

Section Meetings

Atlanta

March 14, 1998

The section's March seminar held at Georgia Power was a great success. Section Chair Paul Hogan, Leitch, Inc., started the event by addressing the more than 75 attendees. He then introduced Michael Isnardi, Sarnoff Corp., who presented a paper titled "On the Road to DTV, Putting the Bits Together."

Dave Walters, Snell & Wilcox, followed presenting a paper on the issues associated with upconversion to HDTV, downconversion to SDTV, and methods to minimize the effects of successive MPEG compression and concatenation.

After lunch was served, Brett Jenkins, Comark, presented a paper dealing with issues associated with the broadcast and testing of DTV transmission systems.

Southern Region SMPTE Governor Clyde Smith, Speer Worldwide Digital Consulting, discussed the suitability of AC-3 for use in the studio environment, issues related to processing 5.1 or more channels throughout the plant, and initiatives in progress to resolve related issues.

Smith concluded the meeting with a panel discussion focused on the implementation of HDTV. Members of the panel, along with Jenkins and Walters, were Graham Jones, Harris Corp.; John Swanson, Cox Broadcasting; Tom Beauchamp, WRAL; and Rick Ackermans, Turner Entertainment.—J. Rhett Mappin (Secretary/Treasurer), Pinnacle Systems, Inc.

Atlanta

April 20, 1998

Mike Woody, Discreet Logic, presented his company's solution for resolution inde-

pendent media creation and processing to an audience of 30. Smoke and flame were demonstrated on SGI's octane along with Flinton 0².

During the presentation, Woody provided an overview of Discreet Logic's vision for digital television and high-definition television. Questions on various high-definition issues were answered following the presentation.—J. Rhett Mappin (Secretary/Treasurer), Pinnacle Systems, Inc.

Chicago

April 21, 1998

More than 40 guests attended the joint meeting of the Chicago chapters of SMPTE, SBE, and ITS, held at Skyview Film & Video. The program focused on the use of the Windows NT operating system on Intel-based computing platforms for general post-production applications.

Guest speaker Bill Farnsworth, Intergraph Digital Media Division, began the presentation by giving background information on his company and the work being accomplished in his digital media division. Intergraph emerged from work being done to provide bundled software and hardware solutions to the CAD market. The apparent need to solve problems with moving images and synchronized audio gave rise to his division. The original post-productions were modeling, animation, and rendering; now nonlinear editing and compositing are equally important capabilities. Through the development of open standards such as OpenGL and PCI bus architectures, Intergraph was able to acquire the "best-in-class" design to fulfill the demanding requirements of digital media creation.

Concluding the presentation, Farnsworth reviewed a list of partners who offer software applications and hardware boards such as graphics accelerators and video I/O for post-production use. Several questions were asked concerning the ability of these systems to move multiple streams of uncompressed video.—Steve Robinson (Secretary/Treasurer), Serial Scene

Detroit

April 14, 1998

Two years in planning, the April meeting featured a tour of Chrysler's technical

SMPTE SECTION CALENDAR

Rocky Mountain

For further information contact Section Chair Fred Baumgartner, TCI, tel: (303) 486-3946, fax: (303) 486-3891, e-mail: baumgartner.fred@tcinc.com

Dates for future meetings

July 22: Lookout Mountain Picnic
August 19: Presentation of encoder for ATSC DTV application
September 16: TBA
October 16: TBA
November 18: SBE Elections

San Francisco

For further information contact Section Chair Charles R. Hintz, KTVU Partnership, Inc., tel: (510) 874-0290, fax: (510) 272-9957, e-mail: chasinca@aol.com

1998 Second Saturday Full-Day Seminar

August 8: "Perception: Hearing and Seeing," at Dolby Laboratories
September 12: "Video Compression for All," at Stanford University
October 10: "HDTV, DTV, and the Painful Alternatives," at Stanford University

Toronto

For further information contact Promotions Adviser Brad Fortner, Rogers Communications Center, Ryerson Polytechnic University, tel: (416) 237-0625, fax: (416) 979-5203, e-mail: bfortner@acs.ryerson.ca

Dates for future meetings

August: New Board of Managers Meeting
September 8: CTV N1
October 13: Television Networks Using Public Fiber Networks
November 10: TBA
December 8: TBA



From left to right: Graham Jones, Brett Jenkins, Rick Ackermans, Clyde Smith, John Swanson, and Tom Beauchamp.

center in Auburn Hill, MI, one of the world's most technologically advanced motor vehicle design facilities. Chrysler has organized its design center by "platform" or type of vehicle, giving engineers complete access to technical data and to each other to facilitate planning and development of vehicles. All aspects of product development from concept to initial manufacturing take place at the 504-acre site located 30 miles north of Detroit.

