

## Education

### Fung F. Lam, Sections Vice-President

It was an aggressive year for most of the Society's sections due to the newly approved digital television standard and the evolution of multimedia technologies. More than 300 officers of SMPTE sections arranged over 280 monthly meetings and 40 seminars in order to keep their members abreast of the new technologies and to review some archival topics. We were fortunate to have a great number of experts share their knowledge through discussions on the latest technologies and developments. The Society has also acquired 1,237 new members since the beginning of the year.

#### 31st Motion Imaging Conference in New York

An estimated 650 people attended the 31st Motion Imaging Conference, February 6-8, 1997. The event featured four technical sessions with nearly 30 papers presentations, and two very successful Saturday seminars. Broadcasting and film professionals enjoyed three days of stimulating, and at times, controversial viewpoints on the latest in digital technologies.

#### The Technical Program

The technical program kicked off with Nonlinear Editing: Technical and Operational Issues, chaired by Bob Turner. Following an introduction from Darcy Antonellis and her Program Co-chair Mark Schubin, attendees were treated to such papers as "Unconnected Islands for Video Editing is Thing of the Past" by Chris Stakutis, Mercury Computer Systems Inc.; "Crossing the Line: Bridging Traditional and Digital Post-



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Production Processes" by Michael E. Phillips, Avid Technology, Inc.; "The Current Limitations of Personal Computers in Replacing Traditional Video Production Equipment" by Steve Hartford, Play, Inc.; "NLE System Design Using Mathematically Lossless Motion—JPEG" by Janet Matey and Alain Legault, Matrox Electronic Systems Ltd.; "Worlds Collide—The Integration of 'Black Box' Effects Technology into Nonlinear Editing Systems" by Pete Challenger, Scitex Digital Video, Inc.; "Microsoft ActiveMovie: A New Media Architecture" by Amit Chatterjee, Microsoft Corp., and Andrew Maltz, Digital Media Technologies, Inc.; "DV Format and IEEE-1394—Higher Quality, Lower Cost Linear Video Editing" by Bertel Schmitt, Adaptec, Inc.; and "On-Line: Creativity to New Levels in Editing" by Stephane Blondin, Discreet Logic.

#### Thursday — Afternoon Session

The second session was held Thursday afternoon under the guidance of Editorial Vice-President Robert Kisor, Paramount Pictures.

The following papers were presented: "High-Speed Internet Access Using Cable Modems with Telephone Return" by Jonathan Fellows, General Instruments; "Fibre Channel Network Offers Gigabit-Speed for Broadcast Facility" by Terry Anderson, Ancor Communications, Inc.; "A Visual Compositing Syntax for Ancillary Data Broadcasting" by Craig Birkmaier, Pcube Labs; "MPEG-2 Practical Choices in Implementing a Compression Standard" by Bruce Penney, Tektronix, Inc.; "Networking Nonlinear Editing Systems—Workgroup Challenges and Solutions," by Paul Yarmolich, Scitex Digital Video Inc.; "Increasing Aggregate Performance and Access Time of Large Video Format Files and High Performance Connection to Large Distributed Storage Capacity Through Fibre Channel" by Bent Stoevhase and Kumar Malavalli, Broadcast Communications Systems, Inc.; and "Issues to be Considered—The Implementation of a Digital Distribution System by the Commercial Broadcast Networks" by Brent L. Stranathan, CBS.

#### Friday — Morning Session

The Friday morning session titled Storage Technologies Using Compression was chaired by Robert Seidel, CBS, Inc. The seven papers presented were "Digital Video Servers for the Television Industry—Potential Applications/Features to Consider" by Robert J. Blackburn, IBM Corp.; "Practical Applications of Server Technology" by Mark LeValley, KDFW/KDFI-TV (Dallas); "Advances in Server Technology" by Christopher D. Bennet, Hewlett-Packard Co.; "Multichannel Video Management—Integrating Videotape, Video Server, and Compression" by Michael Guess, Odetics Broadcast;

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"Concept Design for End-to-End Digital; Video in Support to DOD and Intelligence Collection Systems" by Stephen Long, TASC, Inc.; "Mysteries of Video Disk Arrays" by Charles F. McConathy, ProMax Systems, Inc.; and "A Portable Field Editing System for Electronic News Gathering (ENG)" by C. Colson, K. Yamamura, T. Kondo, and M. McGrath, Sony Electronics.

