

Section Meetings

Hollywood

September 25, 1999

The Hollywood Chapter of SMPTE presented an all-day Fall program on Saturday, September 25, 1999 at Warner Bros. Steven J. Ross Theater in Burbank, CA, hosting almost 200 participants and attendees. The event was underwritten by Brooks Flemming Associates, Chace Sound, Cinetech Labs, Consolidated Film Industries, Crest National, Deluxe Laboratories, Inc., Eastman Kodak Co., Film Technology Co., Inc., Foto-Kem Industries, Inc., Technicolor Film Restoration Co., WRS Motion Picture and Video Laboratory, and YCM Laboratory.

After opening remarks by section chair John Brooks, BFA, and program chair Milt Shefter, Miljoy Ent. Inc., the presentation continued with an 18-min, 35mm scope film on the techniques of film preservation, produced especially for this program by Ralph Sargent, Film Technology, Inc. Following the film, presentations were made by John Cassidy, Film Technology, further discussing processes used in preservation; James Young, Chace Productions, regarding sound restoration; Ken Heywood, Rainmaker Digital Studio, on using digital processes; and David Wexler, Hollywood Vaults, humorously detailing the importance of proper environmental media storage.

The second module covered the progress of sound recording from the earliest talkies to modern digital reproduction. Richard May, Warner Bros., introduced a series of film clips, including scenes from *I Am a Fugitive From a Chain Gang*, *The Great Waltz*, *Oklahoma*, and *A Star is Born*, among others. This was followed by Curt Behlmer, SounDeluxe, with examples of modern sound recording quality.

After a break for a buffet lunch, Alan Masson, Eastman Kodak Co., presented "Color Cinematography." This explained the differences between additive and subtractive light sources, how full color is created from primary colors, and how color film works.

Milt Shefter hosted the next module, "Inter-Media," which covered the merger of film with the electronic world. He was joined by Brad Hunt, Motion Picture Association of America, and Forest Fleming, Cinesite, who discussed digital tools and compression issues. Jim Lindner, VidiPax, advanced a theory of the "media-less archive."

The final module was conducted by David Richards, Christie, Inc., together with Bob Pinkston, Dolby Laboratories, John Pytlak, Eastman Kodak, Co., and

Paul Rayton, chief projectionist at the American Cinematheque's Egyptian Theater. Together, they covered the history and basics of film projection and exhibition, standards and screen lighting measurement, and maximizing the viewer's experience in the theater.

Following a reception, the day concluded with a showing of the newly restored 1933 Warner Bros. feature *42nd Street*. The event was planned and presented by Alan Masson, Richard May, David Richards, Ralph Sargent, and Milt Shefter of the Hollywood Section.—Richard May, Section Manager

Atlanta

October 11, 1999

The Atlanta section met at the facilities of iXL in Atlanta. The presentation was given by Tara Kelly, senior applications engineer of TeleStream. The focus of the presentation was moving video over a variety of Teleco environments. Kelly discussed the differences between the old ways of moving video, satellite, microwave, and VVIX, and the new ways, using Telco's computer networking and video compression. She discussed the advantages in sending video in a packetized format versus streaming. The presentation was well received by the 44 members present.—J. Rhett Mappin, Secretary/Treasurer.

Rochester

October 12, 1999

Over two dozen attendees greeted Kenneth R. Hunold, Dolby Laboratories, who spoke on three primary facets of Dolby's multichannel audio systems. Hunold's experience includes working for 25 years as an engineer at ABC and earning an Emmy for his involvement with the Calgary Winter Olympics. The presentation, held in WOKR TV13 Studio B, summarized the history, specifications, and merits of each of the three related surround sound technologies.

Dolby Surround began in the home market via 2-channel VHS, Laserdisc, and television broadcasts as a 4-channel, matrix-encoded scheme compatible with mono, stereo, and Pro Logic decoded surround sound configurations. Its 4-channel mix combines discrete left, center, right, and surround inputs using the Dolby SEU-4 Surround Encoder. Recently Dolby has introduced the new DP563 Surround Encoder, a device equipped with digital I/O and the capability to pre-mix 5.1-channel audio for 4-channel matrix encoding.

