

SMPTE Technical Conference Hollywood, CA

The Technical Program

Marked by a greater awareness of the many changes hitting motion imaging technology, attendance at this year's SMPTE Technical Conference and Exhibition was higher than previous conferences. Backed by a strong program, an expansive exhibit hall, the event was deemed a success. Highlighting the conference this year, was the commemoration of SMPTE's 90th anniversary; a celebration which touched on all aspects of the conference in programming, the exhibit hall, and special events.

Wednesday

The first day of the conference delivered a strong program, giving attendees a choice between two well-planned sessions. The first, "Displays, Processing, and Interconnects for Professional Use," chaired by *Ron Williams*, Landmark, posed the question of whether there's a replacement for the CRT and examined technologies for displaying HD signal formats as CRTs are being phased out. The flat panel, processing, and interconnections for full resolution signal display were also discussed.

The morning's lineup also included a session titled "Film Technology and Archive Futures," chaired by *Andy Maltz*, Academy of Motion Picture Arts & Sciences. This session, which took place in Mann's Chinese Theater, through special arrangement, examined how motion picture film is still the preferred medium for movie production and creation of archival masters. It also offered information on the latest in film technology, as well as the use of film in creating preservation masters of digitally finished motion pictures, and the trends in digital motion picture archives.



Attendees taking in the film restoration session, held in Mann's Chinese Theatre.

Not ignoring technology's end-products, the afternoon sessions commenced with "HD for the Consumer," chaired by *Mark Johnson*, MRJ Consulting. This session investigated the formats that promise to have the greatest impact on bringing HD to the masses, including specific underlying technologies, production techniques, and consumer products. The session concluded with an interesting panel/audience discussion on "the truth" of high-definition optical disk production.

With many modern video systems being built using hybrids of AV and IT technologies, attendees welcomed a session on the "New Infrastructure: AV/IT Systems and Technologies." This session, chaired by *Al Kovalick*, Avid Technology, covered real-time storage systems, video QoS requirements for LAN/WAN, AV and IT tricks, to improve performance, creating efficient workflows in a tapeless environment, and high-availability design methods.

Thursday

Day two of the Conference offered another powerful program lineup. A session on digital cinema led by SMPTE's DC28 Chair *Wendy Aylsworth*, Warner Bros. garnered a lot of attention. Titled "Digital Cinema: The Intermediate Train Has Left the Station," this session showed the heavy involvement of SMPTE and other organizations in the standardization of digital cinema. Although most of these standards have only recently emerged, pioneering cinema post-production studios and facilities have already forged ahead, employing Digital Intermediates for the creation of both celluloid and digital release prints. In the process, they have blazed the trail through a forest of technical and logisti-



Reza Rassool discusses digital watermarking for home entertainment CDNs.



Kilroy Hughes takes part in discussion on high-definition optical disk production.

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cal problems. This session covered many of the problems faced by these trailblazers, and how we can use their experiences to help guide us in the process.

Recognizing that it is not only about the pictures, SMPTE offered attendees a session on "Sound for Pictures: Media in Transition," which was chaired *Lorr Kramer*, DTS. In light of the fact that this is a time of transition and opportunity, this session explored the present and future audio developments that are emerging in this changing environment. Topics included this year's introduction of HD-DVD and Blu-Ray consumer high-definition disk formats, with expanded audio capabilities in channel count, coding quality, and applications. It also covered how these formats relate not only to movies, but to music and games as well. Outside the home, the session touched on how digital cinema commitments



Chair Wendy Aylsworth introduces a speaker in the session on digital cinema.

and installations are accelerating, and how improvements to picture have driven the need for improvements in audio.

Wide adoption of the next-generation image and video compression codecs has begun. Thus, the afternoon session entitled "Compression: The Next Generation Gets Real," gave attendees an in-depth look at how JPEG-2000 is being used to distribute most new features in digital cinema. Chaired by *Michael D. Smith*, MDS Consulting, the session also explored how H.264 and VC-1 are being used for broadband, satellite, and high-definition DVD distribution, as well as the compression-related issues in these new applications.