### **Friday — Afternoon Session**

The technical program concluded on Friday afternoon with a session on Advanced Television, chaired by Charles Pantuso, HDVision. The papers presented included "Development of a SMPTE Standard for the Digital Interface Between the ATV Transport Multiplexer and the VSB Transmitter" by Raymond C. Hauge, Zenith Electronics Corp., and Bernard J. Lechner, Consultant; "Crystal Image: Bridging the Gap Between Cinematography and Digital Image Processing" by Marty Ollstein, Tiffen Manufacturing Corp.; "Cost Versus Quality in ATV Receivers" by Gary Demos, DemoGraFX; "HDTV Camcorder—and the March to Marketplace Reality" by Laurence J. Thorpe, Sony Electronics Business and Professional, Group; "Digital HDTV: Why Bits are Not Just Bits" by Charles A. Poynton, Poynton Vector Corp.; "A Report on the Technology Test of Advanced Video Service—MPEG 2" by Richard A. Mizer, Nuko Information Systems; "525-Line Progressive Scan Digital Broadcasting System Via Satellite" by J. Urano, H. Sakaguchi, and S. Tamura, Nippon Television Network Corps.; and "Production Quality HDTV Recording on D-5 Using Advanced JPEG Compression" by Steve Mahrer, Panasonic Broadcast & Television Systems Co.

### **Saturday Seminars**

Two very successful seminars were held on Saturday, February 8. The first, Shooting on Film, Editing Nonlinear, Completing on Film and Video: What Procedures are Available to the Filmmaker? was chaired by Linda Young, DuArt Film and Video and attended by nearly 350 people.

This comprehensive seminar covered important procedures for the filmmaker to follow when shooting on film, making video dailies only, performing nonlinear editing, and completing on film or video. Considering the filmmaker's budget, the value of making limited film dailies when completing on film were also examined. Don Donigi, Domenic Rom, and Tom Spitzer, DuArt Film & Video, joined Linda Young in walking attendees through the video dailies and film and video post-production process. Steve Hamilton, Spin Cycle Post, looked at the planning, preparation, syncing, and editing of audio in a nonlinear digital environment. A film and video projection demonstration compared film and video dailies made from different Eastman color negative camera film in both 35mm and 16mm, shot at different exposures. A panel discussion featuring all the speakers ended the seminar.

The second seminar, A Technical Introduction to Digital Video, was conducted by Charles Poynton, Poynton Vector Corp., and attended by nearly 150 people. Based on Poynton's book of the same name, the seminar, was designed for computer system engineers, programmers, or technicians interested in learning how to use digital video technology. Television professionals were exposed to digital images used in computing that can be applied to video systems, equipment, and techniques used in the multimedia system. The topics ranged from basic principles to electrical and mechanical interfaces. All attendees received a copy of Poynton's book, which is also available from SMPTE headquarters.

### **SMPTE's 138th Technical Conference**

The 138th Technical Conference provided a full spectrum program on new developments in television, film, and allied motion imaging technologies. The conference carried the theme "Film and Video Synergies: Creation to Delivery."

The technical program included 75 papers on such subjects as Widescreen Issues for Film and Video, Digital Film Systems, Video

Servers, Automated Video Indexing for On-Demand Retrieval, Using Intelligent Nodes and Fiber Optics to Control the Next Generation of Digital Television Transmitters, Compressed HDTV for Production, and Winning in a Global Economy. A panel discussion, entitled Content and the Consumer: Future Pathways, was also a key attraction in the program. The three seminars, on Compression; Nonlinear Editing Systems; and The Theatrical Experience: An Update, were also very well received.

### **HDTV Workshop**

A major highlight of the four-day program was the HDTV Workshop that preceded the official start of the conference. The workshop was sponsored by the International HDTV Committee and ran for two days. Following Kenneth P. Davies' opening speech, Mark Richer, Advanced Television System Committee, made the keynote address. The sessions, arranged by Program Chair Metin Akgun, CRC, focused on the subjects of Systems and Application, Motion Estimation, DSP Architectures, Video Processing, Video Equipment, Vector Quantization, Transmission, the North American Digital Television System, Digital Television Implementation Strategies, and 3-D Television. At the conclusion of the workshop, the participants toured the HDTV facilities at Sony Studios in Culver City.

