electronics, Mar., 195
Digital audio sync generator, AardSync, Aardvark Computer Systems, Oct., 689

- Fiber-optic audio transmission system, Fibox, Lightwave Systems, June, 415
Multichannel audio processor (MAP), Panasonic Broadcast and Television Systems, Dec., 826

Batteries and Power Supplies

- Hum eliminator, Model HEC-2000-H, Allen Avionics, Dec., 827
Mini-generator, Lightning Charger, ATI Power Products, May, 353

Cameras

- Cameras, AG-DP800 Supercam; WV-E550 3-CCD; AQ-235W studio, Panasonic Broadcast & TV Systems Co., Apr., 283
Cameras, LDK series, BTS Broadcast Television Systems, May, 352
Microminiature camera, IK-M14A, Toshiba America, Mar., 195

Camera Accessories

- Fluid heads, 515S; 1030S, 2575V, O'Connor Engineering Laboratories, Apr., 284
Remote control head, CAMS, Band Pro Film/Video, Apr., 283

Distribution

- AES/EBU distribution amplifiers, 5281 and 5282, Pro-Bel, Oct., 688

Editing Equipment

- The CacheMachine, Odetics Broadcast, Nov., 766
DigiStill system, Ringer Video Services, Oct., 688
Digital edit suites, D/ESAM Series, Graham-Patten Systems, May, 352
Digital video editor, D/Vision-Pro, TouchVision Systems, July, 471
Digital video editor, Hitchcock 1.0, Aldus Corp., July, 471
Editing system, Rio Bravo, BTS Broadcast Television Systems, May, 352
Editing system, Sabre 4100S, Grass Valley Group, May, 352
Hard drive expansion system, The Drive-In, Desktop Video Systems, July, 471

Film

- Film cleaning machine, Excel 700, Research Technology Intl., Mar., 196
Microprocessor-controlled film cleaner, Excel 900, Lipsner-Smith Co., May, 353

Graphics/Effects

- Expanded Indy product line and new Onyx products, Silicon Graphics, Oct., 688
Graphics desktop systems, Video Gallery, BTS Broadcast Television Systems, May, 352

- Image storage, Logo Insertion Still Card, Prime Image, Oct., 688
Indigo² line; Onyx graphics supercomputer, Silicon Graphics, Dec., 826
Logo generator/insertor, LGIL-1302N, Leitch Video Intl., Mar., 196
Serial digital video card, HP E2534A, Hewlett-Packard Co., Sept., 621

Lenses/Optics

- Aspheric wide angle adapter, .6x, Century Precision Optics, June, 415
Director's viewfinder, Mark V, Alan Gordon Enterprises, Dec., 827
TV zoom lens, Ah66X13.5ESM, Fujinon, July, 471; S15X6.1 EVM/ERD, Dec., 827

Lighting and Lamps

- Fresnel lights, Fren-L 650, Lowel-Light Mfg., June, 415
Lighting control system, LBX, Strand Lighting, Aug., 258
Xenon lamp, WC Series, Optical Radiation Corp., June, 415

Monitors

- Broadcast monitor, all-digital AT-H 1905D, Panasonic, Mar., 193
Visual presenter, EV-500AF, Elmo Mfg. Corp., Mar., 193

Production/Post-Production

- Digital video production systems, Krystal 4300, Grass Valley Group, May, 352
Mixing system, fully digital, ix-11000, TOA Electronics, Mar., 193
Production control system, Mini Pro, Otari Corp., June, 415

Projection Equipment

- HDTV LCD projector, Sharp Corp., Mar., 195
Projector, Linear Loop, Pioneer Technology Corp., June, 415

Recording Equipment

- Digital disk recording system, ADDR6400, Abekas Video systems, Apr., 283
Mirror master recorder, R-750, Otari Corp., Dec., 827
Modular disk system, Hexus Production Disk Systems, Abekas Video Systems, Oct., 689
Real-time disk recorder, The Discus, Abekas Video Systems, Oct., 689
Random access storage and retrieval system, Multi-standard Virtual Recorder, ASC Audio Video Corp., May, 353

Signal Processing/Transmission Equipment

- Delay, PN2550A, Matthey Products, Oct., 689
- Digital decoder, Varicomb V4228, Vistek Electronics Ltd., June, 415
- Enhancer and decoder, Y/C Max, Nova Systems, Aug., 548
- HDTV telecine, BTS Broadcast Television Systems, FLH, May, 352
- Noise reducer, NovaMNR, Nova Systems, Aug., 548
- Peak hold metering option, PKH-1, Wohler Technologies, July, 471
- Signal distribution system, MSR-604 II, BSS Audio, July, 471
- Signal generator, Model 3222, Leader Instruments Corp., Dec., 826
- Signal level meter, RFM150 SignalScout, Tektronix, July, 471
- Signal routing system, analog and digital, Post Perfect, Oct., 688
- Still store, DSF-3121 StillFile, Leitch Video Intl., Apr., 284
- Synchronizer, Novelset, Clark & Associates, Nov., 765
- Synchronizers, serial digital frame synchronizer, 3501FS; line synchronizer, 3501LS, Leitch Video Intl., Apr., 284
- Video integration memory, 446Y/C, Colorado Video, Dec., 826
- Video synchronizer, 10-bit, Pixel Instruments, Sept., 621

Software

- Animation software, Visualizer Version 4.1, Wavefront Technologies, July, 471
- Digital modulation software, IQSIM, Tektronix, Apr., 284
- Standalone software driver, Q-bit, Version 2.0, Management Graphics, June, 415
- VidJet Pro Utilities for Windows, Hewlett-Packard Co., Nov., 766

