



The 129th Technical Conference attracted a record crowd.

## The 129th SMPTE Technical Conference

The 129th SMPTE Technical Conference and Equipment Exhibit, held October 31 to November 4, 1987, in Los Angeles, Calif., was a significant event in the industry. A record crowd of more than 17,000 was attracted to the conference and exhibit, which was held in the Los Angeles Convention Center.

A total of 148 papers were presented at the technical sessions, on the theme "Imaging and Sound — Today and Tomorrow." Because of the large number of presentations, the technical program began on Saturday and was divided into several concurrent sessions. In addition to the papers presentations, one of the highlights of this conference was the continuous screening of HDTV material on Sunday and Tuesday. The demonstrations, which included material from many corners of the world, were jointly sponsored by the SMPTE and the Motion Picture and Television Society of Japan (MPTEJ). The films, which were originally produced on HDTV and then transferred to 35mm film, were impressive in their technical and artistic quality.

The equipment exhibit had been completely booked by early June, and it was necessary to add more space for companies asking to participate. A total of 261 companies, representing seven countries, occupied 796 booths covering 79,575 ft<sup>2</sup> of the Convention Center. The exhibit attracted a constant stream of visitors, and was open Saturday through Tuesday.

The conference was officially opened by SMPTE President M. Carlos Kennedy, Ampex Corp., who gave the opening address after being introduced by Program Chairman Frank Haney, Capital Cities/ABC, Inc. Next, SMPTE Engineering Vice-President Richard G. Streeter, CBS Broadcast Group, delivered an engineering report. A keynote address by Daniel E. Slusser, Universal City Studios, concluded the opening portion of the program. The text of these speeches appears in this issue.

The conference was under the overall supervision of SMPTE Conference Vice-President Blaine Baker, MPL Inc. The technical program was directed by SMPTE Editorial Vice-President Howard T. La Zare, Deluxe Laboratories, Inc.

The meeting was a very successful one, due in large part to the efforts of the various committees and their chairmen. Program Chairman Frank J. Haney, Capital Cities/ABC, Inc., and Program Vice-Chairman Edward J. Burns, Eastman Kodak Co., were responsible for putting together an interesting and informative papers program. They were assisted by the following Topic Chairmen: *Archival*, John Belton; *Fiber Optics*, Birney D. Dayton, Grass Valley Group; *Television*, Michael T. Fisher, Capital Cities/ABC, Inc.; *ESbus Applications*, Thomas B. Meyer, Dynair Electronics; *The Digital Decade*, C. Robert Paulson, Artel Communications; *Enhanced NTSC/Compatible*

*HDTV*, Kerns Powers, David Sarnoff Research Center; *Film and Audio*, Frank R. Reinking, Eastman Kodak Co.; *Computer-Aided Design Panel Discussion*, Irving S. Rosner, Rosner TV Systems; *Beyond the Cathode Ray*, Robert S. Woolman, Eastman Kodak Co.

General Arrangements Chairman Michael V. Chewey, Systems Unlimited, was in charge of the many non-program aspects of the conference. He was assisted by the following chairmen: *Facilities*, Charles Kircher, Foto Kem Industries; *Banquet/Entertainment*, Louis F. Wolf, Jr., Universal City Studios; *Display*, Julian D. Hopkinson, Agfa-Gevaert, Inc.; *Registration*, Fred Godfrey; *Membership*, John Aalto, National TeleConsultants; *Hospitality and Information*, Gerald Finn, Pasadena City College; *Opening Films and Tapes*, Ron Little, Consolidated Film Industries, and Sharon O'Brien, Eastman Kodak Co.; *PA and Recording*, Richard J. Stumpf, Universal City Studios; *Audio Visual and Projection*, Don V. Kloepfel, Kloepfel Associates; *Video/Papers Facilities*, Gus Dato; *Transportation*, Don McCroskey, ABC (ret.); *Hotel Arrangements*, Milt Shefter, Novo Communications, Inc.; *Assistant Auditor*, Gordon C. Cory, NV Systems; *Spouses' Program*, Judith Chewey; *Awards and Fellows Luncheon*, Craig Curtis, NBC; *HDTV Film Festival*, Richard J. Stumpf, Universal City Studios, and Nabu-

The Society wishes to thank both Pyramid Film & Video and UCLA Film & Television Archives for presenting the opening films for the SMPTE conference sessions. The films from UCLA Film & Television Archives were selected from the vast holdings in Los Angeles that have grown to become the nation's largest collection of

film and broadcast material outside the Copyright Repositories in Washington, D.C. For further information contact: UCLA Film & Television Archive, 1438 Melnitz Hall, UCLA, Los Angeles, CA 90024, telephone (213) 206-8013; or Pyramid Film & Video, Box 1048, Santa Monica, CA 90406-1048, telephone (213) 828-7577.

ernors Reception sponsored by Dolby Laboratories, Inc., and a general reception sponsored by JVC Corp. of America.

On Sunday, the Fellows Luncheon was held, honoring the new Fellows of the Society. A reception sponsored by Magna-Tech Electronics Co., Inc., preceded the luncheon. Former SMPTE President John G. Frayne delivered a speech on the history of the Society.

On Tuesday evening, the traditional banquet and dance was held in the California Ballroom. Guests enjoyed a pre-banquet reception sponsored by Ampex Corp.; entertainment courtesy of Film Processing Corp./Riviera Broadcast Leasing; flowers courtesy of Foto Kem Industries; and wines courtesy of NBC, Inc. Spouses of those attending the conference had the opportunity of enjoying a full program of activities geared to the West Coast.

Further details of these conference events will follow.

tada Yagi, Motion Picture and Television Engineering Society of Japan (MPTEJ).

In addition to the technical program and the exhibit, a full program of social activities was available for those attending the conference. A press briefing was held on Friday evening in SMPTE President Carlos Kennedy's suite at the Westin Bonaventure Hotel. Following the press briefing, Eastman Kodak Co. sponsored a reception for registrants in the

hotel's California Ballroom. During the entire conference, attendees enjoyed a coffee club sponsored by Fuji Photo Film U.S.A., Inc.

The annual Honors and Awards Luncheon was held on Saturday, October 31, in Petree Hall of the Convention Center. Guest speaker at the luncheon was Jean Firstenberg, director, American Film Institute, after whose speech the recipients of the various awards were introduced. Preceding the luncheon were a Board of Gov-

### Conference Committee — Program Chairmen

#### Editorial Vice-President

Howard T. La Zare, *Deluxe Laboratories, Inc.*

#### Program Chairman

Frank J. Haney, *Capital Cities/ABC, Inc.*

#### Program Vice-Chairman

Edward J. Burns, *Eastman Kodak Co.*

#### Topic Chairmen

*Archival*, John Belton

*Fiber Optics*, Birney D. Dayton, *Grass Valley Group*

*Television*, Michael T. Fisher, *Capital Cities/ABC, Inc.*

*ESbus Applications*, Thomas B. Meyer, *Dynair Electronics*

*The Digital Decade*, C. Robert Paulson, *Artel Communications*

*Enhanced NTSC/Compatible HDTV*, Kerns Powers, *David Sarnoff Research Center*

*Film and Audio*, Frank R. Reinking, *Eastman Kodak Co.*

*Computer-Aided Design Panel Discussion*, Irving S. Rosner, *Rosner TV Systems*

*Beyond the Cathode Ray*, Robert S. Woolman, *Eastman Kodak Co.*

### Conference Committee — General Arrangements

#### Conference Vice-President

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#### General Arrangements Chairman

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Ron Little, *Consolidated Film Industries*

Sharon O'Brien, *Eastman Kodak Co.*

#### PA and Recording Chairman

Richard J. Stumpf, *Universal City Studios*

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#### Video/Papers Facilities Chairman

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Milt Shefter, *Novo Communications, Inc.*

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Gordon C. Cory, *NV Systems*

#### Spouses' Program Chairwoman

Judith A. Chewey

#### Awards and Fellows Luncheon Chairman

Craig Curtis, *National Broadcasting Co.*

#### HDTV Film Festival Chairmen

Richard J. Stumpf, *Universal City Studios*

Nabutada Yagi, *Motion Picture and Television Engineering Society of Japan*

# Opening Ceremonies: Imaging and Sound — Today and Tomorrow

Conference proceedings began on Saturday morning, October 31. To a standing-room-only crowd assembled in Room 217-A of the Convention Center, Program Chairman Frank Haney, Capital Cities/ABC, Inc., delivered brief introductory remarks, then introduced SMPTE President M. Carlos Kennedy, Ampex Corp. Kennedy's opening address recapped the SMPTE events of 1987, a year in which the organization actively participated in technical symposiums and meetings abroad, received an Emmy Award for engineering achievement, and added more and more individual and sustaining members to its rolls.

The opening session also included

an engineering report by Engineering Vice-President (at that time) Richard G. Streeter, CBS Broadcast Group, and a keynote speech by Daniel E. Slusser, Universal City Studios, Inc. In his speech, Slusser, vice-president and general manager at Universal, assessed the current state of the film and television industries and stressed how the SMPTE could enhance its role as a service organization to these businesses. In particular, he called on the Society to increase its educational programs for engineering students. Slusser's address was widely discussed at the conference and was in demand as an audio tape. The texts of the keynote address and engineering report appear on the following pages.



*Program Chairman Frank Haney making introductory remarks.*

## Opening Address

**By M. Carlos Kennedy, SMPTE President**

Distinguished guests, fellow members, ladies and gentlemen, good morning and welcome to the 129th SMPTE Technical Conference and Equipment Exhibit. It is my distinct pleasure as President of your Society to declare this year's conference as being officially open, and I am certain the 129th will rank as one of our most successful conferences.

It has been an exciting year for the Society and its supporters around the world. As your President, I have had the privilege of being at the center of much of this excitement, and I would like to share a few highlights with you. The SMPTE has had the opportunity to further its aims and serve its membership and industries both at its own conferences, as well as at industry events both here and abroad.

The 21st Annual Television Conference in San Francisco this past winter, along with the unusually good technical papers, brought together the technical leaders in television research from research centers and networks in Europe, Canada, Japan, and



*SMPTE President M. Carlos Kennedy delivering the opening address.*

of course the U.S., to present their views on "The Frontiers of Global Television Research." Next, the twelve of them sat on a panel where we all had a chance to question them.

Never before had such an influential panel been organized. As you might expect, High-Definition Television was one of the key subjects, with diverse views expressed by speakers.

The Society participated in the NAB convention, the Montreux Television Symposium, the SBE Annual Convention, and the BKSTS Conference, where we had an SMPTE booth manned by our Executive Director and other Headquarters staff. Many of the officers and governors at these four meetings met with current members and the many new members who signed up at the booth.

The Hollywood Section, through its Educational Committee, again had its all-day seminar on Electronic Post-Production for Film and Video in conjunction with the University of Southern California. This was telecast by satellite to 13 official locations in the U.S. and Canada, and an unknown number of pirates. Also, a successful mini-conference was held by the Society's Rochester, Montreal/Quebec, Ottawa, and Toronto Sec-

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*"We are a very healthy and active Society in all of our activities in the fields of motion-picture and television, and we have had an impact in the medical imaging field with the SMPTE Test Pattern for Medical Imaging."*

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tions, and a successful All-Day Meeting was held by the Chicago Section. The Toronto, Washington, D.C., and New England Sections also conducted meetings, using satellites to reach more members.