### **Technical Program**

The papers sessions featured an informative program of scientific presentations by leading international practitioners.

Thursday morning's session covered the following: Widescreen Issues for Film and Video, chaired by John Galt, Sony Pictures, Video Servers, Non-Linear Access to Content, chaired by Stanley N. Baron, NBC, and Compressed HDTV for Production: The Challenges, chaired by Glenn Reitmeier, David Sarnoff Research Center, which was a NIST-ATP HDTV Broadcast Technology Research collaboration.

The afternoon sessions included Special Venues and Techniques,

chaired by Greg Thagard, Warner Bros., *Winning in a Global Economy: The Power of Standards*, chaired by Chip Aycock, Warner Bros., and *Computer-Based Assist for Broadcast* chaired by Ira Goldstone, Tribune Broadcasting.

Friday morning's sessions concentrated on *The Digital Virtual Studio*, chaired by David Elliott and Kenneth Michel, ABC; *Audio: The Wide-screen Experience (Film and Video)*, chaired by Ioan Allen, Dolby Laboratories; and *DVD Authoring: A New Technology*, chaired by Mikhail Tsinberg, Toshiba.

The afternoon session featured *Delivery Systems*, chaired by Robert Seidel, CBS; and *Application in Production Technology*, chaired by Richard Stumpf, Universal Studios. A joint SMPTE/ACVL session on *Creating and Delivering on Film* was chaired by Frank Ricotta and Paul Bourque, Technicolor.

### **Professional Seminars**

Three seminars ran concurrently on Saturday, October 12. *Compression*, chaired by Ken Davies, CBC, included papers on MPEG-2, Video Compression, Systems and Applications to Production and Broadcasting, Basics of Audio Compression, Testing and Measurements in Compressed Video and Audio, and Non-MPEG Compression Systems.

Chaired by Kim Aubry, American Zoetrope, and John Carlson, Monaco Labs., the seminar on *Non-Linear Editing Systems*, was presented in three parts: a multimedia presentation on the history of motion picture editing; existing state-of-the-art systems and practical considerations of purchasing, renting, or using a nonlinear editing system, as well as a general overview of the post-production process; and a panel discussion on where nonlinear editing is heading.

*The New Theatrical Experience: An Update*, chaired by Edmund DiGiulio, Cinema Products Corp., was held at AMPAS's Samuel Goldwyn Theater in Beverly Hills. It featured discussions and demonstrations of the dramatic improvements currently taking place in film technology, including new lenses and theater

configuration. Leading experts in the field presented papers to augment demonstrations of theatrical projection.

### **First Annual Spring Film Conference and Exhibition**

The First SMPTE Annual Spring Film Conference and Exhibition was held on March 20-22, 1997, at the Century Plaza Hotel in Los Angeles.

An all-day seminar, chaired by John Mason, Eastman Kodak Co., focused on *The Nature of Film*. The session was devoted to color theory; sensitometry; tone reproduction; and various film types, formats, and naming conventions. Other topics included conventional and non-conventional negative and distribution films, film cleaning and handling procedures, telecine transfer, digital sound, and keycode numbers and applications.

Four comprehensive sessions followed the all-day seminar. The first session, *Production*, was presented in association with the American Society of Cinematographers and was chaired by Ed DiGiulio, Cinema Products Corp. and John Hora, ASC. It covered the technical and creative aspects of getting the story on film.

Session two, *Laboratory Issues*, chaired by Frank Ricotta, Technicolor, and Paul Law, Consolidated Film Industries, focused on improvements in film restoration practices. The third session, *Post-Production*, chaired by Paul Carey, Component Video and Jon Erland, Composite Components, discussed on-editing, telecine transfer, effects, etc. The final session, *Distribution/Exhibition*, organized by SMPTE/ITEA and chaired by Ioan Allen, Dolby Labs, covered projection systems, screens, sound, formats, and theater quality.