The 19 attendees first visited the center's computer facilities, which houses several IBM mainframes and SP-2 computers, two Cray supercomputers, and numerous Silicon Graphics servers, providing employees with free exchange of design data. The technical computer operations center is the control point for all servers, as well as the technical help desk service, where telephone consultants answer questions about the computer systems.

In Competitive Product Analysis, actual vehicles from other manufacturers are meticulously disassembled, parts are cataloged and analyzed, photographs are taken, and the data is entered into a computer database so designers and engineers can compare other cars to Chrysler's products and see how other manufacturers are solving some of the common problems in the auto industry. Each part's data and photograph are available throughout the center on the company's Intranet service, and parts can be checked out for physical examination if needed.

The noise, mechanical vibration, and harshness lab subjects cars and assemblies to various types of physical vibration to test their performance under different conditions. There are dynamometers for running cars at various speeds indoors, modal analysis for determining resonant frequencies, and sound analysis, to determine performance in a quiet-room environment as well as by exposing a vehicle to high levels of sound to measure sound transmission and turn up potential problems.

Cars and parts are bombarded with RF at fields up to 200 V/meter in the electromagnetic compatibility lab. Three shielded rooms test vehicles' electrical and computer systems for the effects of RF at frequencies in fields at 60 Hz and continuously from 20 kHz to 18 GHz. Data is collected and transmitted from the room via optical fiber to avoid interference with or from the RF field and to measure RF radiated from a vehicle's electronics. The room is so RF-tight that members carrying cellular telephones noted that they indicated out-of-range while in the room.

The tour concluded with a visit to the new teleproduction facility located in the Amphitheatre, where Chrysler has provided extensive facilities to allow television broadcast stations to originate news coverage.—Frank Maynard (Secretary/Treasurer), WKBD-TV

Florida/Caribbean

April 20, 1998

The April meeting, attended by 50 people, was a wrap-up on the recent National Association of Broadcasters Convention (NAB98) held on April 4 to 10, 1998 at the Las Vegas Convention Center in Nevada. The program was a teleconference linking several locations in the Florida area. Participating sites included WUFT-TV in Gainesville; the Kennedy Space Center in Titusville; WJXT-TV in Jacksonville; Speer Communications in Nashville; Century III in Orlando; and WFTS-TV in Tampa. Several topics were discussed during the meetings. A discussion on videotape formats touched on the various digital formats shown at NAB98. Headlife on Digital Betacam Recorders examined the fact that many users report shorter than expected head life, particularly when also using analog tape for playback. Mole Technology, which is expected to be further developed for use owing to Sony and Thomson's licensing with Snell and Wilcox was also talked about. Additional topics included bitsplicing problems in the digital data stream; differing DTV formats at the network level; lack of cable ready sets for DTV; the Apple G-3 Macintosh; the Snell & Wilcox motion eliminator; virtual set and DVCPRO interchangeability problems; digital Betacam SX, linear versus nonlinear editing; and plasma and flat panel displays.—Bill Hillier (Manager), United Space Alliance

New York

April 22, 1998

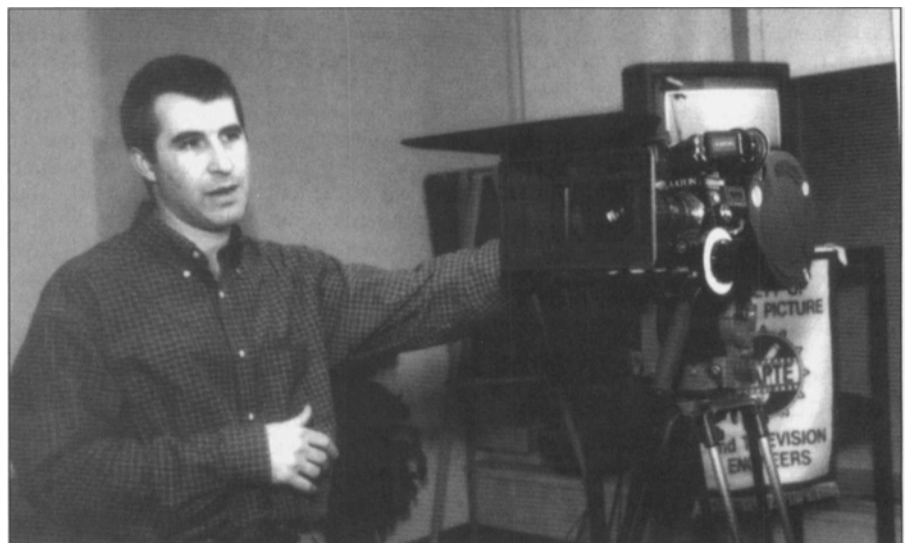
Seventy members and guests gathered for April's three-part meeting covering related topics. The event was hosted by