The Society also had a hand in improving relations, both technically and culturally, with others in the motion-picture and television industries in Europe, Asia, and the Far East. I, along with our Vice-President Richard Streeter, represented the Society at the HDTV Production Symposium of one of our sister organizations, The Motion Picture and Television Engineering Society of Japan (MPTEJ), where we both spoke on our role in HDTV. This was also the 40th anniversary of their Society's founding, and we met many of their famous members and former presidents. At that time we agreed to cooperate on the projection of HDTV productions transferred to film at this conference. All day Sunday and Tuesday you can see these films projected. I also spoke on behalf of the Society at the Broadcasting Technology Association's International Symposium on HDTV, also held in Japan.

I was honored to lead a SMPTE delegation into the USSR at the invitation of the Deputy Chairman of the State Committee of the USSR for Cinematography, Mr. Sergey Solomatin. Howard La Zare, our Editorial Vice-President, and Ed Di-Giulio, our Engineering Director for Motion Pictures, joined me. We exchanged technical views on motion pictures at their advanced research center, and at studios, theaters, and laboratories in Moscow, Kiev, and Leningrad. The challenges and problems in motion-picture engineering are the same the world over.

We made new friends for the Society and renewed old friendships. On a personal note I found glasnost, or openness, to be working. We discussed with our hosts the differences in our cultures, work, and home life. I was happy to see so many similarities. Their personal desire for peace can be

summed up by one statement made at the Dovjenko Studios in Kiev, where a plea was made to "compete on the screen, not militarily." I often pray that the leaders of our two nations listen to the desires of the people.

The Society furthered international relations with a delegation that visited both Korea and the People's Republic of China. In Korea, at the request of Mr. Cho, Director General, Broadcast Operations Dept. of the Seoul Olympic Organizing Committee, we visited many of the Olympic venues and exchanged technical views with Korean broadcasting systems. In China we visited at the request of Mr. Wang, Vice-Minister of Ministry, Radio, Television, and Film, People's Republic of China, and Director of China Central Television, and Mr. Sun, Deputy Director of China Central Television and Vice-Chairman of the Council of the China Society of Motion Picture and Television Engineers. We attended the opening ceremony for their new China Central Television Center in Beijing and held technical discussions with their engineers.

We also attended the 1st Beijing International TV Equipment Exhibition. This was a renewal of relations since the visit of our Past-President Harold Eady's delegation two years ago. It's always interesting to see a completed center after you had visited it during its early construction.

One of this year's highlights for the Society was receiving our second Emmy statuette Award from the National Academy of Television Arts and Sciences for our engineering work on the Component Digital Television Tape Recorder, using the Component Digital Standard for which we received our first Emmy award. This work was conducted in close cooperation with the European Broadcast Union (EBU), which also received an Emmy statuette. We should all feel proud, and I invite all of you to visit our Headquarters in White Plains, N.Y., to see these and all of our awards. I would like to acknowledge a

special thanks to all of the volunteer committee members, especially the Chairman of the Working Group, Fred Remley, for all of the dedicated effort that made this standard a reality. You will hear more about our engineering work, the IEC and ISO meetings, and the visit to EBU engineering headquarters from our Engineering Vice-President, Dick Streeter, who will follow this address.

Your Society is continuing to grow and now has over 9000 members, with over 1250 outside of Canada and the U.S. We are a very healthy and active Society in all of our activities in the fields of motion-picture and television, and we have had an impact in the medical imaging field with the SMPTE Test Pattern for Medical Imaging.

As I mentioned earlier, this 129th Conference should be one of our best. We have more quality technical papers than ever before and will have triple sessions on Saturday, Monday, and Wednesday. After selling out 75,000 ft<sup>2</sup>, we decided to expand the exhibit by allocating floor space in the rear of the convention exhibit hall to companies on our waiting list. Even then we received a few requests for space that started a new waiting list. I am sure the banquet will surpass our last Hollywood banquet. All of this preparation is due to the many volunteers who worked so diligently behind the scenes, and I want to thank all of them, especially Conference Vice-President Blaine Baker, Editorial Vice-President Howard La Zare, and Program Chairman Frank Haney. As many of you remember, the 127th Local Arrangements Chairman here in Los Angeles in 1985 was Mike Chewey. Well, Mike is doing it again. I'm not sure whether he is really doing it until he thinks he is getting it right or he is just a masochist! This is really a family effort because Judy Chewey is Chairwoman of the Spouses' Program. A special thanks to the Cheweys.

We have some outstanding guest speakers today: Daniel Slusser, senior vice-president and general manager of Universal City Studios, will give the keynote address, and Jean Firstenberg, director of the American Film Institute, will be our Honors and Awards Luncheon speaker.

I look forward to an exciting and rewarding 129th Technical Conference and Equipment Exhibit.

Welcome again.

## What is a Standard?

By Richard G. Streeter, SMPTE Engineering Vice-President

You, of course, can go to Webster's dictionary and find a definition — in fact, several. But it's much more than merely words. In fact, one could say it is the very essence of the SMPTE engineering activities. For over half a century the Society has provided the framework for the development of standards.

While the dictionary definition may sound simple, the effect required to reach agreement on a standard is far from a simple matter or easy. Many of the committees address issues involving difficult technologies. In addition, marketplace considerations and other factors can make reaching a consensus difficult, and sometimes even impossible.

However, there have been many, many successes. In fact, I would guess that the success rate is over 95%. In the November issue of the *SMPTE Journal* a proposed American National Standard appeared covering the signal parameters of the 1125/60 High Definition Television Production System. Although relatively few pages in length, it represents thousands of man-hours of effort by a dedicated group of engineers. A look at how it came about provides some insight into what lies behind the standardization process within the SMPTE.

The stage was set in 1977 when a study group on HDTV, chaired by Donald Fink, was formed. Two years later the group issued a report. Among its conclusions and recommendations were the following:

1. The appropriate line rate from HDTV should be approximately 1100 lines/frame.
2. The frame rate should be 30/sec 2:1 interlaced
3. The aspect ratio should be not less than 5:3.

It's interesting to compare that to the parameters in the proposed stan-



*Engineering Vice-President Richard G. Streeter delivering speech.*

dard 1125 lines today of 30 frames/sec, 2:1 interlaced, aspect ratio of 5.33:33.

The study group continued on, later to be chaired by Kerns Powers, and in early 1984 the Working Group on HD Electronic Production was formed, chaired by Dick Stumpf and Birney Dayton.

This group, which is Hollywood-based, addresses both the film and television aspects of HDTV. It has

met regularly at 4 to 6-week intervals and has provided the film community a strong voice in not only the SMPTE deliberations but also through the SMPTE to the ATSC, which was formed by a number of organizations, including the SMPTE, to address HDTV and other improved television systems.

Under the SMPTE working group several subgroups were formed, including one on colorimetry chaired by Leroy DeMarsh of Eastman Kodak Co. Just about a year ago a subgroup was formed to put together a document detailing the 1125/60 HDTV parameters. This was done at the request of the CBC, CTV, ATSC, and others.

The output of this group was presented to the working group, and in August 1987, by unanimous vote, it was approved. The SMPTE procedures require that it be balloted by the parent technology committee, and then by the standards committee. Both groups have approved the document, and publication in the *Journal* is the next step. After that comments are addressed and then it is submitted to ANSI.

The document has also been submitted to the ATSC, which is ballot-



*Conference Vice-President Blaine Baker exchanging remarks with Editorial Vice-President Howard T. La Zare.*

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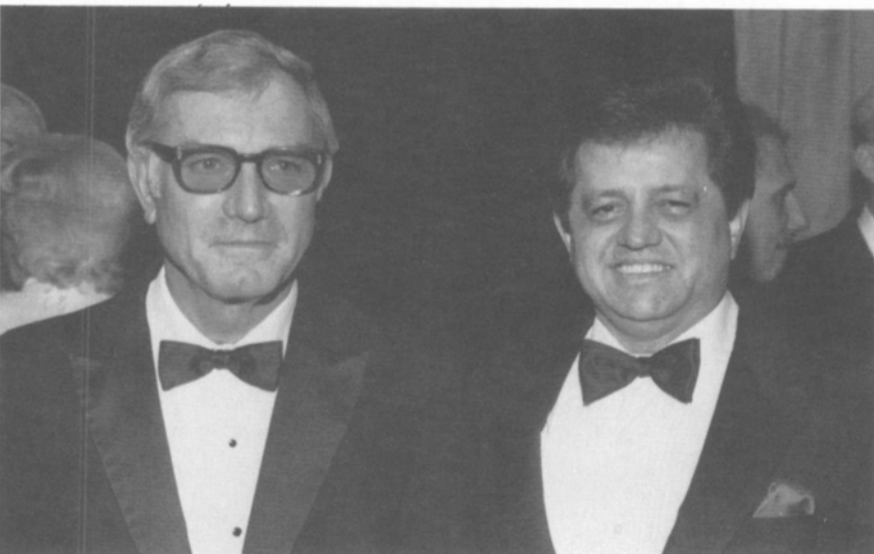
This is the text of the remarks delivered by SMPTE Engineering Vice-President Richard G. Streeter, CBS Broadcast Group, at the opening session of the 129th SMPTE Technical Conference and Equipment Exhibit.



President M. Carlos Kennedy and Executive Vice-President Maurice L. French.



SMPTE Executive Director Lynette Robinson and Past-President Robert M. Smith share a humorous moment.



Program Chairman Frank J. Haney and General Arrangements Chairman Michael V. Chewey at the SMPTE Banquet.

ing it, and also to the U.S. State Department, which has submitted it to the CCIR for consideration as a world HDTV standard.

As important as this document is, since its intent is to insure that equipment will interconnect and be interchangeable — perhaps the most exciting thing is to see examples of material produced using the 1125/60 HDTV system.

On page A7 of your program you will find a list of material that will be shown on Sunday and Tuesday, all originally shot on HDTV and transferred to 35mm film.

The first piece, *Julia and Julia*, is unique in that it represents the first film that was shot on HDTV for release in the cinema. It features Kathleen Turner and Sting. I invite you to decide if it looks more like film or TV. Also, since it contains a minute or so of material originally shot on film, see if you can spot these pieces which are interspersed with the HDTV material. A paper by Dr. Lionetti of RAI will cover the production of the film.

In the film area, another important effort is the investigation of 30 frames versus 24 for cinema. The group, chaired by Ed DiGiulio, put together a report which will be summarized during Ed's presentation. Also shown for the first time will be an HDTV transfer to film at 30 frames/sec.

In August of this year a group of film experts met to form a film steering committee to guide the engineering efforts of the Society. A listing of the topics discussed provides some insight into their work: 3 Perf, AC Lighting, Digital Sound on Film, Time Code on Release Prints, Improved Projection, Interface, Film to Video and vice versa.

On the television side, activities continue on parallel and serial interfaces, monitor standardization, small tape formats, a composite digital tape standard, the ESBUS, and many other projects.

Yes, standardization is a challenge, but it is an exciting one. The process is not perfect, but it works well. Participation brings with it obligations and responsibilities.

We must always be prepared to answer these questions: Was the effort worthwhile? Did we meet a need on a timely basis? Is the standard one that industry and the users will support?

Thanks to all of you — the officers, the board, the staff, members of engineering committees, and chairmen.