Sound Systems

- Stereo/dual sound processors, TDA9840; TDA9845; TDA 9847, Philips Semiconductors, May, 353

Switching

- Component digital production switcher, Model 1200, The Grass Valley Group, May, 352
- Digital effects-switcher system, Model 2200, The Grass Valley Group, Nov., 766
- Digital production switcher, ASWR8100, Abekas Video Systems, Oct., 689
- Master control switcher, Saturn Master, BTS Broadcast Television Systems, May, 352

Tests and Measurements

- Combination waveform monitor, oscilloscope, and vectorscope, 1100 Series, CompuVideo, Nov., 765

- Demodulator, TV 1350, Tektronix, Oct., 688
- Digital oscilloscope, HP 54603B, Hewlett-Packard Co., Oct., 688; logic analyzer, HP 1664A, Hewlett-Packard, Dec., 827
- Metering module, LVDIG-1, Wohler Technologies, Nov., 765
- Oscilloscope, 3-channel, Model 8063, Leader Instruments Corp., Dec., 826
- Oscilloscope probe, P5100, Tektronix, Oct., 688
- RF Counter, Hewlett-Packard Co., June, 415
- Test pattern generator, TPG20, Tektronix, Mar., 195
- Test systems, HP 9490B Series, Hewlett-Packard Co., June, 415
- Timecode monitor, Summertone, Ltds., Nov., 765
- Vector signal analyzer, Hewlett-Packard Co., Apr., 184
- Waveform/vector rasterizer, WVR500, Tektronix, Mar., 196
- Waveform/vector/picture/audio monitor, WFM91, Tektronix, Nov., 765

Tripods, Mounts, Heads

- Camera mount, Pro-Jib, Miller Fluid Heads, Aug., 548
- Lightweight tripods and universal dolly, H. Wilson Co., Oct., 688
- Linear Axis Arm, Innovision Optics, Sept., 621
- Motion control system, The Lift, Innovision Optics, Oct., 688
- Portable jib, Dual Porta-Jib, Birns & Sawyer, July, 471
- Universal camera mount, Whitehouse Audio Visual, Oct., 689

Videodisc Recording

- Digital videodisk recorders, 4000 Series and 5000 Series, Recognition Concepts, July, 471
- High-definition videodisc recorder, 8011M, Recognition Concepts, Nov., 765

Videotape Recording and Playback Equipment

- Dual Channel CacheMachine; Master control system, MicroCart 100; spot delivery systems, DigiSpot, Odetics Broadcast, Dec., 826
- HDTV universal cassette recorder, DCR 6000, BTS Broadcast Television Systems, May, 352
- Multimedia Video Super Server and Video Compression Station, SMP M2V, The Network Connection, Oct., 688
- Tape drive, DCT 1700d, Ampex Systems Corp., May, 353
- Thermal magnetic duplicator, T-700 MKII, Otari Corp., Oct., 688
- VTR controller ST200 Universal, DNF Industries, Oct., 688

NEWS

Awards and Honors

- Allen, Robert, elected a fellow of the BKSTS, Apr., 281
- Baker, Blaine, elected a fellow of the BKSTS, Jan., 55
- Baron, Stanley N., winner of City of New York Mayor's Award for Excellence in Science and Technology, Jan., 55
- Davies, Kenneth, awarded Honorary Fellowship, BKSTS, Apr., 281
- Derry, Charles, and Boyd, Daniel, awarded teacher awards by MTV, Dec., 823
- Edgerton, Dr. Harold E., honored with a retrospective exhibition of his work and working process, Oct., 685
- Johnsrud, David, awarded Technical Achievement Award by AMPAS, Apr., 281
- Krivocheev, Mark, awarded Honorary Fellowship, BKSTS, Apr., 281
- Meadows, Jeff, elected a fellow of the BKSTS, Apr., 281
- O'Brien, Richard, received Charles F. Jenkins Lifetime Technical Achievement Award from ATAS, Jan., 55
- Smith, William H., recipient of Lifetime Achievement Award, U.S. International Film and Video Festival, June, 410
- Vlahos, Petro, awarded Gordon E. Sawyer Award by AMPAS, Apr., 281
- Vranken, Marcel, elected a fellow of the BKSTS, Apr., 281
- Zavada, Roland, award created by CGATS in his honor, Aug., 542

Companies

- Dynatech Video Group announces reorganization of operations, July, 469
- Hollywood Film Co. changes ownership, Dec., 823
- KAS Lighting, Inc., exclusive contract with Kaufman Astoria Studios, July, 469

Education

- Florida St. Univ. receives film collection, Dec., 823
- Hollywood Film Institute presents Two-Day Film School, Oct., 685
- Tentel Corp., announces BT Series of Betacam training programs, Oct., 685
- UCLA Extension offers five computer science short courses, June, 410; presents 48th Engineering and Management Program, July, 469
- Univ. of Washington's College of Engineering offers continuing-education course, July, 469

Meetings and Conferences

- Photokina — World Fair Imaging, Sound, and Professional Media, new feature, Sept., 617
- Post/LA, announcement, Dec., 823