Eastman Kodak Co.

Guy Denim, ZGC, began by describing the features of a family of sharpness indicator charts, which can be used for testing any optical system including the human eye. The charts consist of black and white concentric circles of varying spacing used for evaluating optical system sharpness and frequency response. Readings are objective and repeatable because the circles "pop" into view when resolved by the optical system and disappear suddenly when out of focus. Both motion picture and television systems were used to demonstrate the charts, which are being marketed by SMPTE.

Peter Abel, CinTech, followed by describing the new Aaton XTR prod Super 16 camera system with a new 800 ft capacity film magazine. He explained the design consideration in maintaining compatibility with other Aaton cameras as well as the product's dramatic impact on organizations deciding between video and film origination. The camera-magazine system results in less "roll-out" interruption on the set; fewer magazine changes, film reports, and short ends; and less labeling. The low power consumption of the entire system gives the filmmaker increased flexibility.

Steve Garfinkel and Bob Strickland, both of Eastman Kodak Co., then announced the motion picture film products which complement the new Aaton film magazine. They include a series of Super 16 film stocks in the 800 ft length. The seven color negative stocks range in film speed from ASA 50 to ASA 640 and include a low contrast stock, Primetime 640T Teleproduction Film. The film stock's lower overall contrast capture results in a wide latitude of scene information accessible through a telecine. It is calibrated to the spectral response of the telecine system,



Peter Abel discusses the new 800 ft magazine for the Aaton XTR camera at the New York Section Meeting.

resulting in more accurate rendering of colors and tones with a tungsten exposure index of 640. These 800 ft rolls now permit 22 min of nonstop filming.

All four speakers stayed after the meeting allowing the audience time for hands-on viewing of the products.—Ed Schuller, (Test Materials Adviser)

Ohio April 30, 1998

Bill Zou, General Instruments, presented a program on ATSC DTV standards to the members of SMPTE Ohio Section and the SBE at April's meeting. The program was hosted by Debra Grivois, WCMH-Channel 4.

Zou is manager, technical business development, at the San Diego-based Satellite Data Network Systems of General Instrument Corp. His responsibilities include developing technical specifications and requirements for new product development, end-to-end systems solution, and technical marketing. He coordinates his company's involvement in industry standards and contributes to new business development in areas involving new technology such as HDTV.

Before the presentation, a light repast was enjoyed by the 40 attendees from various parts of the state as they visited with their peers and met the new student members from Hocking College in Nelsonville, OH. Jenna Draper, the coordinator and founding president of the Forming Student Chapter, described her experience, which shared by her fellow students.

"I felt for the first time since I have been in college, I can see a clear direction in my career objectives," she said. "Most of my associations up to this time have been with those who, like me, are struggling to get their careers off the ground. At the SMPTE meeting I felt a real sense of support and recognized a resource for my professional development."

After the presentation, Grivois and her staff conducted tours to demonstrate new state-of-the-art innovations at Channel 4. She also informed the students of four part-time entry-level positions at Channel 4 which will be posted on their new SMPTE Ohio Student Center web site scheduled to go online by June 1 at (<http://www.frognet.net/~smpteoh>).—David Prince, (Section Chair), Prince & Associates

Pasadena City College March 10, 1998

Pasadena City College (PCC) alumnus Brad Hayes, Digital Muse, was the guest speaker at March's first section meeting. He began his talk by telling the students a little about his background. As a student, Hayes started taking classes in radio broadcasting. He then taught himself how

to create 3-D animation as a hobby and decided to take more classes in video at PCC rather than just radio. After graduation in 1991, Hayes went on to work at Disney in the video field before finding a position at Digital Muse—a digital post-production company that primarily does 3-D animation. Hayes used his experience with his hobby to apply for a position as an animator at the company.