# Keynote Address

**Daniel E. Slusser**

Thank you, Frank. As Mr. Haney told you, I'm Dan Slusser, one of the many vice-presidents of Universal Studios. That's a little place on Lankershim Blvd. where we produce some motion-picture and television programs. Like most studios in Hollywood, we are not in Hollywood itself, but on the outskirts, which is close enough, I guess. We have been making movies at the same location for some 72 years. Universal City Studios has played, and will play, a significant part in the changing Hollywood that we are here to discuss this week.

For those of you who have come from out of town, welcome to Los Angeles. Be glad it's a Saturday. Any other day of the week, you would have had the opportunity to enjoy gridlock on our freeway system. Stay long enough and you may enjoy one of our earthquakes.

Incidentally, I'm not the first vice-president of MCA to be invited to address this group. In 1967, you invited Al Dorskind, who had my job at the time. I pointed out to Al that after he spoke, it took 20 years for you to invite someone back from Universal to say something. I guess Al stirred things up a bit. He challenged you to shake the dust out. He said that we were working with obsolete equipment — cameras, lights, just about everything was outdated. He must have been convincing, because a lot of good things have happened since 1967. In fact, just about everything has changed. We have new cameras, new raw stock, and hybrid film/video editing systems.

There are also new means of distribution. Who would have guessed in 1967 that 40 million U.S. TV households would be renting or buying movies on videocassettes, or that videocassette rentals and sales would out-gross theater receipts? And, if someone did guess, he or she probably would have made a doom-and-gloom statement about the future of theatrical films. As we know, that isn't the reality.



*Daniel Slusser delivering the keynote address at the conference.*

What really has been happening — and where are we really going? Well, that's what we are here to discover this week. The theme of this gathering is "Image and Sound — Today and Tomorrow." We have a big job ahead of us, not only this week, but for the coming years.

Movies and television are a multi-billion-dollar business. We shoot a film in Hollywood, and it gets transferred to tape for editing or distribution or both. Or, we shoot an episodic TV program, and it ends up being seen in a theater in Hong Kong as a feature. The movies and TV programs that we produce reach people in every corner of the world — and usually in more than one format.

Hollywood is more than a place — it is a state of mind which symbolizes excellence in the production and distribution of film and television programming. We are the keepers of a heritage that is crucial to the future of the world. Believe it. There is no more important or influential art form than the movies. There has never been a communications medium like television in the history of the world. When you consider the impact that movies and television have made on our society — on what we think, what we know, and how we view the world . . .

But when you look around this room and count how few of you there really are relative to the challenges that we face, it becomes obvious that you have your work cut out for you. There is no room in our business for a we/they approach, there is no room for separate creative and engineering communities traveling separate paths. It's us and we — we rise together or we fall together — it's that simple.

Before we move ahead and consider what we need to do about the future, it would serve us well to take a few moments and reflect on our past. We do have a history and a heritage to consider, and we shouldn't take them lightly. Our history and our heritage have served us well. They have made the movie and television industries into a powerful and influential force not only in our Society but throughout the world.

Those of you who have come from out of town may not be aware that Hollywood is celebrating a significant birthday. We are 100 years old. It's our centennial. There were no movie studios in 1887. In fact, there was no movie film.

In 1889, George Eastman succeeded in manufacturing a 200-ft roll of film. Eastman asked Thomas Alva Edison how wide he wanted the film to be for his new camera. As the story goes, Edison held his thumb and forefinger about an inch apart, and he said, "About so wide." This well-engineered standard has endured, and that's a lesson of history for us to consider as we discuss and contemplate the issue of adopting a one-world HDTV standard, or as we discuss the issue of three-perforation versus four. Without standards, we are in a fragmented marketplace with limited outlets for our creative products.

In 1912, Carl Laemmle started building a studio in a deserted valley at the foot of some hills in North Hollywood, on an abandoned egg ranch. There were no roads to downtown, where the film labs were located. Skeptics were sure it would be a short-lived venture. Universal Studios opened on that site in 1915, and 72 years later we are still there.

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Text of address given by keynote speaker Daniel E. Slusser, vice-president and general manager, Universal City Studios, Universal City, Calif.

The slides you are seeing show the original Universal Studios in 1915. There was a lot less traffic in those days. The castle on the hill was a set for a movie — the longest sound stage in the world. It was divided into many small sets, lit by the sun. The cinematographer's job description required him to have the ability to hand-crank the camera at a consistent 16 frames/sec, and he kept very careful notes of each take.

Laemmle had a unique idea. He thought that the public might be interested in seeing how movies were made. So, he opened up the studio for the public and gave tours. That was an idea with staying power. Last year, more than 4 million people toured Universal City Studios. The public has an insatiable curiosity about the art of moviemaking.

How did MCA get involved in all of this? MCA decided to produce film programs for the fledgling television industry. They produced a film program called "Stars Over Hollywood," and convinced Armour, the meat-packing company, to sponsor it.

Keep in mind that no one in Hollywood was too happy with television in those days. It was seen as a serious threat to the movies, and, Hollywood had reason to be worried — soon the public would be cutting back on its movie-going habit, staying home and looking at images on a box.

What brought MCA into the TV business, when the traditional Hollywood studios were running in another

direction? In a word — opportunity. In 1958, MCA bought Universal's studios, for what *Business Week* reported as more than \$11 million. It spent another \$10 million improving the facilities. Not a bad investment by today's standards.

At Universal Studios today, there is a big building, fondly referred to as the Black Tower, where our executives work. Altogether there are 420 acres, including 34 sound stages and a multitude of backlot sets. Five of these sound stages have been renovated for videotape production.

Universal has provided facilities for more tape shows than any other major studio in recent years. There are big air-conditioning units on the roofs of the sound stages. That's technology. The only thing that separates a film and video facility is silent air-conditioning. The reality is that we go either way at Universal, film or tape. But we believe that at the foundation of all of this is motion-picture film. That's what it all starts with — movies produced for theatrical exhibition, cable, pay per view — and ultimately television and videocassettes. Approximately 85% of all the programs on the three major networks in prime time are produced on film. Without film to record our images, there would be no need for our studios or for all of the people who work there.

If the chronological order were reversed, and if videotape had come first and film followed many years later, our industry would have been stunned by

the creative impact of this newfound medium, film. For all of the same reasons, film is the universally accepted medium for the distribution of movies and television programming.

All of these factors contribute to the immense value of the film in our vaults. Film, properly stored and protected, is a tremendous asset. It is our artistic heritage. Those images stored on film are a high-definition medium available for whatever the future brings in the way of advanced electronic distribution. Films have been produced in Hollywood for 81 years and the technology and the art of filmmaking have matured, but impressive progress is still being made.

The pace of innovation demands that we pay close attention to how new technology can advance. Your President, Carlos Kennedy, should be and must be congratulated for the leadership that he is providing. This week he has invited many of the executives of the film industry in Hollywood to meet with him to establish guidelines for how SMPTE can do an even more effective job of supporting the needs of the film production and distribution communities.

We need this type of foresight and creative dialogue. Hollywood needs your assistance. I said earlier that we are all travelling in the same boat. We are going to sail together or we will sink together — it's just that simple.

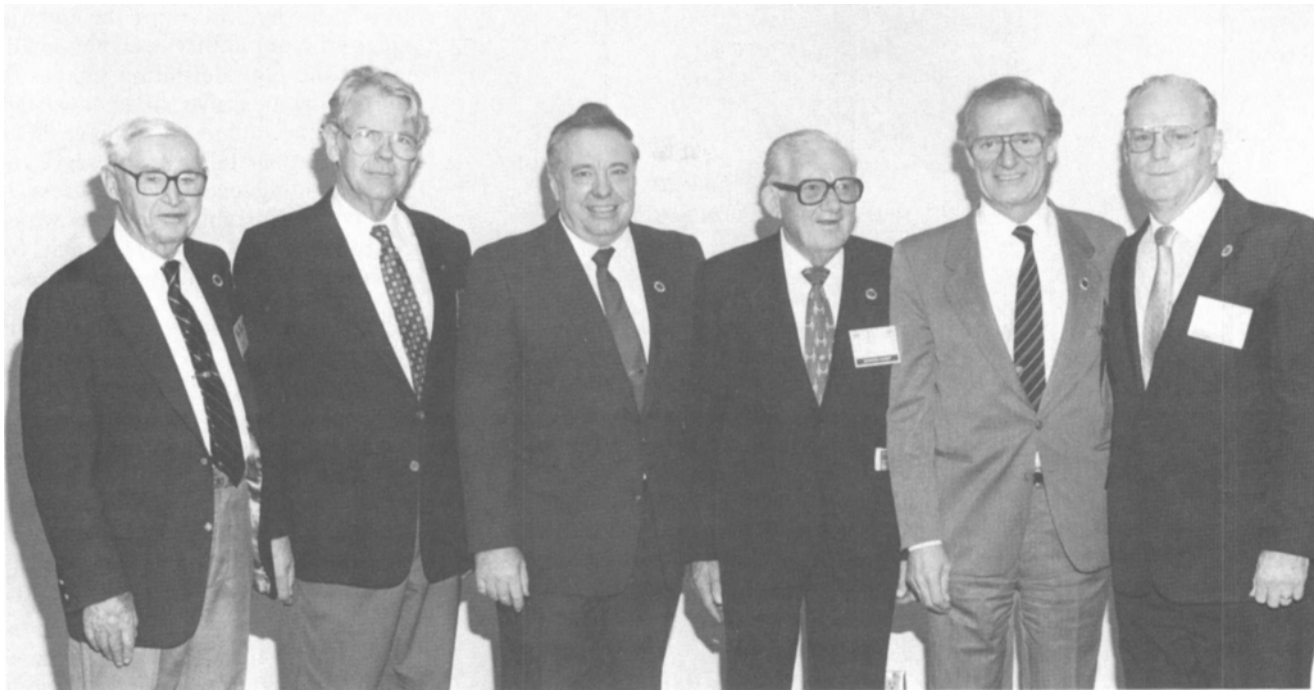
There are issues which we have to address together. Hollywood needs a partnership with SMPTE. I believe that our discussions this week will point the way. It will identify the paths which we must explore together. I look for the same kind of high-level relationship between the filmmakers and SMPTE that the broadcasting industry has enjoyed in the past.

We at Universal City Studios are very happy to be included in this new dialogue with SMPTE. We share many mutual interests with the members of SMPTE. The filmmakers' obligations and responsibilities to the industry are the same as yours. Indeed, without the cooperation of the engineering community, without your Society's dedication to establishing standards, without your leadership as educators, without your commitment to excellence, our goal to remain number one in the world will fail.

History will judge us — remember that. History will decide how well we handled our responsibilities, and how



Facilities Chairman Charles D. Kircher, General Arrangements Chairman Michael V. Chewey, Hotel Arrangements Chairman Milt Sheffer, Video/Papers Facilities Chairman Gus Dato, and HDTV Film Festival Chairman Richard J. Stumpf.



*Past-Presidents of the Society: (L-R) John G. Frayne, Charles E. Anderson, Leonard F. Coleman, G. Carleton Hunt, Harold J. Eady, and Robert M. Smith.*

well we carried the torch which was handed to us. We have a debt which must be paid to those who preceded us and showed us the way. We have a heritage to protect and to advance. We have an obligation to preserve that heritage and to add to it for those who will someday follow in our footsteps.

If we are going to succeed, we must forge a successful partnership, and having forged it, we must maintain it. We must gain a better understanding of where we have been, where we are going, and what is the best way to get there.