Other Organizations

ANSI forms new standards panel (IISP), Aug., 542

People

Allen, Robert M., appointed vice-president of production operations at Disney-MGM Studios, June, 411
Anderson, George F. III, joined Odetics as regional sales manager, Nov., 764
Baptista, John L., named senior vice-president at Consolidated Film Industries, Jan., 55
Becker, Stanley D., joined Louth Automation as director of engineering, May, 347
Castles, Daniel, appointed president of Grass Valley Group, Inc., June, 411
Cheek, Doug, appointed president of General Television Network Industries, Mar., 185
Crabtree, Tim, named general manager of Odetics broadcasting div., July, 469
Ellington, Jesse T., retires chairmanship of executive board at Consolidated Film Industries, June, 411
Gray, Mark C., appointed president and chief operating officer of Chyron Corp., May, 347
Hobson, Edward II, joined Graham-Patten Systems as vice-president of marketing and sales, May, 347
Ibbotson, Jeff, appointed project manager for Sony of Canada, Nov., 764
Johnson, Russell K., promoted to vice-president of sales-Americas for The Grass Valley Group, Oct., 685
Klecker, John, joined Harris Allied as television district sales manager, Mar., 185
Lee, D. Wayne, founded Lee Sound Design, Inc., Mar., 185
Nulman, Barry, named president of The Post Group, Nov., 764
Polan, Robert M., joined Louth Automation as regional sales manager, May, 347
Seidel, Robert P., appointed vice-president of engineering at CBS, July, 469
Spangler, Larry, appointed director, technical operations, Laser-Pacific Media Corp., July, 469

OBITUARIES

Arvonio, John, Sept., 620
Benedetti, Anthony J., Apr., 281
Cavanagh, Paul C., Sept., 620
Chamberlain, Stephen C., Apr., 281
Clews, George E., Apr., 281
Cushman, William A., Nov., 764
Daily, Charles R., Sept., 620
Davee, Lawrence W., Mar., 188
Fordyce, Charles R., Nov., 764
Forrest, John L., Sept., 620
Friend, Byron L., June, 411

Garrigan, Dan., Mar., 188
Hankins, Max A., Nov., 764
Keith, Clyde R., Apr., 281
Keller, John S., Sept., 620
Lachapelle, Jacques, Dec., 823
Lozier, W. Wallace, Mar., 188
McCown, W. Russell, Apr., 281
Mian, Attilio, Nov., 764
Mitchell, George J., June, 411
Pearlman, Lenard E., Mar., 188
Rodgers, Richard W., June, 411
Wall, Kenneth W., Sept., 620
Wick, Oscar, Apr., 281
Wicker, L. Phil, Sept., 620

REPORTS

Australia North Section, 6th International Conference, report, Dec., 823
International Electrotechnical Committee, report, *Remley*, July, 461
Monitoring and Diagnostics in Digital Television Systems, *Miller*, Sept., 614
New York Section, All-Day Tutorial, report, June, 410
Production and Distribution of Entertainment in the NII, report, *Davies*, Aug., 536
Rewriting RP103: Handling and Care of Magnetic Tape for Television, (Engineering Committee Tutorial), *Cavanagh, Herman, and Nolan*, Oct., 677

SECTION MEETINGS

Atlanta, Feb., 114; Apr., 277; May, 346
Chicago, Feb., 114; Mar., 186; Oct., 683
Dallas/Fort Worth, Sept., 616
Detroit, Feb., 114; Apr., 277; June, 412; Oct., 683; Dec., 825
Hollywood, Apr., 277; June, 412
Houston, Feb., 114; Apr., 277; May, 346; Sept., 616; Oct., 683
Montreal/Quebec, Feb., 114; Apr., 278; May, 346; July, 466; Aug., 543
Napa Valley College, Dec., 825
Nashville, Feb., 114; Apr., 278; June, 412; Aug., 543
New England, Feb., 117; Apr., 278; Oct., 683
New York, Feb., 117; Mar., 186; Apr., 279; July, 466
Nordic, Feb., 117; Mar., 186
Pasadena City College, Feb., 117; June, 412; Sept., 616; Dec., 825
Philadelphia, May, 346
Rochester, Feb., 118; Apr., 279; June, 412; July, 467; Oct., 684
Russia, July, 467; Oct., 684
Sacramento, Feb., 118; June, 412; July, 467; Sept., 616
San Francisco, Feb., 118; July, 467; Aug., 543; Nov., 763; Dec., 825
Toronto, Feb., 118; Nov., 763
Washington, D.C., Feb., 118

SMPTE ACTIVITIES

Constitution and Bylaws

Amendments, notice, Aug., 540; approval, Oct., 764

Engineering Committees/Working Groups

Engineering Committees, meeting schedule, Jan., 54; Feb., 119; Mar., 187; Apr., 282; May, 348; June, 414; July, 468; Aug., 544; Sept., 619; Oct., 687; Nov., 762; Dec., 824
International Electrotechnical Committee, report, *Remley*, July, 461
Monitoring and Diagnostics in Digital Television Systems, *Miller*, Sept., 614
Production and Distribution of Entertainment in the NII, report, *Davies*, Aug., 536
Rewriting RP103: Handling and Care of Magnetic Tape for Television, (Engineering Committee Tutorial), *Cavanagh, Herman, and Nolan*, Oct., 677
SMPTE Engineering Electronic Communications (SEEC) system opened on CompuServe, Jan., 54; Feb., 119; Mar., 187; Apr., 282; May, 348; June, 414; July, 468; Aug., 544; Sept., 619; Nov., 762; Dec., 824
Study Group formed, SMPTE Documentation of Television Recording Formats, Apr., 282
Working Group on Digital Control (P18.10) develops new network standards, Oct., 687

Financial

1992 Financial Reports, Dec., 820

General

Additions to headquarters staff:
Urbanowicz and Moroney, June, 410;
Izzo, Dec., 823
Life insurance plan credit announced, Mar., 185