### **SMPTE International Conference, Milan, Italy**

A total of 215 people attended the SMPTE International Conference at Milan Fair Organization's new conference facilities, October 16-18, 1997. A simultaneous translation Italian/English/Italian was available throughout the presentations. The conference objective was to highlight the main technological and economi-

cal aspects of the four communication worlds on which human activities are currently based: cinema, television, telecommunication, and computer science. The list of speakers included Vittorio Storaro, a three-time Oscar award-winning director of photography; Leopoldo Frati, IBM; Guido Vannucchi and Roberto Ceccato, both from RAI; Alan Brawn, JVC-USA; Alan Mosley, CRL-England; and H. Pichler, Vienna University-Austria.

### **Sections Present Seminars**

The Atlanta Section held an all-day seminar on *Digital Video Consortium*. The speakers included Phil Livingston, Panasonic, Gwenn Tune, Leitch, and Clyde Smith, Turner Entertainment.

Topics included DV System, Overview of AES/EBU Audio Standard, and Integration of Video Server to Broadcast Environment. SMPTE Engineering Vice-President William Miller presented a report on the work of the SMPTE/EBU Task Force on harmonization. Merrill Weiss followed with a detailed discussion on the syntax and structure of MPEG and the Grand Alliance System.

The Hollywood Section held an all-day seminar on *Preparing for ATV, The New Digital Television Broadcast Standard* on May 17, 1997, at the Norris Cinema Theater. Morning speakers included Robert Hopkin, Joseph Flaherty, Charles Pantuso, Tomlinson Holman, and John Hora.

Speakers at the afternoon session were Leon Silverman, Henry Mahler, Robert Seidel, Phil Squayres, Tom Brehl, and Steve Schifrin.

An all-day seminar on *Digital: Theory and Practice* on May 14 and 15 was organized by the Montreal Section at Ecole de Technologie Supereure. The speakers were Annie Normandin, Discret Logic, Andre Vincent, CRC, Pierre Raymond, Hybride Technologies, and Odette Harton, Bell.

A series of four one-day seminars was organized by the San Francisco Section from August to November, 1997. Video Acquisition and Display was discussed in August; Digital Audio in the World of Digital Television, in September; MPEG, the

Revolution into MPEG-2 and Implementations, in October; and Specifically MPEG-2, in November.

Forty-five members attended two successful full-day seminars held by the Toronto Section on February 21 and 22 at Panasonic's Mississauga training facility. (This was the fifth of the Toronto tutorial program on Digital Technologies. It was a resounding success once again.)

### Reports on Section Meetings

I would like to take this opportunity to express my heartfelt appreciation for the dedication and hard work of the section officers who arranged so many interesting and informative activities for their fellow members. Following are some of the activity highlights of the sections.

#### Atlanta

The Atlanta Section kicked off the new year at a meeting where 55 members and guests listened to Ray Baldock, Grass Valley/Tektronix, discuss Fibre Channel, methods of analog video distribution used today, and trends for the future. Forty-two people attended the February meeting at Media Products Inc., on Media 100 application software. The topics of the April and May meetings were Gentlemen Start your Transmitters and 2 Bits-4-Bits-6-Bits a Dollar, respectively. The subject of the October meeting was Pluto SPACE, a digital video and audio recorder using the latest disk technologies.

#### Australia

The Australia Section held its 1997 Conference from July 1 to 4 at Wesley Center in Sydney, Australia. The theme was New Technology, New Opportunities and the conference featured the following programs: Engineering and Architecture, Capture, Digital Effected Cinematography, Storage, Broadcasting and the Olympics, Archives, Post-Production, and Transmission.

#### Chicago

The New ADSL Technology, presented by Hoffman Estates II, Ameritech, was the topic of Chicago's March meeting, attended by 65 peo-

ple. Synchronization and Timing in Analog and Digital Environments was presented by Ole Plett, Philips Television Test at the April meeting attended by 65 members and guests. Tapeless Video Distribution was the topic for the May meeting, held at IndeNet/Mediatech in Chicago.

More than 200 members and guests attended the final meeting of the 1996-1997 program schedule in June, a joint effort of the chapters of SMPTE/SBE, and ITS of Chicago, held at WTTW-TV. The purpose of the gathering was to discuss the issues facing the industry during the preparation and implementation of the advanced digital television standard recently approved by the FCC. The keynote speaker was Larry Thorpe, Sony Electronics.