Safeguarding intellectual property rights is of deep concern, and so "Securing a Promising Future: Content Protection and Anti-Piracy," chaired by *Rob Bauer* and *Jim Williams*, Motion Picture Association of America, brought together leading experts in these two complementary fields. The first, Content Protection, strives to prevent leaks from legitimate distribution channels with technological measures. The second, Anti-piracy, strives to do the same, but also endeavors to thwart illegitimate distribution by means of technological, physical, and legal enforcement. Attendees left this session with a better sense of how consumers are being empowered to get "what they want, when they want it, and how they want it," in a safe, legal, and convenient manner.

Friday

Attendees gathered once again in the Mann's Chinese Theater on Friday morning—what better venue for a session on 3-D.

“The Renaissance of the Stereoscopic Cinema,” chaired by *Lenny Lipton*, REAL D, focused on commercially viable stereoscopic motion picture technology, which was recently introduced and gaining momentum. This session showed how products that are based on this technology use digital projection and electro-optics to overcome the projection difficulties that have inhibited the growth of the medium. Attendees were presented with historical reviews of prior art problems, discussing projection screen technology, camera design, and obtaining stereo content from CGI files. One topic of interest was converting planar assets to stereoscopic images.

“HD for Broadcasting” was an excellent juxtaposition to “HD for the Consumer,” covered earlier in the conference. Chaired by *Sterling Davis*, Cox Broadcast, this session explored the processes and requirements for converting television stations to HD. Addressing newscast, infrastructure, graphics, distribution, and contribution issues that need to be confronted when contemplating the HD conversion, it was concluded that although conversion can be problematic, it is getting easier.

IPTV has become one of the hottest topics in the industry (and it is the theme of our SMPTE/VSF Conference in January, titled “IPTV: End-to-End.” Attendees were given a preview of this event with a view of the latest trends in “Realizing IPTV: Further Issues and Angles on Content Management, Deployment, and Systemization,” chaired by *Steve Wynn*, Sony. The presentations focused on successful navigation of the networked IPTV landscape and how it will require core competencies in AV/IT areas, to have a prudent migration plan, and to keep an open consideration of new business realities. The current realities of IPTV from the production side, the business planning side, and the engineering side were also addressed. Papers included updates from the relevant standards committees, real-world system examples, and lessons learned “on the net.”

Digital acquisition was once an experimental endeavor, but today, more and more professionals are using digital cameras. In “Image Acquisition—Recent Advances,” session chair *Marker Karahadian*, Plus 8 Digital, and presenters discussed the proliferation of



Speaker Peter Centen compares CCD and CMOS imagers.

technologies and implementations, and how the options and scales of solutions have begun to match the requirements of the content. Discussion revolved around the demands of the movie rather than the capabilities of the technology, and attendees left with a deeper understanding of the developing issues.

The SMPTE Film and Television History Day

Peter Hammar

San Francisco Section

The city of Los Angeles and its film, radio, recording, and television industries we call “Hollywood,” treasure their past, so it was appropriate for SMPTE to celebrate its 90th birthday and the 50th anniversary of videotape recording (VTR) in the Hollywood & Highland Center on the storied Tinseltown corner of Hollywood Boulevard and Highland Avenue. The center, which opened in 2001, features a huge open courtyard decorated with elephantine reproductions from the set of D.W. Griffith’s legendary 1916 feature film, *Intolerance*. The entertainment facility adjoins the Kodak Theatre where the Academy Awards show originates, the Renaissance Hollywood Hotel, and the historic Grauman’s Chinese Theater, built in 1927 at the end of the silent-picture era.

On Saturday, October 21, at the conclusion of the 2006 SMPTE Technical Conference & Exhibition, members and guests spent the day listening to some amazing stories of the birth—and occa-



Mike Dolan was the master of ceremonies for the historical seminar.