Keeping those objectives in mind, I want to share with you some of the obligations that Hollywood and SMPTE share and some of the issues which confront our industry today. All of these obligations and issues fall within the constitutional objectives of your organization.

- Our joint obligation is to preservation.
- Our joint obligation is to chart a course for those who follow us.
- Our joint obligation is to educate.
- Our joint obligation is to help establish standards.
- Our joint obligation is to the future, to answer the following questions:

Imaging and sound today and tomorrow — what does that mean? Is it

HDTV? Is it 30 frames/sec? Is it 3-perf versus 4-perf? Is it sound we dream of?

### **Our Obligation to Preserve**

Most of our companies' assets are tied up in massive vault inventories. This represents a tremendous heritage left by our predecessors, and its value is multiplied when you consider whatever means the future holds for distributing our product to the consumer. The treasures of Hollywood's vaults will be a major commodity that is distributed. We have an obligation and responsibility to manage and care for these assets, and to seek out and apply the best technology appropriate to maintain the quality of film and videotape in our vaults.

Only then will we have available yesterday's art to use tomorrow. Unfortunately, at times the treasure in Hollywood's vaults was not always treated as such. Some of it has been lost or suffered the ravages of mishandling and poor storage practices. The damage done so far fortunately has not been so complete as to make restoration impossible. The recent increased attention to restoration of some of the classics has yielded astounding results, with the restored pictures looking as vibrant today as they did in their prime.

The reasons for the deterioration of these films are certainly better under-

stood today than when the older films were first produced. We should be able to do a better job of preservation with this knowledge in hand. Several studios presently have ambitious asset-protection programs involving restoration and geographic separation.

As an example of this, let me show you what Universal is doing. Just outside Pittsburgh, Pa., is a limestone mine which has been outfitted with special film-preservation and protection facilities. We have some 76,000 individual cans stored there and that quantity grows daily. Incidentally, this is the same storage facility that the U.S. Government uses to store your Social Security records and its CIA files.

The main entrance to the mine is protected by a 3-ton steel gate and patrolled 24 hours a day. Moving underground, at the 220-ft level, is a roadway leading to the Universal facility, which consists of 10,000 ft<sup>2</sup> totally enclosed by solid limestone rock. All openings are closed off with 3-hr fire-rated masonry walls.

The main storage area contains dehumidification, refrigeration, and filtration equipment. The storage areas are protected with elaborate smoke-detection and sprinkler systems and an intrusion alarm. Continuous monitoring of temperature and relative humidity is recorded hour by hour and



*Editorial Vice-President Howard T. La Zare and Governor and Chairman of the Board of Editors Frederick M. Remley.*

reported to the studio on a weekly basis. The 10,000 ft<sup>2</sup> area is divided into three isolated sections in order to provide the best environment we can for protective storage of the three broad classes of material stored here.

All features are converted to the black-and-white color separations for storage. A second section is maintained as the best environment for color film, and a third section is allocated to combination storage of videotape masters along with the low-contrast film from which they were made.

We have a continuing program to make protection copies, picture and sound, of current production and to separate all non-nitrate masters from our nitrate film storage facility in New Jersey. But there are still questions remaining about storage of these irreplaceable assets. We find differences in expert recommendations for optimum storage conditions for each type of product, be it film or magnetic media, for sound and videotape. We need to further refine our storage techniques, and we need definite scientific data.

The SMPTE has done a good job on basic recommendations of conditions for archival storage. However, further study directed toward improving archival practice is invited. SMPTE could serve as a unified voice on this issue and become a needed central clearing house to unify and systematize the best information. Our attention to preservation should not be solely backward-looking or limited to conventional elements of production. We must assess each new device or

process before it is introduced into the production chain to make certain our responsibility to the future is not compromised in our eagerness to exploit some short-term advantage. An example of this is the fact that in the past three years, we have seen somewhat of a post-production revolution.

The process of editing film electronically has arrived and has been accepted by many producers making network television programs. This development was a long time in coming. Its beginnings are traceable to the CMX 600, introduced in 1972. In 1985, Universal City Studios was the first to apply the most prominent of the new wave of electronic film editorial equipment, Ediflex, for editing "Still the Beaver." This show is made for cable TV. It is shot on 16mm negative, which is transferred to videotape for editing.

We are still using this system, which for this show works very well. As long as we are satisfied with NTSC videotape as a final product, this is fine for a cable show like "The Beaver." But what about our overseas customers in PAL countries? What about the HDTV systems in our future? The inferior quality of 1-in. NTSC videotape when it is bumped up to these formats it is clearly unacceptable. A way must be found to assemble the film economically. Only then will we have lived up to our responsibility to preserve our product — to be able to supply tomorrow's markets with the same quality as the original film used to shoot the show. Without unambiguous traceability,

film frame by film frame through the video edit, our ability to economically access the high-definition images on the original negative will be thwarted. Unless this is achieved, we have failed in our responsibility to preserve, by not providing economical access to the vaulted original negative which contains our best-quality elements for distribution, now and in the future.

### **Charting an Orderly Progression to the Future**

This is another obligation and responsibility that must be shared by engineers and management alike. As time goes by, technology develops. In some cases that may provide us with a multitude of ways to do the same job. This presents situations where competing and incompatible technology is allowed to proceed to fruition, and the value of the technology can become diluted and often neutralized. Incompatible equipment and systems block free flow of product and hinder creative production.

Recognizing these facts, SMPTE has achieved some outstanding records. With strong leadership and guidance from users and cooperation from manufacturers, SMPTE was able to forge a common 1-in. videotape format from what had started out to be two incompatible systems. The resulting equipment has served the industry well for many years, and I venture to say the manufacturers involved enjoyed better business results by coming together at the beginning!

SMPTE, in worldwide cooperation with manufacturers' and users' organizations, achieved an outstanding accomplishment in the D-1 standard, which completely specifies the long-sought-after digital video recording standard with good multistandard capability among NTSC, PAL, and SECAM.

At the present time we find a multitude of recording standards again assaulting the industry. Several third- or fourth-generation videotape formats, giving broadcast quality on smaller 1/2 in. tape, are being offered for professional use. Differing digital sound-recording machines are on the market, and this will prevent interchange between post-production houses, or at least add to our costs. Motion-picture producers and others creating programming software place great reliance upon these independent post-production operations. They are

related to our videotape activities in the same way that the laboratories have supported film productions over the years. The requirements for multiple equipment to accomplish the same end result are not only costly, but they also impose quality problems. One video post-production house has reported the need to maintain in place eight or nine different types of videotape machines in sufficient quantity to serve its customers. Unfortunately, the situation seems to be out of hand and will probably remain that way until digital recording is firmly established.

It is the obligation of engineers and their organizations to help management chart an orderly, coherent progression to the future. *You must be the technological conscience of a self-indulgent industry.* The true test of worth is not merely technological stat, but whether or not a job is done better, with greater economy, and with improved quality.

We at Universal City Studios try to hold new methods up to a three-step criterion in an attempt to judge their value. We ask of the proposed new way — Is it quicker, better, and less costly? Can we get it faster with more convenient results? What are the pitfalls? For “better” we look at quality — is the product better or as good as the existing method, and in evaluating the cost aspect, the question is, will the new method make our financial executives smile. Unless there are

positive answers to these questions, you are better off not going for the new method — product or process. Change of any kind brings with it a certain amount of disruption and added cost, so it should be cost-effective or quality-generating.

### **Our Obligation is to Educate**

We have a responsibility and obligation for our own mid-career training, but more importantly, we have an obligation to give proper instruction and guidance to those who will replace us. Over the years, the Society has done a good job in training within its fields of activity. National conferences, regional and sectional conferences have been of great value to keep members up-to-date on new technology. Special courses and seminars, sometimes offered in conjunction with universities, have focused on a wide range of theoretical and practical subjects.

The ambitious Lighting Seminar in May 1983, held by the Hollywood Section, set the pace locally for a series of spring seminars which considered new technology, but more importantly, also emphasized the “how to” aspects of the job. This particular activity, I am proud to say, was conducted at our studio where outstanding cinematographers explained their technique on live sets before some 500 students. The videotapes made from this session are well established as important instructional materials.

These tapes contain a wealth of information, not only for aspiring cinematographers, but also for others in our industry. Other spring seminars jointly sponsored by Universal City Studios and the Hollywood Section on audio post-production and new post-production techniques have also been well attended. By means of satellite distribution, these presentations have been shared with other sections and campuses.

The recent HDTV Production Seminar, jointly sponsored by UCLA and the Hollywood SMPTE Section, is an example of an innovative Society doing a good job of keeping its membership informed. Keep up the good work in these activities, and don't forget the massive job of retraining today's craftsmen so they can handle the expanded roles that new technology will require of them.

But what about training for the young people and newcomers into whose hands will fall the task of future leadership. These are the people who will be running our industry 20 years from now. What are you, or rather we, doing about them? I say “we” because I believe it is a joint concern of industry and its professional societies. Today you have student chapters at several schools, and I understand these groups are supported largely by individuals from industry serving as lecturers. While local sections serve as referral agencies, this effort is more a personal involvement of individual members rather than a deliberate Society effort. The Society today has no formal, coherent program to foster higher education. *You have an obligation to get this done.*

I am told the Society once had an active scholarship program which concentrated on sponsoring engineers at prominent schools. This was abandoned because it was felt that for the most part it was benefiting students with creative aspirations and not engineers, and that engineering is what this Society is all about. Perhaps this is so, but I submit to you that the Society should take into consideration the changing nature of the industry it serves.

The 1980s have seen, for a variety of reasons, an exodus of hardware manufacturing from our shores. This is true to some extent in film equipment, but it is especially apparent in the case of video hardware. It would be impossible today to outfit a video production or post-production opera-



*Program Chairman Frank Haney and Conference Vice-President Blaine Baker enjoying the Honors and Awards Luncheon.*



*Audio/Visual and Projection Chairman Don V. Kloepfel.*



*Awards and Fellows Luncheon Chairman Craig Curtis.*

tion exclusively with equipment from American manufacturers.

The center of gravity of the Society's members, and the industries it serves, has shifted from a manufacturing group to a production group. As such, the need for large numbers of strictly engineering-oriented professionals may not exist to the same degree it once did. But with this decline in development and manufacturing activity, the U.S. remains a center of program production. American programs are popular in every overseas market, and our share of this area is likely to increase as new electronic distribution systems come into being. The favorable balance of payments for programs originated in the U.S. amounts to \$1.3 billion dollars, according to our State Department.

The technology base has clearly shifted. We are now largely users of technology. These conditions demand a similar shift in emphasis of the education of the people who will carry on the creation and the production of our "software." We need people with broader basics who know something about the world and how to get along in it rather than the classical engineer of yesteryear.

We need people who are well-rounded and who have a combination of engineering and creativity to serve our creative community. The emphasis no longer should be on engineering in the classical sense of developing individuals who will be experts on design, application, or hardware, but on people who will be knowledgeable not only in the skills of operation, but have a grasp of all the elements affect-

ing the interface of the technology being applied to a production situation. Future graduates should not be confined to narrow jurisdictional areas, but have a broad knowledge of:

- How best to use technology to serve the needs of the production?
- What equipment should we buy?
- How do we operate and maintain our equipment?