#### Dallas

High Quality Video Over DS-3 Lines, was the topic of the joint SMPTE/SBE meeting in May, which included a presentation and demonstration by Richard Majestic of Sony Business and Professional Group. High-quality video was transmitted at 2x realtime speeds between KHOU-TV-11 in Houston and KXTX-TV-39/KXAS-TV-5 in Dallas via DS-3 telephone lines.

#### Detroit

The Detroit Section's meeting in March covered the topic Closed Captioning. Norman Trask discussed economic and political aspects and gave an overview of the technical advances including improvements in realtime and offline captioning. April's meeting on Serial Component Digital Video Transport and DTV Update was held at the Specs Howard School of Broadcast Arts, Southfield, Mich.

The program for the May meeting, the Digital Newsroom, was presented by Dan Cullen, Bill Rogers, and Robert Fields, all of Avid Technology, Inc. The meeting was held at WKBD-TV studios. The Vision II Film Stock, presented by Pamela Zeh, Kodak, was the topic for the June meeting. October's meeting was devoted to Digital Versatile Disks—An Overview, presented by

Mark Anzicek, Zen Technologies. High-Definition Television was covered at November's meeting.

#### Florida/Caribbean

The Betacam SX Format was presented by Duane Solem, Sony Electronics, at the January meeting held at the Sony Conference Center, Disney World. The section's April meeting was a Post NAB Roundtable Discussion. Digital S Video was presented by Neil Neubert, JVC, at the Metlife Conference at Epcot Center, on May 20, and at the Broward ITV Center on May 21. Pluto Technologies SPACE Video Recorder was presented by Earl Higgins at the October meeting.

#### Hollywood

An estimated 170 people attended the February meeting at the Gene Autry Western Heritage Museum in Los Angeles. Tom Gavin of the Jet Propulsion Laboratory and five project engineers presented an in-depth overview of the October 1997 mission to Saturn. Cindy Kahn described the wide and narrow field cameras that use 1024 x 1024 1-in. CCD sensors to provide high-resolution images from the spacecraft. Susanne J. Spitz talked about the spacecraft's 4-m antenna used for nine different radio systems to relay information to earth. Tom Gavin told many anecdotal stories about the seven-year design and building schedule for the 12,500-lb spacecraft.

Picture Quality Measurements, was the topic of discussion at the May meeting presented by Liz Jefferson and John Edwards of Television Test at the Gene Autry Western Heritage Museum. The June meeting concentrated on DTV Development, Computer Industry Planning, presented by Craig Mundie, Microsoft.

#### Hong Kong

The Hong Kong Section held a technical seminar on Virtual Scenario, at the Ocean Terminal District Center, Wharf Cable Ltd. The speaker was James M. Eddershaw, Radamec Broadcast Systems. With an audience of 68, the May meeting was held at Studio One, Broadcasting House of

Radio Television Hong Kong. Sami F. Asfour, Minerva Systems, Inc., explained the process of DVD pre-mastering, comparisons, playback time, video quality, CBR versus VBR, multipass encoding, and future trends for DVD.

The Annual dinner meeting was held in November with the support of Tektronix. Their web site is in operation and the URL address is <http://www.smpete.org.hk/>

### **Houston**

The May section meeting was held jointly with the Dallas Section. The October meeting was held at the NASA Johnson Space Center covering the topic Virtual Matrix Routing Switcher Control. Bob McIntier, Philips/BTS, presented a comprehensive overview of the Jupiter Facility Control System followed by a tour of JFC's Television Production and Mission Support facilities.

### **Montreal**

Montreal Section's February meeting featured a presentation by Louis-Jerome Leclerc and Jean-Luc Dugas of Videotron on the subject Speed Over the Internet with the Cable Modem and ADSL.

### **Nashville**

The Nashville Section's March meeting featured Media 100xs Non-Linear Editing System, presented by Hal Songer at WKRN. April's meeting on NAB '97 Wrap-Up, was presented by Mike Quinn and Mike Arnold at WSMV Television Channel 4 studios. NAB '97 Review, was the subject of May's meeting. DTV 19.3 Mb and Beyond, presented by Philips Research Laboratories, was the focus of June's meeting.