Former SMPTE President Charles Jablonski kept the audience entertained, as he gave an interesting look back at SMPTE’s long history.



Larry Thorpe gives the history of television at Saturday's Historical Seminar.

sional stillbirth—of seminal motion picture and television technologies dating back to the 1800s. Many in the audience had never seen the rare film and video clips presented by industry pioneers and historians.

After introductions by SMPTE President *Ed Hobson* and Editorial Vice-President *Peter Ludé*, Past President *Charles Jablonski* presented an entertaining history of the Society's first 90 years. The day's master of ceremonies, *Michael Dolan*, continued with an introduction to the early days of motion pictures, including the work of SMPTE founder C. Francis Jenkins.

Film historian *Miles Kreuger* of the Institute of the American Musical in Los Angeles surprised many with stories and clips demonstrating how, as early as 1913, engineers offered the studios and recording labels reasonably good-quality, synchronized sound recording. However, the industry reportedly rebuffed the offer as too revolutionary and a threat to their existing silent-film revenue stream, a half generation before they finally embraced sound in 1926-27 with the dual-system "Vitaphone" process, commercially introduced by the pioneering Warner Brothers studios. Silent movies weren't inevitable: amazingly, the Edison Labs' first film system prototype in 1888 included specifications for "talking pictures." Kreuger showed a 1921 35mm test recording by singer Eddie Cantor, with perfect lip sync and audio quality matching some sound films produced ten years later.

Later that Saturday morning, film gave way to television when long-time SMPTE stalwart and video pioneer in his own right, *Larry Thorpe*, presented an overview of the history of the medium from its earliest days to the present, with special tongue-in-cheek emphasis on how the entire television enterprise would have collapsed without essential aid from the Irish!

The celebration continued in the afternoon, featuring speakers who were present at many of the defining moments in television history. LA network engineers

Ralph Lovell and *Craig Curtis* of NBC West Coast described life at the networks before videotape recording. 35mm kinescope film recorders synchronized to 1/4-in. audiotape machines, with 16mm sound-on-film backup, offered the only way to record television before 1956 for time-delayed broadcasts. Ironically, the networks' excellent recorded audio quality, thanks to the kinescope/audiotape dual system, decreased with the advent of the VTR, whose magnetic record parameters were optimized for the video signal. As so often happens with technical innovation, users accepted a trade-off; in this case, more immediate, better, cheaper, and more practical picture recording for somewhat decreased audio quality.

As the premiere American "color network" in the 1950s, NBC attempted 35mm color kinescoping, an expensive and complicated process, especially since a time-shift recording had to be ready to air on the film chain only three hours after it was made. The high cost of color film suggested the use of lenticular color recording, in which the color information is represented in monochrome form and captured on black-and-white film—faster, easier, and cheaper than color film, although still a cumbersome process compared to a long-hoped-for magnetic recorder of some kind.

The SMPTE History Day continued with *TV Technology* reporter and historian *James O'Neal* describing TV broadcasters' desperate need in the early 1950s for an affordable, reliable videotape recorder. A small but growing magnetic recording innovator, Ampex Corporation, would provide the answer, as explained by historian *Peter Hammar*.

Ray Dolby of the Ampex VTR R&D team, who later founded Dolby Labs, then shared with the audience his personal photos and reminiscences of how the first practical VTR came to be. By 1951, Mullin/Crosby, RCA, and the BBC were already in the race, but Ampex would win five years later. VTR project leader



Ralph Lovell and Craig Curtis of NBC, recall their earlier days in the business.



Pioneer Ray Dolby reflects on the early development of the VTR.

Charles Ginsburg, Ray Dolby, and the four other team members—Alex Maxey, Charlie Anderson (later a SMPTE President), Fred Pfof, and Shelby Henderson—overcame a series of technical challenges and in 1956 introduced the VRX-1000 videotape recorder, the prototype of the Ampex VR-1000 production VTR. With its rotating-video-head technology and vestigial-sideband FM recording, the machine fundamentally changed television broadcasting and production.