Meetings and Conferences

1994 Annual Advanced Television and Electronic Imaging Conference, Preview, Jan., 51; report, Apr., 267
All-Day Tutorial, preview, Jan., 51; report, Apr., 268
1995 Annual Advanced Television and Electronic Imaging Conference; committee chairman named, May, 347; announcement, Oct., 682; Nov., 763; preview, Dec., 818
135th Technical Conference and Equipment Exhibit, report, Jan., 26
All-Day Tutorials, Jan., 26
136th Technical Conference, call for papers, Mar., 185; May, 345; June, 409; July, 463; special preview, Aug., 489; preview, Sept., 563
All-Day Tutorials, June, 409

Australia North Section, 6th International Conference, announcement, Mar., 185; report, Dec., 823
German Section, 1994 European SMPTE Conference, call for papers, Mar., 185
New York Section, All-Day Tutorial, Jan., 55; report, June, 410
Special meeting of voting members of SMPTE, notice, Aug., 540; minutes, Oct., 764
Toronto Section to Host "The TV Experience," Dec., 825
Washington, D.C. Section All-Day Meeting, announcement, June, 410

Membership

New membership promotion, Jan., 55; Feb., 122; Mar., 184
New Sustaining Members, May, 347; Sept., 617

Sections and Chapters

Sections Officers and Managers as of July 1, 1994, Aug., 538

Officers and Governors

Annual Elections, Dec., 817

Progress Report

1993 Progress Report
Foreword, *Baron*, Apr., 209
Engineering Report, *Davies*, Apr., 210
Motion Pictures, *Ricotta*, Apr., 211
Television, *Berger*, Apr., 216
International Overviews, Apr., 234
Education, *Carlson*, Apr., 264
1994 Progress Report, announcement, Sept., 617

Publications

Directory for Members, Apr., Part II
Index, annual, Dec., Part II

Standardization

See SMPTE ACTIVITIES, Engineering Committees.

TECHNICAL PAPERS

Audio

The Evolution of Digital Audio and Video Format Conversions, *Reynolds*, Oct., 642
Integrating Digital Audio into the Serial Digital Video Signal, *Fibush*, Sept., 574
Motion-Picture Theater Sound System Performance: New Studies of the B-Chain, *Holman*, Mar., 136

Cameras and Accessories

A Comparison Between HD Hyper-HAD CCD Camera and Color Film for Television Program Production, *Thorpe, Nagumo, and Ishikawa*, June, 364
An HDTV Digital Camera Processor, *Leacock, Topper, Hacke, Dischert, Waller, and Zortea*, Sept., 580
A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, *Blankevoort, Blom, Brouwer, Centen, vd Herik, Koppe, Moelands, v Rooy, Stok, and Theuwissen*, May, 319
A Neural Video Camera Processor, *Zortea*, July, 422
3-D for the Nineties — A Wide-Field Stereo IMAX® Camera, *Harris, Shaw, Dean, Hendriks, Omidvar, Murray, and Baker*, Oct., 647

Colorimetry

Assumptions in Television Colorimetry, tutorial, *DeMarsh*, Feb., 110

Combined Technologies

Delivery of TV Over Existing Phone Lines, *Prunty*, Sept., 586
Designing and Implementing a Hybrid Composite Digital/Analog Post-Production System, *Fraticelli*, July, 434
Film-to-Video Transfers: Time for a Change (Point of View), *Richards and DiGiulio*, Feb., 85
Merging Digital Technology into an Analog World, *Sprague*, Feb., 100
The Merging of Computers and Video: Using Ethernet and SCSI for Digital Video Input and Output, *Kilisky*, tutorial, Dec., 785
Pixels and Halide A Natural Partnership (Point of View), *Bancroft*, May, 306
Results of a New Receiver Overscan Survey, *Richards and DiGiulio*, Feb., 94

Compression

Video Compression Techniques and Multilevel Approaches, tutorial, *Barbero and Stroppiana*, May, 335
Video Post-Production with Compressed Images, *Lee and Woods*, Feb., 76

Digital Imaging

Digital Film Scanning and Recording: The Technology and Practice, *Kennel*, Mar., 174
Gamma Correction and Tone Reproduction in Scanned Photographic Images, *Patterson*, June, 377
Multistandard Image Sequence Storage — ISP500, *Jourdan and Nather*, Oct., 662

An Optical Disc Solution for Digital Video Storage, *Wilkinson*, Oct., 656
A Virtual Studio System for TV Program Production, *Fukui, Hayashi, and Yamanouchi*, June, 386

Digital Technology

Bit-Serial Digital Signal Jitter Causes, Effects, Remedies, and Measurement, *Robin*, Mar., 150
D-5: 1/2-in. Full Bit Rate Component VTR Format, *Suesada, Ishida, Takeuchi, Ogura, and Livingston*, Aug., 507
Digital Film Scanning and Recording: The Technology and Practice, *Kennel*, Mar., 174
Digital Switching of FM Video, *Forcucci and Cooperman*, Aug., 502
The Evolution of Digital Audio and Video Format Conversions, *Reynolds*, Oct., 642
An HDTV Digital Camera Processor, *Leacock, Topper, Hacke, Dischert, Waller, and Zortea*, Sept., 580
Implementation of a Large Digital Routing System at the CBC Broadcast Centre, *Warth*, Feb., 105
Integrating Digital Audio into the Serial Digital Video Signal, *Fibush*, Sept., 574
Merging Digital Technology into an Analog World, *Sprague*, Feb., 100
A Migration Path to a Better Digital Television System (Point of View), *Lim*, Jan., 2