### **New England**

The New England Section meeting in March was held at WGBH-TV, Channel 12, Allston, Mass. The broad topic of Ancillary Signal, or Things You Should Know About Your Vertical Interval was discussed by speakers including Gerry Field, Peter Pinch, and Fred Heiniman. In April, a

Post-NAB '97 Wrap-Up meeting with an attendance of more than 120 people, was held jointly with AES/ITVA/SBE.

### **New York**

The section held its April meeting at NBC Studios, Rockefeller Plaza, featuring the NAB '97 Review by Bob Turner and Mark Schubin. The New Kodak Vision by Steve Garfinkle and daVinci Systems by Michael Arbutnot and Parker McElven were presented at the May meeting held at the Tribeca Film Center. Two hundred and ten members and guests attended the June meeting, entitled HDTV Viewing, at Show Me New York, a high-definition theater in Manhattan. John Dowdell, Tape House Advanced Imaging Center, discussed the transition to HDTV broadcasting. Robert Seidel, CBS, Inc., talked about the implementation of HDTV at the CBS Network, and the meeting concluded with David Niles of Show Me New York, explaining how the tape was produced using various HD formats.

The October meeting was held at Eastman Kodak, New York City. The program included the ABCs of Motion Picture Film Presentation, presented by Steve Garfinkel and Bob Strickland, Kodak; and Save Our Tapes! Archiving and Restoration, by Jim Lindner, Vidipax.

### **Ohio**

In May, the Ohio Section held a joint meeting with local chapter 52 of the SBE at NBC-Columbus, WCMH-TV. Digital High-Definition Television Expert Comes to Ohio! was presented by Joseph S. Balkin, NBC. Balkin explained the relevance of the new FCC ruling on the fast changing industry and provided a general overview of NBC's projected participation in this technology.

### **Pacific Northwest**

The program at the Pacific Northwest's September section meeting was presented by Larry Brandt, KCPQ, and Greg Doyle, Sparking Engineering, to an audience of 120 people. Media Expo '97 was presented at the October meeting at the

Meydenbauer Center, Bellevue, Wash. CSI Digital presented a tutorial on the "Other" network, focusing on generic LAN data communications, topologies, and terminology.

### **Philadelphia**

The Philadelphia section presented Digital Television Implementation Solutions, by Mark A. Aitken, Comark, at the March meeting held at WPSG-TV studios in Philadelphia. Aitken discussed the advantages and problems that could be encountered on the road to broadcasting on a digital standard.

The April meeting was held at the Tektronix facility, Blue Bell, Pa., on the Overview of the MPEG-2 Video Compression Process. AES Digital Audio Basics and AES Audio Terminal Equipment was the subject for the May meeting. The topics covered included oversampling converters; signal-to-noise as it relates to 18 bit, 20 bit, and 24 bit sampling; full scale digital, analog headroom; jitter; etc.

### **Rochester**

An overview and demonstration of the new motion picture negative film, Kodak Vision was given at the April meeting by Bob Strickland at AVTV Arena, Rochester, N.Y. Ray Conover, USSB and Conus Communications, presented a technical overview of USSB's direct satellite broadcast system. Conover described the national spacecraft and the company's national broadcast center near Minneapolis.

The Digital Video System Update was the topic of the October meeting at WXXI-TV21 Studios, Rochester, N.Y. The topic of November's meeting was Imax Dome Tour & Show at Syracuse, N.Y.

### **Rocky Mountain**

The section held a special joint meeting with the local SCTE and SBE chapters. The theme was Communications and Data Networking presented by Randy Briham, Sony, Rich Rodriguez, AT&T/Time Warner, and Leo Cirbo, FCC. The program topics were Serial Digital Data Interface, The Future of Telecommunications, and An FCC Update.

Neil Neubert, JVC, presented a tutorial on Digital Video Recording Technology and JVC Digital S at the January meeting held at Red Rocks Community College. A tour of KCNC was arranged for the September meeting. The Challenges of Wiring for Digital, presented by Dave Geon, Belden Wire Cable was the topic of October's meeting, and Video Pre-processing for Compression was covered in November.

### **Russia**

Fifty-seven people attended the June meeting on Advanced Video Projectors held at NIKFI Headquarters in Moscow. Modern projectors were reviewed, and a discussion revolving around screens for reflecting and translucent projection followed.