The SMPTE History Day wrapped with a fascinating panel discussion led by Ed Hobson and featuring Craig Curtis and Ralph Lovell of NBC, Charles Cappleman of CBS, Joe Maltz of ABC, Ray Dolby, and Bill Barnhart of Ampex and later Grass Valley Group. Barnhart was involved in designing the first Ampex color VTR in 1958 and was present in Moscow in 1959 at the famous Nixon-Khrushchev “Kitchen Debate” caught on a color Ampex VR-1000B and broadcast the same day in America, after an Ampex executive smuggled the tape out of the Soviet Union.

During the panel discussion, the three network engineers reminisced about the impact of videotape recording on their daily operations and on the shows themselves, when TV broadcasting went from “live” to tape, a dramatic change for both crew and on-camera talent. An enthusiastic question-and-answer session

between the panel and the audience concluded the afternoon.

Throughout the day, attendees were invited to visit the “mini-museum” set up in the adjacent room. The story about the museum follows this report.

The SMPTE Film and Television History Day was organized by Bill Hogan, Tom Scott, Don McCroskey, Michael Dolan, Mark Schubin, James O’Neal, Peter Hammar, Larry Thorpe, Peter Ludé, and David Juhren.

The event was videotaped—who says tape is dead?—by Plus 8 Digital of Burbank, CA, who generously donated their services. The Society plans to make an edited version available for sale on DVD—also a mark of the times! Please watch this space and the www.smpte.org website for news about program availability.

The SMPTE “Mini-Museum”

For the SMPTE History Day, volunteers set up a small museum of industry artifacts that cast, in three dimensions, the presentations in the adjacent room about motion-picture engineering accomplishments during the past 100 years.

The display was organized by Bill Hogan and Don McCroskey of the SMPTE Hollywood Section; Peter Ludé, Sony; and Tom Scott, OnStream Media, of the San Francisco Section. Members and friends also helped, including Dan Sherlock, Julio Vera, and Nicholas Berg of the Academy of Motion Picture Arts and Sciences; Peter Anderson of the American Society of Cinematographers; Herb Farmer of the University of Southern California; Rob Frazier, John Streets, Merlin Engineering; and Gary Tomsic, KCRA, of the SMPTE Sacramento Section. Sony provided the display furniture.

Museum visitors expressed amazement at the intricacy and precision of the century-old film equipment.

SMPTE Documents Film/Television History

The history timeline of selected film and TV historical highlights running across the bottom of the pages of the Conference Guide booklet represented only a first draft. In a new history section planned for the Society’s website at www.smpte.org, we hope to enhance this timeline with ongoing corrections and additions from SMPTE members and friends who will be invited to post their comments and suggestions. We hope the timeline will become a standard concise reference for teachers, students, journalists, and others interested in the fascinating history of our industry.



A sample from the draft timeline in the Conference Guide



Attendees stop by to see the SMPTÉ mini-museum.



Vintage cameras displayed in the museum.



This piece of equipment in the museum was specially designed to film the underwater segments of "The Creature from the Black Lagoon."

case, hand-cranked, two-color camera (1916); a Fox Grandeur 70mm two-color camera (ca. 1920); Kodak's earliest 16mm Model A camera (ca. 1922); a Vitaphone turntable for dual-system "talking pictures" (1926); a Fox "rackover" camera (1941); and an Auricon prototype 16mm sound-on-film news camera (ca. 1950), among other pieces on display.

As the state of the art progressed, Hollywood studios benefited after World War II from an array of mechanically sophisticated film cameras that shot a wide variety of film formats, many of them widescreen with multichannel sound. With commercial television growing rapidly in America in the early 1950s, motion picture theaters attracted TV-distracted audiences with Cinerama, CinemaScope, Todd-AO, and Panavision, just four of the complete assortment of format samples on display.