DTTB/Tutorials

Assumptions in Television Colorimetry, *DeMarsh*, Feb., 110
Channel Coding Approaches and Consequences — Single and Dual Carriers, *Reitmeier, Klensch, and White*, Sept., 608
Digital Television System Scalability and Interoperability, *Baron*, Oct., 673
Digital Film Scanning and Recording: The Technology and Practice, *Kennel*, Mar., 174
Digital Terrestrial Broadcasting — Issues for Successful Implementation, *Windram and Mason*, July, 455
Displays and Colorimetry for Future Television, *DeMarsh*, Oct., 666
Encipherment and Conditional Access, *Guillou and Giachetti*, June, 398
Error Management in Digital Terrestrial Television Broadcasting, *Ninomiya*, Sept., 595
Modulation and Channel Coding for ATV Terrestrial Transmission, *Wu*, Aug., 531
MPEG Overview, *Baron and Wilson*, June, 391
1,001 Questions to Ask Before Deciding On a Nonlinear Video Editing System, *Turner*, Mar., 160
An Overview of the DTTB Model, *Baron*, May, 333
Receiver Characteristics, *Artigalas and Westerkamp*, Aug., 528

Planning Factors and Their Influence on System Aspects, *Weber*, July, 447
The Service Multiplex, *Tonge*, June, 395
Video Compression Techniques and Multilevel Approaches, *Barbero* and *Stroppiana*, May, 335

Graphics and Special Effects

Rendering Techniques for Computer-Aided Design, *Feldman*, Jan., 7

High and Extended-Definition TV

Consideration of Camera SNR from the Viewpoint of Bit-Rate Reduction: A Comparison between Progressive and Interlace Scanning for HDTV, *Kumada*, Dec., 805
A Digital 1.2 Gbit/sec VCR for a Universal Recording Format of HD Image Data, *Schiffler*, *Heitmann*, and *Vaanholt*, July, 439
An Experimental Digital 1.2 Gbit/sec VCR for 1125/60 HDTV Signals, *Makino*, July, 444
From Post-Production to the Cinema of the Future, *Mizer*, Dec., 801
An HDTV Digital Camera Processor, *Leacock*, *Topper*, *Hacke*, *Dischert*, *Waller*, and *Zortea*, Sept., 580
An Improved Law of Contrast Gradient for High-Definition Television, *Thiele*, Jan., 18
A Migration Path to a Better Digital Television System (Point of View), *Lim*, Jan., 2
Studies of the Influence of Display Size and Picture Brightness on the Preferred Viewing Distance for HDTV Programs, *Ardito*, Aug., 517

History

Color News Film, 1965-1975, *Nemeyer*, Feb., 112

Lighting and Lamps

Further Investigations into Continuously Variable, Remote Color Temperature Adjustments for Metal Halide Lamps, *Ketsdever*, *Omens*, and *Muntz*, July, 428

Motion-Picture Laboratory

Clean-Agent Fire Suppression Alternatives, *Reimer* and *Shefter*, Aug., 523

PC Applications

Computers in Post-Production: Possibilities and Challenges, *Estes*, Mar., 157

Production/Post-Production

A Comparison Between HD Hyper-HAD CCD Camera and Color Film for Television Program Production, *Thorpe*, *Nagumo*, and *Ishikawa*, June, 364
Computers in Post-Production: Possibilities and Challenges, *Estes*, Mar., 157
Designing and Implementing a Hybrid Composite Digital/Analog Post-Production System, *Fratlicelli*, July, 434
Video Post-Production with Compressed Images, *Lee* and *Woods*, Feb., 76

Signal Processing/Transmission

Bit-Serial Digital Signal Jitter Causes, Effects, Remedies, and Measurement, *Robin*, Mar., 150
Consideration of Camera SNR from the Viewpoint of Bit-Rate Reduction: A Comparison between Progressive and Interlace Scanning for HDTV, *Kumada*, Dec., 805
Digital Signal Distribution in a Combined Digital/Analog Environment, *Connell*, May, 330
Digital Switching of FM Video, *Forcucci* and *Cooperman*, Aug., 502
From Post-Production to the Cinema of the Future, *Mizer*, Dec., 801
Hierarchical TV Transmission by Spread Spectrum Multiplexing, *Hamazumi*, *Ito*, and *Miyazawa*, Dec., 811
Implementation of a Large Digital Routing System at the CBC Broadcast Centre, *Warth*, Feb., 105
An Improved Law of Contrast Gradient for High Definition Television, *Thiele*, Jan., 18
Integrating Digital Audio into the Serial Digital Video Signal, *Fibush*, Sept., 574
A Neural Video Camera Processor, *Zortea*, July, 422

Testing and Measurements

Motion-Picture Theater Sound System Performance: New Studies of the B-Chain, *Holman*, Mar., 136
Performance Evaluation: From NTSC to Digitally Compressed Video, *Zou*, Dec., 795
Results of a New Receiver Overscan Survey, *Richards* and *DiGiulio*, Feb., 94
Subjective Testing of Broadcast-Quality Compressed Video, *Zou*, *Ellsworth*, *Kutzner*, and *Hearty*, Dec., 789

Tutorials

See DTTB/Tutorials.
The Merging of Computers and Video: Using Ethernet and SCSI for Digital Video Input and Output, *Kilisky*, tutorial, Dec., 785
Rewriting RP103: Handling and Care of Magnetic Tape for Television, (Engineering Committee Tutorial), *Cavanagh*, *Herman*, and *Nolan*, Oct., 677