To meet these educational needs, I urge the Society to undertake steps to define for industry, for educational institutions, and for the students themselves the exact educational requirements for jobs at all levels. These personnel requirements should cover not only entry-level concerns but also long-range requirements. The establishment of solid guidelines as to the knowledge needed for particular jobs in the industry would be an outstanding service for all involved in making things happen. The existence of such a set of guidelines would be a large step toward bringing together industry and education at all levels to meet a common objective. I suspect that many educational programs are based upon guesses or maybe wishes of the people in the institution administering the programs. SMPTE could fulfill its educational objective on a grand scale by starting immediately to codify the educational requirements of our fascinating and sometimes confusing business. I would also urge you to involve our friends from the labor unions. Hollywood's roster system and its hiring-hall mentality can do much to slow down the progress of technology. You can help them to help their members.

## **Our Obligation is to Help Establish Standards**

Standards are the glue that holds our industry together. People who use technology, as opposed to those who create it, tend to take standards for granted. Standards are an essential element. They are a part of the integrity and craftsmanship of the product.

I am told that our Society was first organized to standardize motion-picture film and film-handling machinery. In the U.S. adherence to industrial standards is primarily a voluntary matter. However, in many instances, voluntary becomes mandatory if you want to stay in business. Just try to make a picture using 23mm film, and you will soon see that following standards suddenly becomes mandatory if you want to succeed.

In other cases, standards are often interpreted and implemented haphazardly. Voluntary compliance in these cases depends upon whether or not it is convenient to do so. Such a standard is the motion-picture screen brightness specification which requires one thing — and yet we do another. Considerable research and deliberations undoubtedly went into the establishment of 16-fL brightness. Because this figure has the backing of SMPTE and ASA, and because of its wide acceptance by engineers, we find that laboratories and producers take pains to assure compliance in their preview rooms. Cinematographers are guided in their exacting interpretive work by what they see in daily screening rooms which are carefully maintained for the standard screen illumination and color temperature. Similarly, laboratory timers judge their work under these same standards and prints are balanced for optimum quality in projection rooms. So far, so good. But what happens out in the real world where the public pays for and sees our product? We usually find screen brightness running at around half of the standard value.

Here is a case of a voluntary standard which is not followed in the name of economy of operation. Exhibitors are reluctant to spend the money for the equipment and energy necessary to maintain this standard. Distributors back away from specifying technical performance levels in the bidding process. As a result, the public sees in our product only a dark shadow of the creative effort.

I have been told the high screen-brightness value is maintained on the



*One of the technical sessions at the conference.*

books to serve as an ideal toward which exhibitors would strive and, hopefully, someday meet. I question the wisdom of that. I believe that this standard should be lowered to reflect operating practice and equipment capability in the real world, and I urge you to take this action to preserve the credibility of this standard by keeping it up to date, in step with the real world and the needs of our industry, or to work with the exhibitor to meet our standards.

I don't think it is generally known, but there is one particular SMPTE engineering committee which meets in Hollywood (well, actually Burbank, as Johnny Carson says), which undoubtedly holds some kind of record for persistence, length of service, and productivity. I am speaking of the Subcommittee on Audio for Motion Picture and Television, organized in 1976 by then Vice-President of Engineering Rollie Zavada. This dedicated group, drawn at first from the ranks of studio sound directors, now includes representatives from the TV networks and holds its meetings at six-week intervals starting at 7 a.m. over breakfast.

Problems affecting interchange of sound recordings among studios was an early issue tackled by this group, and equalization standards were established for all forms of magnetic film recording including 70mm release prints. Recording levels, dynamic range, and stereo compatibility were issues which have also been tack-

led successfully. These are outstanding examples of what dedicated users working with SMPTE can accomplish to the great benefit of our industry.

But standards are not limited to just studio practice, they are worldwide in scope, especially in film. As one engineer described this happy situation, "It is entirely possible to screen a motion picture made in Hollywood, using a Russian projector, in Zaire," because motion-picture film is the only item universally standard in every part of the world. Whether it is 16mm or 35mm, pictures can be made anywhere in the world on any manufacturers' film and be presented in a theater in any country. This is due in no small part to the work of the International Organization for Standards (ISO) Technical Committee on Cinematography. The SMPTE maintains the Secretariat responsibility for this organization.

### **High-Definition Television (HDTV)**

HDTV has been demonstrated at previous technical meetings with consistently spectacular results. In many ways the desire of HDTV to emulate 35mm film has been achieved. Production equipment is becoming available and is being used in serious production projects.

The importance of the development of this technology has finally dawned on a wide segment of program production and distribution communi-

ties. In a flurry of activity we see broadcasters, cable operators, and home video distributors springing to life to understand the market which may be created by the delivery of improved electronic images to the consumer. They are busy pondering how they can participate in this market, trying to get a feel for the kind of system, equipment, plant modification, and emission system that can do the job. Compatibility with existing NTSC receivers is high on the list of desirable properties of whatever system is adopted. From a motion-picture maker's point of view, true compatibility is not achieved unless the wide-screen HDTV picture can be pan-scanned in broadcast for best viewing on the narrow NTSC screen.

Filmmakers are in a little different position on this issue than are the broadcasters and cable operators. As mentioned before, we already have in our vaults huge inventories of quality program material in a high-definition format. It's on 35mm film, and it will adequately serve whatever electronic distribution standards may come into being down the road. Nevertheless, the emergence of a new electronic technology with the promise of quality comparable to film has gotten our attention and does warrant the close scrutiny of the film industry. The potential of such a system to augment film production and its possible impact on distribution could have an important influence on the future business of our studios.



Engineering Vice-President Richard G. Streeter and Financial Vice-President Stephen D. Kerman at the Honors and Awards Luncheon.

The replacement of film on our sound stages by video cameras and tape recorders has been advocated several times in the past by well-meaning groups. Again, we are being told about the significant below-the-line cost savings inherent in electronic production, but with HDTV, we won't have to give up the quality performance of 35mm film. Now, several studios, ours among them, have seriously used videotape in production for TV network shows. Other studios have even tried videotape for features. Everyone who has worked with videotape for dramatic action shows demanding single-camera production values, have without exception reverted back to film. So, why all this interest in HDTV if filmmakers don't see it in widespread use as a prime production medium? Why spend the time and effort to understand and hopefully influence the standards which will define HDTV systems of the future?

It is simply this — we see the future of our industry closely tied to the merging of electronic processes with filmmaking. More simply stated, it is a marriage that must occur! Some experts believe that the quality resulting on 35mm prints of HDTV electronic compositing exceeds that which would result from film methods using 35mm elements. This assertion requires verification, but the instantaneous results of the electronic method certainly outdistances the days and

weeks involved in equivalent film compositing techniques. We feel this example is just the beginning of a wide range of useful processes, which in all probability will be digital in nature and also available for manipulating and modifying images, and even creating images to serve the creative filmmaker.

We do not want technology for technology's sake, but we seek better ways to do the creative job. Merging electronics with film images offers

great promise, but there appears to be a great deal of work to be done before this goal can be achieved. In doing this, engineers must not lose sight of the absolute need for transparent conversion between film and the electronic media. Also, the rendition of motion in the final product must be smooth, even, and symmetrical.

Another reason for the film community to get behind HDTV development is the promise that HDTV offers of a single standard for electronic program interchange. The achievement of this goal would give us an electronic equivalent of 35mm film for high-quality program distribution, a great value to filmmakers. It could wipe out costly, troublesome, and quality-damaging conversion in providing material for today's television. It will avoid multiple standards, duplicate vaulting, and massive record-keeping requirements. We enthusiastically support this important objective of one worldwide HDTV standard.

No discussions of imaging and sound in motion pictures would be complete these days without taking notice of the 3-perf 35mm and the 30 frame/sec proposals. One offers economy without loss of quality while the other holds out higher quality. Taken together in a combination package they still provide a savings in film cost. What could be better — extra quality at less money.

We at Universal City Studios have certainly examined both proposals. With regard to 3-perf 35mm film, we



The SMPTE booth attracted a steady stream of visitors.



*Crowds at the registration area.*

are testing a range of scenarios for adopting it in various sectors of our operation. The savings in negative cost and insignificant quality penalty in transfer to videotape makes it attractive for the shoot-on-film, edit-on-tape type of operation. Application to traditional film post-production requires equipment modification in the editorial, sound, and optical departments, and the jury is still out on this.

The use of 3-perf film in feature distribution as pioneered in Sweden is very attractive. The need to convert exhibition projectors for a convenient changeover operation is the sticky part of this proposal, and while it has real value it requires more attention.

The proposal to change film production from 24 to 30 frame/sec was made by an MPA representative. It was based on not only resolving the frame-rate disparity between film and 60-Hz television systems, but more importantly because of quality

attainments in theaters as well as tele-cines. Thirty frame/sec film is great for originating material for TV and for special-purpose screenings, but the consensus at Universal is that 24 frames/sec will remain firmly entrenched for general cinema release.

It is often said a picture is worth a thousand words, but without sound, motion pictures would be a shallow pantomime with limited story-telling ability. The public attraction to 70mm screenings is attributed more to the improved sound of this format than to the bigger picture. Several laboratories are presently working toward digital sound on release prints. My only question is if compact disc (CD) sound quality is available on our release prints, will exhibitors truly equip and maintain their theaters to present their customers with that full sound quality.

The most immediate value of digital sound to moviemakers rests in the flexibility to store, edit, and modify

sounds required for rerecording. From the standpoint of the studio, digital sound offers hope for better methods of post-production. Sound in the digital domain opens up new flexibility and versatility in editing and mixing. Unfortunately, the cost of hardware and recording materials remains high, but we continue to remain alert for the anticipated breakthrough in technology that will close the door on magnetic film as a sound post-production medium. We must consider all of these items as we approach this conference and in the months and years ahead.

I want to express to all of you who are still awake my sincere thanks and appreciation for having had an opportunity to address such a prestigious group. I only hope that you will not wait 20 years to invite back the next person from Universal, or, for that matter, from the film industry. Thank you very much.

# SMPTE Board of Governors Meeting

The Board of Governors of the Society met October 29 at the Westin Bonaventure Hotel. As the governing body of the SMPTE, the Board de-

termines policy that determines all Society activities within the framework of the SMPTE Constitution and By-laws. The Board holds three regularly

scheduled meetings each year, one of which takes place at the annual fall technical conference.



*SMPTE officers at Board of Governors meeting. (L-R) Engineering Vice-President Richard G. Streeter, Financial Vice-President Stephen D. Kerman, Executive Vice-President Maurice L. French, President M. Carlos Kennedy, Past-President Harold J. Eady, Editorial Vice-President Howard T. La Zare, and Conference Vice-President Blaine Baker.*



*The Board of Governors in session.*

# Press Briefing

The Society's held its press briefing Friday, October 30, in The Huntington Suite of the Westin Bonaventure Hotel. As at previous conferences, this meeting with the representatives of the film and television trade press was conducted informally; it was, essentially, a question-and-answer period. Asking the questions (which pertained to the 129th Conference

technical program and equipment exhibit and to the the Society's standards activities in general) were the writers and editors of *Television Broadcast*, *Videography*, *Broadcast Engineering*, *Broadcasting*, *Electronic Photography News*, *Image Technology*, and other publications. Responding to the questions were SMPTE President M. Carlos Kenne-

dy, Ampex Corp.; Engineering Vice-President (at that time) Richard G. Streeter, CBS Broadcast Group; and other members of the Society's Executive Committee. The information shared by these officers, together with the printed articles contained in the press kit, provided the trades with background material on the conference.