Throughout the 20th Century, motion picture engineers accomplished impressive technical feats, such as the complex underwater camera rig on display that was used to shoot the famous 3-D feature, *The Creature from the Black Lagoon* (Universal, 1954).

These and other technical icons offered a graphic display of the accomplishments of an industry that calls Hollywood its home.

Special Events

Anniversary Bash

Following Wednesday's sessions, attendees were transported to Warner Bros. Studios, the venue for the SMPTÉ Anniversary Bash celebration, sponsored by

T e x a s Instruments, DLP Cinema, and Warner Bros. The lavish, SMPTÉ 90th anniversary gala was followed by a special screening of Martin Scorsese's recently released film, *The Departed*.



SMPTÉ Executive Director Kimberly Maki and SMPTÉ President Ed Hobson.



Attendees mix and mingle at the anniversary bash.



The Annual Industry Luncheon.

Industry Luncheon

Thursday's morning sessions ended on schedule for the Annual Industry Luncheon. Keynote speaker, *Bill Hudson*, director of business and market development, professional applications marketing at Apple Computer, delivered an interesting address, which highlighted Apple, showing attendees a comical commercial. Attendees dined on sumptuous fare, while sharing information, business cards, and socializing with colleagues before resuming to the afternoon sessions.

Honors and Awards

On Friday, October 20, attendees gathered in the Hollywood Renaissance ballroom to recognize those who have made outstanding achievement and contribution to the motion picture and television industries. Awards included the SMPTE Progress Medal, the Eastman Kodak Gold Medal Award, The Technicolor/Herbert T. Kalmus Gold Medal Award, The



L-R: SMPTE President Ed Hobson; Jacob Nelson, this year's Lou Wolf Scholarship award winner; and Barbara Wolf, wife of Lou Wolf.

David Sarnoff Medal Award, The Samuel L. Warner Memorial Medal Award, The SMPTE Journal and Award and Certificate, the Citation for Outstanding Service to the Society, the Society Citation, and the Lou Wolf Memorial Scholarship Award. Congratulations to all the award recipients.



Charles Swartz received the prestigious Society Citation.



Snell and Wilcox founder Roderick Snell, received the SMPTE Progress Medal Award.

Fellows Luncheon

The Fellows Luncheon was held on Saturday, October 21, and 12 members joined the ranks of SMPTE Fellow. Keynote Speaker *Wendy Aylsworth*, also a SMPTE Fellow, and Chair of the DC28 Committee discussed SMPTE's international involvement in the standardization of digital cinema.



Wendy Aylsworth addresses Fellows at the Annual Fellows Luncheon.



SMPTE Fellows at the Annual Fellows Luncheon.



Lawrie Read of BKSTS, presents Honorary Fellowship to Ed Hobson.



New SMPTE Fellows pose for photo, shortly after their induction.

Ed Hobson Awarded Fellowship to BKSTS

During the Honors and Awards Ceremony on Friday, October 20, SMPTE President *Ed Hobson* was unexpectedly presented with a Fellowship to the British Kinematograph, Sound and Television Society (BKSTS) by *Lawrie Read*, former president of the BKSTS.

Ed has over 35 years of experience in broadcast engineering and operations. He has had a broad and distinguished career in the industry, with experiences in many companies and organizations, including Grass Valley, Sony, Omneon, and currently National TeleConsultants (NTC). He is no stranger to the U.K., or BKSTS, having worked as manager of the Grass Valley Group U.K. Sales office from 1988 to 1990. He recently joined the BKSTS, and was one of the architects of the renewed collaboration between BKSTS and SMPTE.

The BKSTS Fellowship is presented to "Any Full Member of the Society who, by research or invention, has advanced the application of film, television, and allied disciplines within the industries served by the

Society, or who have made an outstanding contribution by service, leadership or example..."

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