Video Recording and Equipment

Accelerated Life Testing of Metal Particle Tape, *Morrison* and *Corcoran*, Jan., 13
Digital Film Scanning and Recording: The Technology and Practice, (Tutorial), *Kennel*, Mar., 174
A Digital 1.2 Gbit/sec VCR for a Universal Recording Format of HD Image Data, *Schiffler*, *Heitmann*, and *Vaanholt*, July, 439
Double Scan Playback — A Novel Technique for Increasing the Error-Handling Capability in Digital VTRs, *Eguchi* and *Freeman*, May, 312
The Evolution of Digital Audio and Video Format Conversions, *Reynolds*, Oct., 642
An Experimental Digital 1.2 Gbit/sec VCR for 1125/60 HDTV Signals, *Makino*, July, 444
Merging Digital Technology into an Analog World, *Sprague*, Feb., 100

A

Ardito, Maurizio, Studies of the Influence of Display Size and Picture Brightness on the Preferred Viewing Distance for HDTV Programs, Aug., 517
Artigalas, M., and Westerkamp, D., Receiver Characteristics, tutorial, Aug., 528

B

Baker, K., et al., 3-D for the Nineties — A Wide-Field Stereo IMAX® Camera, Oct., 648
Bancroft, David J., Pixels and Halide — A Natural Partnership? (Point of View), May, 306
Barbero, Marzio, and Stroppiana, Mario, Video Compression Techniques and Multilevel Approaches, tutorial, May, 335
Baron, S. N., An Overview of the DTTB Model, tutorial, May, 333
 —, and **Wilson, W. Robin**, MPEG Overview, tutorial, June, 391
 —, 1993 Progress Report — Foreword, Apr., 209
 —, Digital Television System Scalability and Interoperability, tutorial, Oct., 673
 —, The Standards Development Process and the NII: A View from the Trenches (Point of View), Nov., 758
Berger, Paul, 1993 Progress Report — Television, Apr., 216
Blankevoort, J., et al., A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, May, 319
Blom, H., et al., A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, May, 319
Brouwer, P., et al., A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, May, 319

C

Carlson, John A., 1993 Progress Report — Education, Apr., 264
Cavanagh, Tim, Herman, Robert, and Nolan, Marvin, Rewriting RP 103: Handling and Care of Magnetic Tape for Television (Engineering Committee Tutorial), Oct., 677
Centen, P., et al., A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, May, 319
Cipranic, M., et al., The Total Surround Sound (TSS) Processor, Nov., 734

Connell, Michael, Digital Signal Distribution in a Combined Digital/Analog Environment, May, 330
Cooperman M., and Forcucci, A., Digital Switching of FM Video, Aug., 502
Corcoran, John, and Morrison, Fraser, Accelerated Life Testing of Metal Particle Tape, Jan., 13

D

Davies, Kenneth P., 1993 Progress Report — Engineering Report, Apr., 210
Dean, M., et al., 3-D for the Nineties — A Wide-Field Stereo IMAX® Camera, Oct., 648
DeMarsh, LeRoy E., Displays and Colorimetry for Future Television, tutorial, Oct., 666
 —, Assumptions in Television Colorimetry, tutorial, Feb., 110
DiGiulio, Edmund, and Richards, David, Film-to-Video Transfers: Time for a Change (Point of View), Feb., 85
 —, Results of a New Receiver Overscan Survey, Feb., 94
Dischert, L., et al., An HDTV Digital Camera Processor, Sept., 580
Djurdjevic, D., et al., The Total Surround Sound (TSS) Processor, Nov., 734
Djurdjevic, S., et al., The Total Surround Sound (TSS) Processor, Nov., 734

E

Ebihara, T., et al., Visual Investigation of the Head-Tape Interface in an HDTV Digital Baseband VCR, Nov., 748
Eguchi, Takeo, and Freeman, Luke, Double Scan Playback — A Novel Technique for Increasing the Error-Handling Capability in Digital VTRs, May, 312
Ellsworth, S., et al., Subjective Testing of Broadcast-Quality Compressed Video., Dec., 789
Estes, Greg, Computers in Post-Production: Possibilities and Challenges, Mar., 157

F

Feldman, Stuart, Rendering Techniques for Computer-Aided Design, Jan., 7
Fibush, David K., Integrating Digital Audio into the Serial Digital Video Signal, Sept., 574
Forcucci, A., and Cooperman, M., Digital Switching of FM Video, Aug., 502
Fratlicelli, Edward W., Designing and Implementing a Hybrid Composite Digital/Analog Post-Production System, July, 434

Freeman, Luke, and Eguchi, Takeo, Double Scan Playback — A Novel Technique for Increasing the Error-Handling Capability in Digital VTRs, May, 312
Fukinuki, T., et al., Experiments on Proposed Multiplexing Scheme for Vertical-Temporal and Vertical High Helper Signals in EDTV-II, Nov., 728
Fukui, Kazuo, Hayashi, Masaki, and Yamanouchi, Yuko, A Virtual Studio System for TV Program Production, June, 386

G

Giachetti, Jean-Luc, and Guillou, Louis Claude, Encipherment and Conditional Access, tutorial, June, 398
Guillou, Louis Claude, and Giachetti, Jean-Luc, Encipherment and Conditional Access, tutorial, June, 398