Dolby Digital, in its early days on Laserdisc known as AC-3 for "Audio Codec 3," is a discrete, nonmatrixed, 6-channel perceptual coding technology that is the standard for ATSC DTV. Also used in DVD video and some DVD-ROM titles, Dolby Digital's popular "5. 1" designation results from the sixth, low-frequency effects channel occupying only one-tenth of the original bandwidth. Its low data rate results from <8:1 to 12:1 compression using hearing threshold limitations and frequency domain masking. Metadata can include channel information, dialogue normalization, and dynamic range control through the DP569 Multichannel Dolby Digital Encoder.

Dolby E, unlike Dolby Digital, which allows for only one encode/decode cycle, is a higher bit rate, cascaded post-production and distribution process that claims to offer up to ten cycles without audible degradation. The "5.1 + 2" system allows up to 8 channels of encoding/decoding plus SMPTE time code on either a single pair of AES/EBU channels or stereo digital tracks at 1.92 Mbits/sec. The DP571 Dolby E Distribution Encoder and DP572 Decoder allow editing through identical video and audio frame rates—a feature Dolby Digital's 32ms frames cannot match—and also multiplex metadata into the audio stream.

Hunold added that Dolby licenses additional varieties of surround sound, including Surround EX for the rear of theaters, Virtual Surround for space-challenged markets, and Dolby Headphone for airline passengers. The corporation does not have any specific electronic cinema products yet but has used Dolby Digital and Dolby E products with HD D-5 VTRs for electronic cinema applications. In addition, Dolby Surround EX has been used with disk-based multitrack audio recorders for e-cinema productions.—John P. Weiksnar, Rochester Section Manager/Membership Chair

Napa Valley College

October 28, 1999

Napa Valley College's student chapter would like to extend a special thank you to John Mazza for speaking at the meeting. Mazza works for AVTS, which is a stage rental facility. He was very encouraging to those students who will be graduating in May. As a former graduate of our program himself, many doors have been open to him. His other employers included Direct TV, VTE, and Sony. "Ever since I got out of the program, there's never been a day when I've been out of work. Never."

After Mazza's talk, we were very hopeful not only of finding employment, but for the various opportunities that exist for us as Napa Valley College graduates.—Susan L. Ball, Student Chapter Secretary

Ohio

October 28, 1999

The October meeting was held jointly with the local SBE section at the WBNS Digital Television Transmission plant in Columbus, WBNS-DT, with 45 members and guests attending.

The theme was "Digital Audio, the other Half of the HDTV Equation." The guest speaker for the evening was Edmund A. Williams, DTV senior engineer for PBS in Alexandria VA. Williams began his presentation with an outline of the basics of digitizing audio signals. With digital broadcast audio, it isn't necessary to digitize all of the original sounds, just select ones strategically positioned before and after certain targeted ones. The combination of these selected sounds creates the continuous impression, as experienced by the audience, of a full and faithful audio reproduction even though some sounds are actually canceling out others.

Williams' presentation consisted of PowerPoint slides outlining how the new Dolby E Digital audio format, now available to DTV broadcasters, can handle up to eight digital audio channels. As new digital HDTV plants go on line with these additional channels, either for local origination and/or network pass-through, they will need to monitor in just a 2, 3, or 4-channel format.

He showed slides of how the new monitoring layout should ideally look. The new multichannel monitoring will include a left, center, right, left surround, right surround, a low-frequency sub woofer, and for Dolby Digital Surround EXA, a center surround channel, for some of the DTV broadcasts of the future. The addition of digital multichannel audio participation in a DTV broadcast, can create the effect of making the picture appear to be even wider than it actually is, because the viewer's attention is stretched beyond the picture's 16 x 9 aspect ratio!