SMPTE President M. Carlos Kennedy speaking at the press briefing.



Engineering Vice-President Richard G. Streeter responding to questions at the press briefing.



*Guests enjoying the Honors and Awards Luncheon.*

## Honors and Awards Luncheon

The Society's 1987 Honors and Awards Luncheon was held on Saturday, October 31, in the convention center's Petree Hall. Twenty awards for outstanding technical achievement, authorship, and service to the SMPTE and the industry were presented by the Society. SMPTE Sections Vice-President Irwin W. Young, Du Art Film Laboratories, Inc., was the recipient of the 1987 Progress Medal, the premier award of the Society.

Also announced at the luncheon was the addition of the name of the late George W. Colburn to the SMPTE Honor Roll, a distinction given to motion-picture and television pioneers. Colburn made significant technical contributions to the design and construction of 8mm printing and processing equipment.

Guest speaker at the Honors and Awards Luncheon was Jean Firstenberg, director of the American Film Institute (AFI), Los Angeles, Calif. In her speech, Firstenberg commended the Society for its achievements and acknowledged SMPTE members for their expertise on the technical side of the motion-picture and television business. She also described the services and programs of the AFI,



*President Kennedy welcoming guests to the Honors and Awards Luncheon.*

which during her seven-year tenure has undergone considerable growth. The text of the speech follows.

The Society officers who spoke at the luncheon were SMPTE Secretary Richard J. Stumpf, Universal City Studios, Inc. (who opened the luncheon); SMPTE President M. Carlos Kennedy, Ampex Corp. (who welcomed guests and introduced those on



*Executive Vice-President Maurice L. French introducing the winners of the 1987 awards.*

the dais); and SMPTE Executive Vice-President Maurice L. French, Canadian Broadcasting Corp. (who introduced the winners of the Society's awards for 1987). Recipients of the awards made brief acceptance remarks.

Descriptions of the SMPTE awards and biographical information appear in this issue.

# Honors and Awards Luncheon Address

## Jean Firstenberg

When Bud Stone and Carlos Kennedy first invited me to join you today as guest speaker, I had a few misgivings. I consider myself a fairly modern person — I have a cellular phone, a PC, a VCR, and my kids are pushing me towards a CD player. Still the thought of speaking to a huge group of motion-picture and television engineers was more than a little intimidating. You know, 15 minutes is a long time to have to fake it! And then Bud explained that I really hadn't been invited to talk to you about technology. But rather about the American Film Institute — and I breathed a sigh of relief. Then I thought, you mean, I've *only* got 15 minutes?

First, let me ask for a show of hands — how many of you are members of AFI? How many of you have been to an AFI program? Nineteen eighty-seven has been a landmark year for the AFI. This year the institute celebrated its 20th anniversary, and while that makes us the new kid on the block compared to SMPTE at more than 70 or Hollywood itself at 100, still coming of age has provided the opportunity to reflect on the past two decades and to see where we've been and where we're headed.

The AFI was created 20 years ago because the National Endowment for the Arts recognized that the moving images — film and television — had enormous potential to become the most powerful and pervasive art form or form of communication in history. Born as a technology and reared as an industry, this new medium required nurturing, celebrating, and preserving in order to achieve its full potential as an art form.

Enter the AFI — with the mandate to “preserve the heritage and advance the art” of the moving image. While you — the engineers and the technicians — provide the imagination that drives this art form, The American Film Institute strives to provide the educational and cultural context through which individual contributions can be evaluated and appreciated.



Jean Firstenberg, guest speaker at the Honors and Awards Luncheon.

The most visible ways that the AFI focuses public attention on the film and television arts is through the annual Life Achievement Award Tribute and monthly magazine, *American Film*. How many of you have seen a telecast of the Life Achievement Award?

Each year since 1975, the AFI has presented this award to an individual who “in a fundamental way has advanced the filmmaking art and whose work has stood the test of time.”

The first recipient was director John Ford, and the list of distinguished honorees includes James Cagney, Orson Welles, William Wyler, Bette Davis, Henry Fonda, Alfred Hitchcock, James Stewart, Fred Astaire, Frank Capra, John Huston, Lillian Gish, Gene Kelly, Billy Wilder, and Barbara Stanwyck. Two weeks ago, the AFI Board of Trustees selected Jack Lemmon as the sixteenth recipient of the award, which will be presented on March 10. In celebrating individual accomplishment, the LAA really celebrates the art form and ensures that the masters of film and television will take their place in history alongside the greats in other arts.

In a similar way, *American Film* magazine, which celebrated its 12th anniversary this year, provides a historical and cultural context for under-

standing the film and television arts to over 500,000 readers monthly.

Today, I want to tell you a little bit about some of the work that AFI does that is less “visible” in nature, but is really at the heart of the Institute's mandate — preserving our film and television heritage and nurturing and training tomorrow's film and videomakers. I know these are areas where the AFI and the SMPTE share common concerns.

When the AFI Board of Trustees met for the first time in 1967, they identified the preservation of America's film and television heritage as a number one priority. Since 1969, the AFI has safeguarded more than 23,000 films for conversion from nitrate stock in the AFI Collection at the Library of Congress. But there is much more to do. Of all the feature films produced in the U.S. before 1951, only half exist today. The rest have been lost, destroyed, or have deteriorated beyond repair. For newsreels, documentaries, and television programs, the survival rate is less than half.

Right now, staff at the AFI's National Center for Film and Video Preservation are coordinating a test to be conducted at the UCLA Film and Television Archives with the participation of MCA, 20th Century-Fox, and the Academy of Motion Picture Arts and Sciences. This experiment, using the Swedish Film Institute's Film Conditioning Apparatus, will investigate the feasibility of sealing film and video in metallic bags to protect moving images in long-term storage. Over the next eight years, this test will tell us more about the factors that cause deterioration and fading.

Not only do we rely on you, the engineers, to fuel this art form, but to invent and discover the means through which we can guarantee that it will endure as well. And we are pleased to participate in this effort alongside you. While film and television preservation is a very technical area, what that technology makes possible is something quite extraordinary — a living, moving history, not only of the cinema, but of modern life.

This Tuesday evening, an audience at the Dorothy Chandler Pavilion will

Jean Firstenberg, guest speaker at the Honors and Awards Luncheon during the 129th SMPTE Technical Conference, is director of the American Film Institute, Los Angeles, Calif.

have the opportunity to experience a brilliant example of film history and the significance of preservation. The AFI and the Los Angeles Philharmonic will present Sergei Eisenstein's 1938 classic, *Alexander Nevsky*.

The screening will be accompanied by a live performance of the original Prokofiev score by the L.A. Philharmonic under the direction of Andre Previn. Producer John Goberman, who conceived the project, succeeded in acquiring two first-generation prints, without subtitles, from the original nitrate negative at Gosfilmofond, the Soviet National Archive. He has created subtitles that will be projected beneath, rather than on, the print. The original sound for the film existed on three separate tracks. Goberman cleaned up the dialogue and sound effects tracks, and has replaced the music track with the live orchestra accompaniment. I wish that each of you could be there to see — and hear — the result! But we scheduled it, not knowingly, the same evening as your banquet.

I know that my time is almost gone, but before I finish I want to tell you about the lifeblood of the Institute. What makes it a joy to be associated with the AFI is the talented, young filmmakers who come to study at the Institute's Center for Advanced Film and Television Studies, its Directing Workshop for Women, and its TV Workshop.

Many of you here are familiar with these programs because your companies have supported them over the years through donations of equipment (like Panavision, Arriflex, and, of course, Sony, which made the Sony Video Center editing facility at the Institute possible); by providing lab processing for the students (like my good friends Bud Stone at Deluxe Labs and Tom Ellington at CFI); by underwriting specific programs, like Ampex and Ikegami, which supported the AFI Video Festival this year along with all the manufacturers who advertised in the Video Festival catalog; Grass Valley, which supported our Home Video contest, Visions, last year; 3M, which sponsored a video training residency at the Institute; and last but not least, our good friends at Kodak, which has provided film stock for Fellows at the Center over the years, which has made an ongoing annual contribution to the Institute and sponsors our Second Decade Council activities. They have really

## Gold Medal Sponsors

*The Agfa-Gevaert Gold Medal Award:* Agfa-Gevaert N.V.

*The Eastman Kodak Gold Medal Award:* Eastman Kodak Co.

*The John Grierson International Gold Medal Award:* National Film Board of Canada

*The Herbert T. Kalmus Gold Medal Award:* Technicolor, Inc.

*The Alexander M. Poniatoff Gold Medal for Technical Excellence:* Ampex Corp.

*The David Sarnoff Gold Medal Award:* General Electric Co.

*The Samuel L. Warner Memorial Award:* The Estate of Samuel L. Warner

*The Progress Medal Award:* The Society of Motion Picture and Television Engineers, Inc.

become more than a friend; they are a partner, a colleague, and a part of the AFI family.

When the AFI was established in 1967, there was a dream of creating a very special learning environment — an environment that differed from the academic film schools by providing aspiring filmmakers the opportunity to work closely with professionals from the field.

In 1969, at the Doheny mansion in Beverly Hills, the Center for Advanced Film and Television Studies admitted its first 17 students. Among that first class were directors Terry Malick, Tim Hunter, and Jeremy Kagan; writers Tom Rickman, Gil Dennis, and Paul Schrader; and cinematographer Caleb Deschanel.

Since then, more than 1000 young filmmakers have polished their skills and perfected their craft at the AFI. The success of AFI's training programs is dramatically illustrated by the accomplishments of AFI's alumni. AFI alumni have worked as directors, producers, writers, and cinematographers on more than 200 feature films, and they have directed, produced, and written more than 500 hours of prime-time television.

The writers include:

- Gil Dennis: (*Home Fires, Snap Shot, Return to Oz*)

- Matthew Robbins: (*Sugarland Express, director/writer of Corvette Summer, Dragonslayer*)

- Marshall Herskovitz: (*Special Bulletin, "Thirtysomething"*)

- Tom Rickman: (*The Coalminer's Daughter, The River Rat*)

Among the producers:

- Stuart Cornfeld, (*The Elephant Man, The Fly*)

- Moritz Borman (*Under the Volcano*)

- Jonathan Avnet (*Risky Business, "The Burning Bed"*)

And among the cinematographers:

- Caleb Deschanel (*The Natural,*

*The Black Stallion, The Right Stuff, Being There*)

- Juan Ruiz-Anchia (*The Stone Boy, At Close Range, That was Then, This is Now, Surrender, House of Games, Where The River Runs Black*)

- Toyomichi Kurita (*Trouble in Mind*)

- Robert Richardson (*Platoon, Wall Street*)

- Robert Elswit (*Amazing Grace and Chuck*)

- Fred Elmes, (*River's Edge, Heaven, Blue Velvet*)

- Karen Grossman (*Leader of the Band, Tweeners '87*)

- Timothy Suhrstedt (*Mannequin, Teen Wolf, Critters*)

Among the directors:

- David Lynch, (*The Elephant Man, Dune, Blue Velvet*)

- Jeremy Kagan (*The Chosen, The Sting II, The Journey of Natty Gann*)

- Tim Hunter (*Tex, The River's Edge*)

- Robert Mandell (*Independence Day, FX*)

- Paul Schrader, (writer/director *Taxi Driver, Mishima Light of Day,* and writer of *Mosquito Coast*)

- Martin Brest (*Beverly Hills Cop*)

- Randa Haines (*Children of a Lesser God, Something About Amelia*)

- Edward Zwick (*About Last Night, "Thirtysomething"*)

- Martha Coolidge (*Valley Girl, Real Genius*)

- Nessa Hyams (*Leader of the Band*)

- Peter Werner ("Moonlighting," "LBJ: The Early Years")

- Lee Grant (*Nobody's Child, Tell Me a Riddle*)

- Lesli Linka Glatter ("Amazing Stories," "Swallows, Come Home")

- Tom Moore (*'Night, Mother*)

- Jan Eliasberg ("L.A. Law,"

"Miami Vice," "Cagney & Lacey")

- Karen Arthur ("Cagney & Lacey," "Crossings")
- Michael Dinner (*Heaven Help Us, Hot to Trot*)
- Amy Heckerling (*Fast Times at Ridgemont High, Johnny Dangerously*)
- Donald Petrie ("L.A. Law," "Amazing Stories")

So, the next time that you see any of these names in a credit roll, I hope you'll think of the AFI and our commitment to nurturing tomorrow's filmmakers.