H

Hacke, J., et al., An HDTV Digital Camera Processor, Sept., 580
Hamazumi, Hiroyuki, Ito, Yasuhiro, and Miyazawa, Hiroshi, Hierarchical TV Transmission by Spread Spectrum Multiplexing, Dec., 801
Harris, G., et al., 3-D for the Nineties — A Wide-Field Stereo IMAX® Camera, Oct., 648
Hayashi, Masaki, Fukui, Kazuo, and Yamanouchi, Yuko, A Virtual Studio System for TV Program Production, June, 386
Hearty, P. J., et al., Subjective Testing of Broadcast-Quality Compressed Video, Dec., 789
Heitmann, J., Schiffler, W., and Vaanholt, H., A Digital 1.2 Gbit/sec VCR for a Universal Recording Format of HD Image Data, July, 439
Hendriks M., et al., 3-D for the Nineties — A Wide-Field Stereo IMAX® Camera, Oct., 648
vd Herik, B., et al., A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, May, 319
Herman, Robert, Cavanagh, Tim, and Nolan, Marvin, Rewriting RP 103: Handling and Care of Magnetic Tape for Television (Engineering Committee Tutorial), Oct., 677
Holman, Tomlinson, Motion-Picture Theater Sound System Performance: New Studies of the B-Chain, Mar., 136
Huffman, John C., Wavelets and Image Compression, tutorial, Nov., 723

I

- Ishida, K., et al.**, D-5: 1/2-in. Full Bit Rate Component VTR Format, Aug., 507
- Ishikawa, K., Thorpe, L. J., and Nagumo, F.**, A Comparison Between HD Hyper-HAD CCD Camera and Color Film for Television Program Production, June, 364
- Ishikura, K., et al.**, Experiments on Proposed Multiplexing Scheme for Vertical-Temporal and Vertical High Helper Signals in EDTV-II, Nov., 728
- Ito, Yasuhiro, Hamazumi, Hiroyuki, and Miyazawa, Hiroshi**, Hierarchical TV Transmission by Spread Spectrum Multiplexing, Dec., 811
- Itoh, J., et al.**, Visual Investigation of the Head-Tape Interface in an HDTV Digital Baseband VCR, Nov., 748

J

- Jourdan, Wolfgang, and Nather, Harald**, Multistandard Image Sequence Storage — ISP500, Oct., 662

K

- Kageyama, M., et al.**, Experiments on Proposed Multiplexing Scheme for Vertical-Temporal and Vertical High Helper Signals in EDTV-II, Nov., 728
- Kennel, Glenn**, Digital Film Scanning and Recording: The Technology and Practice, tutorial, Mar., 174
- Ketsdever, A., Omens, W., and Muntz, E.**, Further Investigations into Continuously Variable, Remote Color Temperature Adjustments for Metal Halide Lamps, July, 428
- Kilisky, Stephen**, The Merging of Computers and Video: Using Ethernet and SCSI for Digital Video Input and Output, tutorial, Dec., 785
- Klensch, Richard J., Reitmeier, Glenn A., and White, Hugh E.**, Channel Coding Approaches and Consequences — Single and Dual Carriers, tutorial, Sept., 608
- Koppe, R., et al.**, A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, May, 319
- Kumada, Junji**, Consideration of Camera SNR from the Viewpoint of Bit-Rate Reduction: A Comparison between Progressive and Interlace Scanning for HDTV, Dec., 805
- Kutzner, J. A., et al.**, Subjective Testing of Broadcast-Quality Compressed Video, Dec., 789

L

- Leacock, T., et al.**, An HDTV Digital Camera Processor, Sept., 580
- Lee, Yoon Yung, and Woods, John**, Video Post-Production with Compressed Images, Feb., 76

- Lim, Jae S.**, A Migration Path to a Better Digital Television System (Point of View), Jan., 2
- Livingston, P., et al.**, D-5: 1/2-in. Full Bit Rate Component VTR Format, Aug., 507

M

- Makino, Shinichi**, An Experimental Digital 1.2 Gbit/sec VCR for 1125/60 HDTV Signals, July, 444
- Mason, A. G., and Windram M. D.**, Digital Terrestrial Broadcasting — Issues for Successful Implementation, tutorial, July, 455
- Miyazawa, Hiroshi, Ito, Yasuhiro, and Hamazumi, Hiroyuki**, Hierarchical TV Transmission by Spread Spectrum Multiplexing, Dec., 811
- Mizer, Richard G.**, From Post-Production to the Cinema of the Future, Dec., 801
- Moelands, A., et al.**, A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, May, 319
- Morrison, Fraser, and Corcoran, John**, Accelerated Life Testing of Metal Particle Tape, Jan., 2
- Muntz, E., Ketsdever, A., and Omens, W.**, Further Investigations into Continuously Variable, Remote Color Temperature Adjustments for Metal Halide Lamps, July, 428
- Murray, H., et al.**, 3-D for the Nineties — A Wide-Field Stereo IMAX® Camera, Oct., 648

N

- Nagumo, F., Thorpe, L. J., and Ishikawa, K.**, A Comparison Between HD Hyper-HAD CCD Camera and Color Film for Television Program Production, June, 364
- Nather, Harald, and Jourdan, Wolfgang**, Multistandard Image Sequence Storage — ISP500, Oct., 662
- Nemeyer, Sheldon**, Color News Film, 1965-1975, Feb., 112
- Ninomiya, Yuichi**, Error Management in Digital Terrestrial Television Broadcasting, tutorial, Sept., 595
- Nolan, Marvin, Herman, Robert, and Cavanagh, Tim**, Rewriting RP 103: Handling and Care of Magnetic Tape for Television (Engineering Committee Tutorial), Oct., 677

O

- Ogura, I., et al.**, D-5: 1/2-in. Full Bit Rate Component VTR Format, Aug., 507
- Ohtsubo, Y., et al.**, Visual Investigation of the Head-Tape Interface in an HDTV Digital Baseband VCR, Nov., 748