Williams detailed how the new metadata signals will provide synchronizing of the various digital bit stream audio and video frames by time stamping them, thus assuring accurate matchups of elements such as lip sync. If the DTV signal is multiplexed into four independently different channels, each of them can broadcast the new Dolby E Digital metadata signals to each of the respective receivers of the four channels. He gave a brief overview of the progress that PBS has made in offering the new Dolby E Digital Audio service from their network center as a result of recent installations there, as well as some of their affili-



At the Ohio Section meeting in October, (l to r) Edmund Williams, PBS Senior Engineer; Gene Batey, Section Treasurer; David Schein, Section Manager.

ates. PBS is well prepared for current as well as future, digital multichannel audio presentations.

A lively Q & A session followed the presentation with concerns by some members about broadcasters calling for more testing of the 8 VSB transmission standard because of multipath reception problems in some urban areas. Williams suggested that by using a diverse antenna arrangement consisting of at least two receiving antennas along with new chips developed by Motorola, some multipath reception problems could be improved or eliminated. He said that calls for further testing are appropriate but, he was confident that the 8 VSB transmission standard is the best all-round, and that any multipath problems are likely to be eliminated soon.

Williams suggested that an improvement could be made to the DTV broadcaster/manufacturer relationships in the DTV chain, by working together more closely in the future. As new services and features are offered by DTV broadcasters/manufacturers, for instance, second audio program sources, closed captioning, multicasting, diversity antennas, chips, etc., both parties should coordinate their introduction. This would better assure the introduction of those features on future generations of DTV receivers.

John Owen, chief engineer of WBNS Television, and his staff, provided all of the meeting facilities and audiovisual presentation equipment as well as assisting with the refreshments.—Gene L. Batey, Secretary/Treasurer

Southern Alberta Institute of Technology (SAIT)

November 9, 1999

On November 9, the students of SAIT's Broadcast Electronics Technology pro-

gram visited and toured the station of CTV's Calgary affiliate, CFCN, as well as CJ92 FM and 1060 AM radio. The tour involved seeing all the various aspects of a medium market broadcaster first-hand, including editing suites (both linear and nonlinear), production and master control, transmission systems for both television and radio, as well as mobile units. Most impressive were the dual HP media stream file servers being used. More tours of local television and radio broadcasters are scheduled for later in the year, and early in the new year.—Bill Kilgallon

San Francisco

November 11, 1999

One hundred sixty people attended the November 1999 San Francisco section meeting on "Digital Video's Pursuit of Motion Picture Film." The program was hosted by Sony Electronics at its western headquarters in San Jose, CA. The presenter, noted electronic cinema expert and Sony vice-president of acquisition systems, Larry J. Thorpe, covered some of the hot issues in this emerging area. As digital video converges with film, both in image acquisition and in theater display, we are facing a number of technical problems that challenge many of our beliefs about film and video.

High-definition video (HDTV) products presently available and in development are a far cry from those of only five years ago. Video's state of the art makes Thorpe optimistic about film-video convergence. Recent major improvements in HDTV imaging—optics, CCD imagers, digital video signal processing, and digital recording methods—point to the nascent trend toward HD video in feature production and distribution. With the advancements in technology today, "all-electronic cine-

matography" can match and even surpass the required primary imaging characteristics of film.

Thorpe showed there are certain advantages of video over film, but also noted the concessions video equipment manufacturers are making to achieve a certain "film look," especially the use of the 24-per-second frame rate in video production. Increasingly, film and video are influencing each other.

Thorpe discussed the obstacles that have historically prevented the convergence of video and film. Although many of those problems stemmed from the inadequate quality of video imaging and recording in the 1970s through the middle of this decade, he added, "a great deal of the contention between film and video has been exacerbated by differences in the 'language' used to describe 'imagery.'" Analyzing the most important imaging characteristics of film versus video, Thorpe said he finds the nomenclature of film more descriptive and useful than most video terms, so he made the following comparisons in film language:

Exposure Latitude: The best 35mm film stock (EXR-5245) has an exposure latitude of 9.5 F-stops; the HDCAM cam-

corder has an exposure latitude of 11 F-stops;

Exposure Index: The imaging sensitivity of devices such as HDCAM exceeds high-speed film, in excess of 600 ASA—with no perceivable "grain";

Tonal Reproduction: High-definition camcorders have circuitry that allows them to easily emulate and match most commonly available film stocks;

Color Reproduction: a digital camera can match most known film stocks;

Picture Sharpness: HDCAM camcorder tape capture is less sharp than a 35mm film color negative, but exceeds 35mm film at the level of the first generation positive print; an HDTV camcorder is decisively sharper than Super-16mm film; a Digital Betacam camcorder is only slightly sharper than Super 16.