He then ran a demo reel of Digital Muse, showing a large amount of creativity and had stunning quality. Hayes told the students a little about the software he uses at the company, called Light Wave. Light Wave is used to model and render the 3-D animation scenes for all of their productions.

Many of the students asked how they could prepare for a career in the 3-D animation field. Hayes said his philosophy is to "take all you can get your hands on and use it to the fullest." He also suggested that the students should concentrate on learning more than just computer skills.

"The more diverse your background, the better," said Hayes. He elaborated by saying that the video classes at PCC gave him the ability to handle many different aspects of production and would give the students a broad background in the industry qualifying them to handle many different job opportunities.—Josh Ochs, Chair

Pasadena City College March 24, 1998

March's second meeting featured guest speaker Dave Keleshian, $E=MC^2$. He opened the meeting with a summary of his post-college work experience. As a colorist with $E=MC^2$, Keleshian is in charge of making color corrections while transferring film to video. Using a chalk board, he demonstrated the "3-2 pull down" procedure and explained the three levels of correction adjustments made during the transfer process. In his explanation of the adjustments for black, gamma, and lift, he emphasized how each was necessary for the look achieved in a video picture. Keleshian closed by telling the audience "a good education will help you conquer many of the tough obstacles you will find in the real world."—Josh Ochs, Chair

Toronto April 14, 1998

The Shoppers Drug Mart Omnimax Theater at the Ontario Science Centre played host to over 120 SMPTE Toronto Section members who were given a behind-the-scenes look at how thrill rides are created. Moderated by Gordon Harris, Imax Corp., the April meeting featured presentations from those who worked on the new Race for Atlantis thrill ride at Caesars World in Las Vegas and Imax's 1994 Asteroid Adventure.

A screening of the thrill ride The Science of Fun set the foundation for the evening's subjects covering the construction of Omnimax theaters and the creation of thrill rides. The Science Centre's Omnimax contains a dome-shaped screen that differs from the flat surface found in Toronto's other Imax theater located at Ontario Place. The evening opened with a demonstration of the technology employed in the theater focusing on the embedded sound system. Imax theaters employ a film stock as much as ten times larger than standard theaters and use six channels of audio to reproduce sound.

According to the movie, the modern day rollercoaster on which thrill rides are based was first constructed in 1804. Rollercoasters were created to fulfill Catherine the Great's desire to ice-sled all year long. Thrill rides came about by employing the hydraulic and computer systems of modern flight simulators and when combined with film images they create a "rollercoaster of the mind." Studies have shown that the quality of image and sound is important in creating the illusion, thus Imax thrill rides project images at as much as 60 frames/sec.

The first speaker of the evening was Ken Baker, Imax. He discussed Imax's experience in the field of thrill rides. His company's foray into this medium occurred several years earlier with the Back to the Future ride installed in both Los Angeles and Florida. The rides are constructed inside an Omnimax theater that employs several motion bases. Imax's Race for Atlantis is also built in an Omnimax theater, however this ride employs Imax 3-D technology. The technology requires special glasses that are synchronized to 48 frame/sec film to provide the desired 3-D effect. The glasses challenged Imax engineers in areas of screen brightness and the science of dealing with the curved surface of the Omnimax screen. These glasses obtain their synchronization data via an infrared signal generated in the theater.

In Las Vegas, multiple-motion bases that carry 27 people each are used during performances. This gives the attraction a throughput of about 1,000 people per hour. The 3-D Imax film, which is the focal point of the attraction, was created using computer graphics. Like all Imax films, the scale that one works with in this medium staggers the imagination. Baker concluded his presentation by reporting that the 3 1/2-minute film is composed of 5,000 frames that took over 5,000 hours to render. Some individual frames took as long as 60 hours. The images required 1,700 Gbytes of storage and the film took 18 months to complete.

Andrew Lee, Imax, was the evening's second speaker. Lee's job involved overseeing the construction of the specially

designed Hi-Gain Dome Screen required for the Race for Atlantis thrill ride. He explained how 400 panels are manufactured to make up an Omnimax screen. Most Imax patrons are surprised to learn that the screens are not pure white because that causes the image to wash out. Instead Hi-Gain screens employ barium sulphate to give them their enhanced characteristics. Since the different panels are not completely homogeneous, one of Lee's responsibilities was tuning the screen during installation. To accomplish this he used a computer to sort out deviations in each panel, carefully matching the placement of panels and cautiously putting the most reflective panels along the edges for more brightness.