- Omens, W., Ketsdever, A., and Muntz, E.**, Further Investigations into Continuously Variable, Remote Color Temperature Adjustments for Metal Halide Lamps, July, 428
- Omidvar, M., et al.**, 3-D for the Nineties — A Wide-Field Stereo IMAX® Camera, Oct., 648

P

- Patterson, Richard**, Gamma Correction and Tone Reproduction in Scanned Photographic Images, June, 377
- Prunty, Peter F.**, Delivery of TV Over Existing Phone Lines, Sept., 586

R

- Reimer, Chris R., and Shefter, Milton R.**, Clean-Agent Fire Suppression Alternatives, Aug., 523
- Reimers, Ulrich**, Concept of a European System for the Transmission of Digitized Television Signals via Satellite, Nov., 741
- Reitmeier, Glenn A., Klensch, Richard J., and White, Hugh E.**, Channel Coding Approaches and Consequences — Single and Dual Carriers, tutorial, Sept., 608
- Reynolds, Keith Y.**, The Evolution of Digital Audio and Video Format Conversions, Oct., 644
- Richards, David, and DiGiulio, Edmund**, Film-to-Video Transfers: Time for a Change (Point of View), Feb., 85
- Richards, David, and DiGiulio, Edmund**, Results of a New Receiver Overscan Survey, Feb., 94
- Ricotta, Frank J.**, 1993 Progress Report — Motion Pictures, Apr., 211
- Robin, Michael**, Bit-Serial Digital Signal Jitter Causes, Effects, Remedies, and Measurement, Mar., 150
- v. Rooy, J., et al.**, A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, May, 319

S

- Sakota, G., et al.**, The Total Surround Sound (TSS) Processor, Nov., 734
- Schiffler, W., Heitmann, J., and Vaanholt, H.**, A Digital 1.2 Gbit/sec VCR for a Universal Recording Format of HD Image Data, July, 439
- Shaw, W., et al.**, 3-D for the Nineties — A Wide-Field Stereo IMAX® Camera, Oct., 648
- Shefter, Milton R., and Reimer, Chris R.**, Clean-Agent Fire Suppression Alternatives, Aug., 523
- Sprague, Thomas R.**, Merging Digital Technology into an Analog World, Feb., 100
- Stanojevic, T., et al.**, The Total Surround Sound (TSS) Processor, Nov., 734

Stok, F., et al., A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, May, 319

Stroppiana, Mario, and Barbero, Marzio, Video Compression Techniques and Multilevel Approaches, tutorial, May, 335

Suesada, K., et al., D-5: 1/2-in. Full Bit Rate Component VTR Format, Aug., 507

Suzuki, et al., Experiments on Proposed Multiplexing Scheme for Vertical-Temporal and Vertical High Helper Signals in EDTV-II, Nov., 728

T

Takahashi, A., et al., Visual Investigation of the Head-Tape Interface in an HDTV Digital Baseband VCR, Nov., 748

Takeuchi J., et al., D-5: 1/2-in. Full Bit Rate Component VTR Format, Aug., 507

Theuwissen, A., et al., A High-Performance, Full-Bandwidth HDTV Camera Applying the First 2.2 Million Pixel Frame Transfer CCD Sensor, May, 319

Thiele, A. N., An Improved Law of Contrast Gradient for High Definition Television, reprint, Jan., 18

Thorpe, L. J., Nagumo, F., and Ishikawa, K., A Comparison Between HD Hyper-HAD CCD Camera and Color Film for Television Program Production, June, 364

Tonge, Gary, The Service Multiplex, June, 395

Topper, R., et al., An HDTV Digital Camera Processor, Sept., 580

Turner, Robert R., 1,001 Questions to Ask Before Deciding On a Nonlinear Video Editing System, tutorial, Mar., 160

V

Vaanholt, H., Schiffler, W., and Heitmann, J., A Digital 1.2 Gbit/sec VCR for a Universal Recording Format of HD Image Data, July, 439

W

Waller, L., et al., An HDTV Digital Camera Processor, Sept., 580

Warth, Peter F., Implementation of a Large Digital Routing System at the CBC Broadcast Centre, Feb., 105

Weber, Jorgen, Planning Factors and Their Influence on System Aspects, tutorial, July, 447

Westerkamp, D., and Artigalas, M., Receiver Characteristics, tutorial, Aug., 528

White, Hugh E., Reitmeier, Glenn A., and Klensch, Richard J., Channel Coding Approaches and Consequences — Single and Dual Carriers, tutorial, Sept., 608

Wilkinson, Richard L., An Optical Disc Solution for Digital Video Storage, Oct., 656

Wilson, W. Robin, and Baron, Stan N., MPEG Overview, tutorial, June, 391

Windram, M. D., and Mason, A. G., Digital Terrestrial Broadcasting — Issues for Successful Implementation, tutorial, July, 455

Woods, John, and Lee, Yoon Yung, Video Post-Production with Compressed Images, Feb., 76

Wu, Yiyan, Modulation and Channel Coding for ATV Terrestrial Transmission, tutorial, Aug., 531

Y

Yamanouchi, Yuko, Hayashi, Masaki, and Fukui, Kazuo, A Virtual Studio System for TV Program Production, June, 386

Yoshigi, H., et al., Experiments on Proposed Multiplexing Scheme for Vertical-Temporal and Vertical High Helper Signals in EDTV-II, Nov., 728

Z

Zortea, A., et al., An HDTV Digital Camera Processor, Sept., 580

—, A Neural Video Camera Processor, July, 422

Zou, W. Y., et al., Subjective Testing of Broadcast-Quality Compressed Video, Dec., 789

—, Performance Evaluation: From NTSC to Digitally Compressed Video, Dec., 795