Tomorrow — that's something we've thought about a lot this year. As the AFI enters its third decade, we asked our trustees what they foresaw as the major challenges of the next 20 years. Almost every one of them listed adapting to and mastering the new technologies as the number one challenge.

No doubt the ways that we create, receive, and deliver moving images will undergo mind-boggling changes in the next 20 years, due to your imaginations, your tinkering, and your refusal to be content with the

status quo. And these changes will open a myriad of creative possibilities for the filmmaker — which brings me to the second challenge most frequently cited by our trustees, and that is to instill in the filmmaker a sense of responsibility of the power of moving images not only to entertain, but to enlighten as well.

I thank you all for the opportunity to talk to you today — and I look forward, as does the AFI, to facing these challenges together in the coming years.

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## The Honors and Awards Presentations of 1987

The Society presents a number of awards in recognition of outstanding achievements and confers certain grades of achievement annually. These awards have been created over a period of years.

Certain practices and rules are common to all the awards. Award Committees consist of five Honorary, Fellow, or Active Members of the Society appointed annually by the President and confirmed by the Board of Governors. The Journal Award Committee is appointed by the Editorial Vice-President. Membership in the Society is not a prerequisite for an award.

Any member of the Society is entitled to make a nomination for an award. Such nominations should be made in writing to the Chairman of the appropriate committee, giving the reason why the writer believes the award is justified. The Committees forward their reports to the Secretary of the Society in time for presentation to the Board of Governors at their mid-year meeting. Normally, awards are presented at the National Conference of the Society following approval of the award by the Board of Governors.

The highest award and greatest distinction that can be conferred by the Society is Honorary Membership, which includes eventual inscription on the Honor Roll of the Society. The Progress Medal is the premier medal award of the Society. The Agfa-Gevaert Gold Medal, the Eastman Kodak Gold Medal, the John Grierson

International Gold Medal, the Journal Award, the Herbert T. Kalmus Gold Medal, the Presidential Proclamation, the Outstanding Service to the Society Award, the Alexander M. Poniatoff Gold Medal Award, the David Sarnoff Gold Medal, and the Samuel L. Warner Memorial Award recognize achievement in the special fields of accomplishment described under each award on the following pages.

### The Citation for Outstanding Service to the Society

*The purpose of this citation is to recognize individuals for dedicated service to the Society over a sustained period of time.*

The 1987 Citation for Outstanding Service to the Society is presented to the following:

**Donald C. McCroskey**, ABC, Inc. (retired), in recognition of his many years of service to the Hollywood Section as a member of the Board of Governors, Secretary/Treasurer, Section Chairman, and Chairman of the Educational Committee; in addition to his serving as Topic Chairman at four SMPTE national conferences, and as Program Chairman for the 127th Technical Conference.

**John P. Pytlak**, Eastman Kodak Co., for his outstanding service to the Rochester Section, where in the ten-year period from 1975 to 1985, he held the offices of Program Chairman and Co-Chairman, Manager, Secretary/Treasurer, and Chairman. He

served the Society in six mini-conferences as Projection Chairman, Finance Chairman, and General Chairman, and as Session Co-Chairman on Projection Technology for the 128th Technical Conference.

**Norman A. Thelen**, Encyclopaedia Britannica Educational Corp., for his long history of service to the Chicago Section as Arrangements Chairman, Program Chairman, Secretary/Treasurer, and Section Chairman, in addition to serving as Registration Chairman (3 years), Assistant Finance Chairman (2 years), and Chairman (2 years) of the Chicago All-Day Section Meeting.

**Howard E. Wilkinson**, Canadian Broadcasting Corp., for his many years of active participation in Toronto Section activities, where he has served as Membership Chairman, Manager, and Section Chairman. Wilkinson is a strong supporter of the annual Mini-Conference of the Montreal/Quebec, Ottawa, Rochester, and Toronto Sections, and has served as Chairman of the 123rd Technical Conference, Adviser to the 128th Technical Conference, and as Session Chairman on several occasions. He has also held the position of Exhibit Chairman for the Society's 14th Annual Television Conference in Toronto.

**Donald C. McCroskey** retired from his position as manager of audio/video systems, ABC, Inc., Hollywood, Calif., after almost 40 years of service. A graduate of Washington State



Donald C. McCroskey, co-recipient of the Citation for Outstanding Service to the Society.

University with a B.S.E.E. degree, he was responsible for the design, planning, and supervision of video and audio studio equipment installations, including facilities for the 1984 Summer Olympics. Three of his papers have been published in the *SMPTE Journal*, and three have appeared in the *Journal of the Audio Engineering Society*. McCroskey is now a consultant to Ikegami Electronics, U.S.A., and is an active par-

ticipant in several SMPTE engineering committees and the Hollywood Section Education Committee.

**John P. Pytlak** holds the position of senior photographic engineer, motion-picture and audiovisual product development, Eastman Kodak Co., Rochester, N.Y. After graduating from the State University of New York at Buffalo with a B.S.E.E. degree, he joined Kodak. In 1976 he was responsible for developing the Laboratory Aim Density Control Method (LAD). In his present position at Kodak he acts as group leader for color positive (print) system development and film/equipment interface. Pytlak has served the Society as chairman of the SMPTE Working Group on Theatrical Film Damage (1979-80), as chairman of the SMPTE Theatrical Projection Technology Committee (1982-85), and as Eastern Region Governor (1986-87). He is a Fellow of the SMPTE, a Corporate Member of BKSTS, and a member of the Rochester Section of the Society of Photographic Scientists and Engineers (SPSE).



Norman Thelen, co-recipient of the Citation for Outstanding Service to the Society.

**Norman Thelen** is director of technical services, Encyclopaedia Britannica Educational Corp., Chicago, Ill., where he is responsible for all videotape and motion-picture lab work in both domestic and international markets. He is a member of the Chicago Film & Video Council, and an associate member of the Association of Cinema & Video Laboratories (ACVL).

## The Honors and Awards Committees for 1987

### HONORARY MEMBERSHIP

Harold J. Eady, *Chairman*  
Charles E. Anderson  
Leonard F. Coleman  
Kenneth M. Mason  
Robert M. Smith

### PROGRESS MEDAL AWARD

Maurice L. French, *Chairman*  
Blaine Baker  
Stephen D. Kerman  
Robert M. Smith  
Richard G. Streeter

### AGFA-GEVAERT GOLD MEDAL AWARD

Grant Dearnaley, *Chairman*  
Eric Knutsen  
John Pytlak  
Robert Ringer  
Howard E. Wilkinson

### EASTMAN KODAK GOLD MEDAL AWARD

Allan Craig Curtis, *Chairman*  
Gideon Flat  
Donald C. McCroskey  
Nelson Meacham  
Glen Pensinger

### JOHN GRIERSON INTERNATIONAL GOLD MEDAL AWARD

Norman A. Thelen, *Chairman*  
Jack Behrend  
Paul L. Deer  
Arthur Rescher

### HERBERT T. KALMUS GOLD MEDAL AWARD

Murray Forrest, *Chairman*  
Christoph Geyer  
Manfred G. Michelson  
Bengt O. Orhall  
William H. Smith

### PRESIDENTIAL PROCLAMATION

M. Carlos Kennedy, *Chairman*  
Blaine Baker  
Harold J. Eady  
Maurice L. French  
Stephen D. Kerman  
Howard T. La Zare  
Richard G. Streeter  
Irwin W. Young

### ALEXANDER M. PONIATOFF GOLD MEDAL AWARD

John Streets, *Chairman*  
Aubrey Harris  
Bruce Penney  
Grant M. Smith

### DAVID SARNOFF GOLD MEDAL AWARD

J. Wayne Caluger, *Chairman*  
Herbert C. Ohlandt  
Kerns Powers  
Andrew Setos  
Manfred Weiss

### SAMUEL L. WARNER MEMORIAL AWARD

Louis F. Wolf, Jr., *Chairman*  
Max Bell  
Donald C. Rogers  
Richard J. Stumpf  
Ronald E. Uhlig

### JOURNAL AWARD COMMITTEE

Frederick M. Remley, *Chairman*  
Lincoln L. Endelman  
Donald C. McCroskey  
Paul Mutter  
Rodger Ross

### CITATION FOR OUTSTANDING SERVICE TO THE SOCIETY

Irwin W. Young, *Chairman*  
Blaine Baker  
Pol T. Descamps  
Howard T. La Zare  
Richard G. Streeter



Howard E. Wilkinson, co-recipient of the Citation for Outstanding Service to the Society, receiving his award from President Kennedy.

**Howard E. Wilkinson** holds the position of manager, engineering services, Broadcast Centre Project, Canadian Broadcasting Corp. (CBC), Toronto, Ont., Canada, responsible for consolidating all CBC radio, television, and film facilities. Following his graduation from Carleton University, Ottawa, with a B.Eng. degree in electrical engineering, he held positions with several companies involved in the development and manufacture of broadcast television switching, processing, and production equipment. From 1968-1973 he was director of engineering, television facilities, at the University of Western Ontario. Prior to joining the CBC he was projects manager, Imagineering Ltd., Toronto, where his major responsibilities included global television network design and implementation. Wilkinson is a member of the Association of Professional Engineers of Ontario, a Fellow of the SMPTE, a Corporate Member of BKSTS, and a member of the SMPTE Board of Editors.

### The Presidential Proclamation

*The Presidential Proclamation recognizes individuals of established and outstanding status and reputation in the motion-picture and television industries worldwide.*

The Presidential Proclamation for 1987 is awarded to **Richard R. Green**, in recognition of his technical leadership in the Public Broadcasting Service, especially the PBS Hartford N. Gunn, Jr. Technical Center, and for his many years of support in SMPTE activities; **William A. Koch**, in recog-

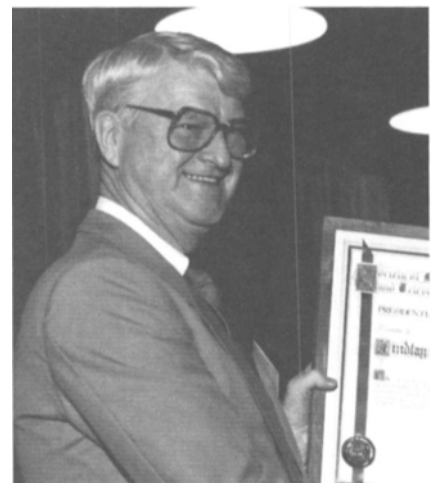
niton for his many years of innovative leadership in the motion-picture industry and his continuing strong support in SMPTE activities; and **Findlay J. Quinn**, in recognition for his technical leadership in the development of a strong motion-picture laboratory industry in Canada and for his many years of continuing support in SMPTE activities.