The final speaker of the evening was Lorne Orleans, also from Imax. Orleans directed Asteroid Adventure, Imax's second thrill ride. He noted that on a cost per minute basis, ride films are among the most expensive films made. He recalled reading an article which noted that the 3-1/2 min film that makes up Imax's Back to the Future ride cost about \$16 million to produce. This is equivalent to a feature film budget of about \$600 million.

As a director, Orleans shared his observations for those considering working in the medium. He noted that a point of view shot is required from beginning to end in a thrill ride film. Cutaways, common in most other motion imaging media, do not work well in this environment. Because

image quality is important, high-definition images, such as those created by Imax, are perfect for thrill rides. He also noted that it takes a small amount of motion to create a sensation of motion and peripheral vision is important to the effect. He said most of the research into the visual phenomena associated with thrill rides has been conducted by the military and poor programming of the motion base can cause nausea. During the creation of Asteroid Adventure, he employed a puppeteer to program the movements of the base and gain acceptable realism for riders.— Brad Fortner, (Promotions Adviser), Rogers Communications Centre, Ryerson Polytechnical University

News

Program for TV Montreux 1999 Announced

Montreux has announced the program for the 1999 International Television Symposium and Technical Exhibition to be held on June 10-15, 1999 in Montreux, Switzerland. The five-day event has been designed to provide every business and senior management executive with answers to questions concerning television's transition to the all-digital era.

This year's 21st Symposium features the following technical sessions:

Program Production

Digitization of the production process has presented the producer with new creative options and technical challenges to implement them. This session will focus on the many issues involved, including image acquisition in a 16:9 aspect ratio; the processing of digital streams with different bit rates for HDTV and SDTV productions; simultaneous HDTV/SDTV production; management and accessing of content libraries and program production in the virtual studio.

Post-Production

This session will cover the technical and business issues faced by the post industry in the three global regions, owing to the implementation of DTV and HDTV programming. Topics include how to post for worldwide applications and meet the requirements of terrestrial, DTH and cable; innovations in HDTV post-production; up- and down-conversions; servers and networks for post-production; and digital and audio post and distribution of multichannel audio programs.

Cable

Cable's wide bandwidth has made "TV of abundance" a reality. In order to retain that advantage in the hybrid digital and analog world, many technical and economic issues must be resolved. Experts in the field will present eight comprehensive sessions covering digital service implementation; Intranet; the media terminal; regulatory environment; marketing; research; HDTV; advanced analog services; and interactive services.

Terrestrial Broadcasting

To survive in a competitive multichannel marketplace, digital terrestrial broadcasting must overcome technical, regulatory, and marketing challenges. This session will address topics such as experience with the ATSC, DVB, and DVB-J broadcast systems in the transmission of HDTV and SDTV; cost aspects of network and station operations; the regulatory environment; and value added services including data broadcasting and the Internet.

Satellite Broadcasting

This session will update the status and prospects for various satellite services. A comparative assessment of distribution platforms in terms of the digital technology and economics involved, and DTH satellite delivery services of local terrestrial broadcast channels, datacasting, multicasting, multimedia, and other services will be covered.

Interactive Media Services

Reacting to the intense competition for consumer attention, programs and data services are now being provided via the personal computer by program providers,

broadcasters, and cable operators. Four sessions will examine this movement focusing on the operation of interactive services; personalizing broadcasting through the Internet; and mobile interactive broadcasting. Internationally recognized business and technology experts will also focus on leveraging existing businesses to add value through the creation of new interactive services.

Workshops and News Operations

The workshops, geared toward industry experts, will deal with specific matters in the areas of production, post-production, cable and terrestrial delivery, and interactive services. The news session will cover the gathering of news from different sources and its transport to the main facility; and preparing material on a "virtual" desktop for on-air use and for repurposing and using all techniques, from the simplest to the most sophisticated for the most attractive presentation.

Future Technology and Management Forums

The Future of Technology Forum will feature two sessions focusing on the new digital world for television. Topics of discussion include the impact of emerging technology on the whole business chain and the cross fertilization between the elements. Also discussed will be the future technology applied to the storage, archiving, and retrieval of program material, and the digital data structure and software which support it.

This year's management forum will carry the theme "First Management Reports on Digital TV and HDTV Experiences Worldwide." Designed for business, cre-