### **Sacramento**

The topic of the May meeting was Digital Television, presented by Peter Symes, Tektronix. A process was discussed and implications for the television industry were also looked at. At the March meeting David Hoogendyk, Tektronix/Grass Valley Products, gave a presentation on Fiber-optic Transmission Technology including an overview of fiber optics and discussions on loss budgeting, single mode versus multimode, various kinds of dispersion, connector types, and various transmission techniques.

The January meeting focused on Digital Video and Audio Storage and Transport. Key issues addressed by Chris Romine, Sierra Design Labs, included flexibility, performance, and the cost of capital equipment. He stated that any new centralized solution would need to be compatible with today's analog and video-based equipment.

Second Generation Digital Non-Linear Video Editing Systems was the subject for the February meeting presented by Richard Jackson and Jim Jupin of Scitex Digital Video. The May meeting was held at Flessing & Flessing, Auburn, Calif.

### **San Francisco**

The San Francisco Sections's February meeting featured The Beginners Guide to Dolby Digital—Dolby AC-3 Audio Tutorial and Demonstration, a presentation by Stephen Vernon at Dolby Labs, San Francisco. In March, 835 members and guests gathered at Paramount's Great America Imax Theater, Santa Clara, Calif., to hear Bill Shaw and David Keely, Imax Corp., discuss Imax's New Releases and the Technology Behind Them, as well as a description of techniques, equipment, and future plans of Imax.

The April meeting was held at SGI Silicon Graphics, Mountain View, Calif. The program, SMPTE on the Internet and the '97 NAB Wrap-Up, were presented by Charles Hintz and John Goodell, Webmaster. The new San Francisco SMPTE web site was demonstrated to the audience.

The May meeting had five speakers, Ray Baldock, Tektronix, Brian Hanley, Silicon Graphics, Allen Hansel, Hewlett-Packard, John Hennessy, Ampex, and Jim Peacher, ASC Audio Video. The topic was Video File Servers: State of The Art—On The Air Now. Video servers are no longer a myth. They are here now and revolutionizing the way video is staged, stored, and distributed by television facilities, large and small.

Jeff Cree, Sony Acquisition Systems, spoke to 60 members and guests at the June meeting. Cree talked about the ramifications of DTV mandate by FCC and its effect on image acquisition technology.

### **Toronto**

The January 11 meeting, via satellite, was arranged by Ed Holmes, Global TV, and SMPTE President David George. DTV-Digital Television was the subject for the February meeting, presented by Lou Montana of NetStar Communications, Doug McKenzie, Westcam Entertainment Services, and Pat Whittingham, Sony of Canada. The March meeting was held at Sony Music Canada. Ken

Schafer gave an overview of the Sony Music online services using the Internet, and Vic Macina explained the complete manufacturing process of compact discs, followed by a tour of the facilities.

More than 700 people attended the April meeting at the Cinephore Imax Theater-Ontario Place to listen to Imax 3-D 70mm Film and Audio Technology, presented by Bill Shaw, David Keighley, Ken Baker, Steve Read, Samuel Zhou, and James Porteous of Imax Corp.

Tom Allwood, who arranged the May meeting at Deluxe Toronto, introduced A Toolbox for Electronic Transfer by Loreto Leombruni, Nancy Nickels, and Cathy Cultraro, Kodak. They explained the advantages of using the Telecine Toolkit designed to establish a common communication denominator between directors of photography and transfer facilities.

The October meeting was held at ExpressVu's headquarters, the first direct-to-home (DTH) satellite entertainment operation in Canada. Speaker Terry Snazel explained in detail the development and operation of the 100-channel facility. At the conclusion of the meeting he conducted the 220 attendees on a tour of the facility.

### **Washington**

Washington Section's May meeting was held at the Newseum, Arlington, Va. Richard Hess, National TeleConsultant, discussed the design and construction of the \$50 million, 72,000 sq. ft. facility and its systems. The Newseum is an interactive museum of news which allows visitors behind the scenes to experience how and why news is made. A high-definition video presentation and tour of the Newseum was given.

SDTV, HDTV, and the Migration to Digital Broadcasting was the topic for the June meeting at Sony, Lanham, Maryland. Steve Wynn, Sony Advanced Technology, explained the change in U.S. broadcasting to completely digital terrestrial transmission of television.