Thorpe concluded his presentation by showing clips of some recently produced comparisons of identical footage shot on film on high-definition video, with playback for both projected on a high-definition video front-projector. The audience then joined in with questions and comments.—Peter Hammar, Secretary/Treasurer

Chicago November 18, 1999

The November meeting attracted 20 attendees for a presentation made by Darryl Krall, regional sales manager for Quantel. Krall discussed a new approach to the handling of the various HDTV formats in post-production. Mixed formats of source materials may be presented for compositing and editing, presenting a potential need to convert all source material to a common format for processing and then subsequent conversion to the selected output format. A concern arises out of the fact that multiple conversions within the post-production process, as well as the distribution process, may potentially reduce the overall quality of the program. Quantel is proposing a combined hardware and software solution that allows input of all source material to be stored in its native format and subsequently converted to the required output formats during final processing. This approach minimizes the number of possible conversions and therefore improves the quality of the final output. Krall answered a number of questions following the conclusion of his formal presentation.—Steve Robinson, Secretary/Treasurer

News

LA Film School First in North America with Sony High-Definition Soundstage

The Los Angeles Film School has announced the beginning of construction on what will be Sony's only professional high-definition digital stage in a school setting in all of North America. Its unique state-of-the-art specifications will include Sony HDTV cameras and switching equipment, as well as up-and-down conversion capabilities; a cinematographic 16 x 9 format; film speed of 24 frames per sec; Sony high-definition editing bays, compatible with digital video, digital Beta and Avid; and "Filmmation" film replication capabilities. "With the transition from analog to high definition underway, we feel that it is very important for us to give our students the chance to stay on top of the future of filmmaking," said film school dean Amedeo D'Adamo.

The LA Film School is a one-year intensive professional training program in motion pictures, television, and new media, with emphasis on directing, producing, cinematography, editing, re-recording, mixing, and production design.

HDTV Coverage at 2000 International CES

The Consumer Electronics Association (CEA, formerly CEMA), has announced its first time plan to provide HDTV coverage of 2000 International CES. Attendees and exhibitors at the January 6-9, 2000, Las Vegas venue, will witness history in the making, courtesy of a technology that made its industry debut there in 1998. Gourvitz Communications Inc. has been selected to produce *CES Today*, a daily hour long HDTV convention television program, which will cover CES product introductions and demos, show events, keynote speakers, and select conference sessions; and will air during show hours on HDTV monitors throughout the four exhibition venues.

CEA, a sector of the Electronic Industries Alliance (EIA), represents more than 500 U.S. manufacturers of audio, video, accessories, mobile electronics, communication, IT and multimedia products sold through consumer channels. The CEA sponsors and manages the International Consumer Electronics Show (CES), and reinvests all profits into industry services including technical training

and education, product promotion, engineering standards development, market research, and legal affairs support.

ITU Standard for Digital A/V Equipment Interconnection

Connecting a cable television feed to a videocassette recorder (VCR) and a digital television set (DTV) in the home environment has become easier, thanks to a global standard approved by the ITU during recent meetings in Geneva, Switzerland. The interface standard, Recommendation J.117, "Home Digital Network Interface Specification" is applicable to HDTV and conventional definition television sets worldwide. Terrestrial and satellite feeds can also make use of this standard, which will eventually be extended to address personal computers and a full compliment of networked devices in the home.

This key interface was specified by ITU-T Study Group 9, the same Telecommunication Standardization Sector ITU study group that was responsible for cable television. Its basis is an existing interconnection technology called IEEE 1394, established by IEEE, based on an inven-