**Richard R. Green** is senior vice-president, broadcast operations engineering, Public Broadcasting Service, Alexandria, Va., where he is responsible for all technical aspects of the PBS. His academic achievements include a B.S. degree in physics from Colorado College, an M.S. in physics from the State University of New York, a Ph.D. from the University of Washington, and membership in Phi Beta Kappa. He holds several patents, including one for the electronic frame stabilization system. Green is the author of 50 technical papers, several of which have appeared in the *SMPTE Journal*.



William A. Koch, co-recipient of the Presidential Proclamation.

**William A. Koch** is vice-president and general manager, motion-picture and audiovisual products division, Eastman Kodak Co., Rochester, N.Y., where he is responsible for the marketing, manufacturing, and product development for all of Kodak's professional motion-picture and audiovisual programs on a worldwide basis. Koch holds a B.A. degree in physics and education, and is a member of the Academy of Motion Picture Arts and Sciences, a member of the British Kinematograph Sound and Television Society (BKSTS), and a trustee of the Rochester Area Educational Television Association, Inc.



Findlay J. Quinn, co-recipient of the Presidential Proclamation.

**Findlay J. Quinn**, vice-president of client services, Medallion Film Laboratories, Toronto, Canada, has been actively engaged in motion-picture laboratory and sound recording since 1945. A graduate of St. Patrick's College in Ottawa, Quinn is a Fellow of the SMPTE and of the BKSTS, and Past President of the Canadian Film and Television Association. He has been honored previously with the Canadian Genie Award and the Queen's Anniversary Medal.

### The Journal Award

*It is the purpose of this award to recognize the two outstanding papers originally published in the Journal of the Society during the previous calendar year; one in the field of motion pictures and the other in the field of television.*

## Motion Pictures

The Journal Award for a motion-picture article is presented to **Jonathan Erland** for his article, "Front Projection: Tessellating the Screen," published in the March 1986 issue of the *SMPTE Journal*.



Jonathan Erland, recipient of the Journal Award for a motion-picture article.

**Jonathan Erland** is director, research and development, Apogee Productions, Inc., Van Nuys, Calif., where he is actively involved in research on motion-picture technology, with a particular interest in visual effects composite photography. Erland received his early professional training in his native England, where he studied theater at the Central School of Speech and Drama, and film at the London International Film School. His background in industrial design prototype and product development, as well as industrial exhibition, led him to be involved in such projects as the New York World's Fair of 1964.

For the past several years, Erland has been working extensively in the field of motion-picture visual effects. He has been responsible for the development of a variety of technical processes, including special materials and sophisticated blue flux projectors for the films *Dune* and *2010*. His work has also been seen in *Star Wars*, *Close Encounters of the Third Kind*, *China Syndrome*, *Firefox*, *Never say Never Again*, and *Spaceballs*. He holds three issued patents, with others pending.

In 1984 the Academy of Motion Picture Arts and Sciences honored him with the Scientific and Engineering Award for the development of the Reverse Bluescreen travelling matte

process; and in 1985 he was the recipient of two Technical Achievement Awards for the Blue-Max blue flux front projector and for a new, improved method of front-projection screen fabrication. He has presented several papers on this work at Society conferences.

## Television

The Journal Award for a television article is presented to **Brian Wyvill**, **Craig McPheeters**, and **Rick Garbutt** for their article entitled, "University of Calgary 3-D Computer Animation System," published in the June 1986 *SMPTE Journal*.

**Brian Wyvill** is Associate Professor, Computer Science Dept., University of Calgary, Alberta, Canada. He holds a B.S. degree from the University of London, and a Ph.D. from the University of Bradford. Wyvill is a part of a graphics research group which built a computer animation system called Graphicsland, a hierarchical system which supports a wide range of modeling primitives including polygons, fractals, and soft objects. Their film, *Soft*, was awarded a prize in the Hitachi animation competition in Japan and at the international music video competition in 1987, and was also shown at Image du Future '87 in Montreal. The group's current activities include the near completion of a four-minute animation film called *The Great Train Robbery*, the redesign of the Graphicsland 3-D animation system, and

continued research on Soft objects. Wyvill is a member of ACM, CGS, Siggraph, and the editorial board of the *Visual Computer*.

No information about **Craig McPheeters** was available at the time of publication.

**Rick Garbutt** is vice-president, film production, of Say Cheese Productions, Calgary, Alberta, Canada. He holds a B.S. degree in chemistry and physics from the University of Calgary, where he became a student member of the SMPTE, the beginning of his long association with the Society. In 1978 he became a Corporate Member of the BKSTS. He has also earned membership in IATSE Local 667, Canadian Cameramen as a director of photography/camera operator, in addition to his earlier certification as a first-class projectionist, and he has worked on many feature films and commercials. His interest in special effects led him into digital animation, and he joined Dr. Wyvill's research team at the University of Calgary in 1984 as engineering consultant and digital cinematographer.

## The Agfa-Gevaert Gold Medal Award

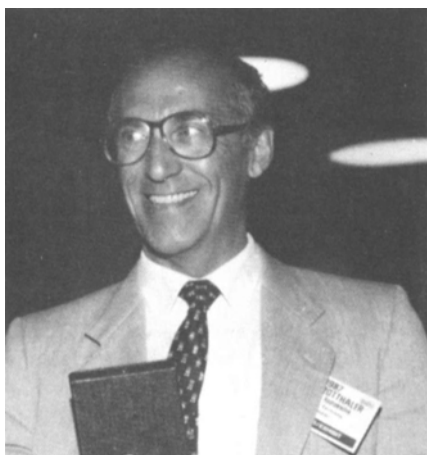
*It is the purpose of this award to honor the recipient by recognizing the individual's outstanding leadership, inventiveness, and/or other achievements in the research, development, or engineering of new techniques and/or equipment which result in a signif-*



Rick Garbutt (L) and Brian Wyvill (R) receiving the Journal Award for a television article from President Kennedy.

icant improvement to the interface between motion-picture film and television imaging systems, whereby the combined advantages both contribute to the further development of visual communications systems.

The 1987 SMPTE Agfa-Gevaert Gold Medal Award is presented to **Max Rotthaler** for his continuous contribution to the motion-picture and television industries. For the past 25 years, he has devoted his time in the development and improvements of the interface of film and television in the areas of colorimetry, steadiness, film equipment interface, and standardization.



**Max Rotthaler**, recipient of the Agfa-Gevaert Gold Medal Award.

**Max Rotthaler** has been head of the film department of the Institut für Rundfunktechnik (IRT), Munich, Federal Republic of Germany, since 1977. In this position he is responsible for the preparation of specifications for film and television camera lens performance, and the study of film characteristics as related to HDTV requirements. He has been associated with the IRT for over 25 years, following his graduation from Munich Technical University with a diploma in engineering.

Rotthaler has been responsible for a number of technical innovations, including the following: development of a color calibrator for monitors (patent for a visual comparator 1969), measurement of film granularity in television (1974), measurement of the luminance and colorimetric fidelity characteristics of telecines in Europe (1975-76), proposal for specifying the usable object luminance range of films intended for television (1979),

proposal for the measurement of the frictional properties of raw film stock (1982), and experimental determination of the maximum film density which can be handled by conventional telecines (1986).

Since 1984, Rotthaler has been chairman of EBU Sub-group G3 (Films in Television). He has presented five technical papers at SMPTE conferences, four of which have been published in the *Journal*. In addition to the SMPTE, he is active in the EBU, BKSTS, and International Organization for Standardization (ISO). He has also been honored with the 1987 Phil Berkeley Award by the BKSTS.

### **The Eastman Kodak Gold Medal Award**

*It is the purpose of this award to honor the recipient by recognizing outstanding contributions which lead to new or unique educational programs utilizing motion pictures, television, high-speed and instrumentation photography, or other photographic sciences. The award shall recognize developments in equipment, systems, or instructional applications which result in advancing the educational process at any or all levels.*

The Eastman Kodak Gold Medal for 1987 is awarded to **Robert M. Smith**, in recognition of his significant contribution to the development of educational seminars for dissemination of technical and laboratory information for both educational and commercial facilities.



**Robert M. Smith**, recipient of the Eastman Kodak Gold Medal Award.

**Robert M. Smith** is executive vice-president, Du Art Film Laboratories, Inc., president, Du Art Video, and member of the Board of Directors, Du Art Film Laboratories, Inc. He attended Ohio State University and Pace College, graduating with a degree in business, and he later obtained an associate degree in photography from the University of Sam Houston, USAF.

Smith joined the SMPTE in 1955, and has been active in numerous areas. In addition to serving as President for the 1979-80 term, followed by a year as Past-President, he served as Executive Vice-President, Treasurer, Manager of Education Services for the New York Section, and as both member and chairman of numerous committees. Smith is a Fellow of the SMPTE and of the British Kinematograph, Sound and Television Society (BKSTS), and a member of the FTRG (German Television Society), the Academy of Motion Picture Arts and Sciences (MPAS), and the National Academy of Television Arts and Sciences (NATAS). He has served as chairman of the NATAS Technical Achievement Award Committee since 1977.

### **The John Grierson International Gold Medal Award**

*It is the purpose of this award to honor the recipient by recognizing significant technical achievements related to the production of documentary motion-picture films.*

The 1987 John Grierson International Gold Medal Award is presented to **Ross Lowell** in recognition for his many achievements, inventions, and innovative developments in the field of lightweight lighting and of grip equipment. Improvements in the production values in documentaries have been made possible in large part because of the improved quality and controls of the lighting equipment developed and manufactured by Ross Lowell.

**Ross Lowell** is president, Lowell Light Manufacturing, Inc., New York City. He attended UCLA and USC, and has taught at the NYU Film School. Currently he is involved in designing lighting equipment, directing and shooting films, and writing a script for a feature film. As a cameraman, he pioneered the sym-



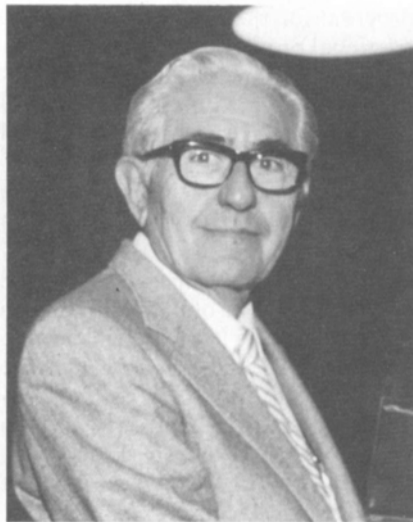
Ross Lowell, recipient of the John Grierson International Gold Medal Award.

bolic-focus-shift and intermittently-obscured-image techniques, which he used in documentaries he filmed such as *Faulkner's Mississippi* and *My Childhood*. These and other documentaries he has worked on over the past 30 years have won many awards, including The Peabody Award, Emmy Awards, Golden Eagles, an EFFLA Blue Ribbon, several Academy Award nominations, and an Academy Award. The film *Oh Brother, My Brother*, which Lowell wrote, directed, and shot, won seven awards and an Academy Award nomination.

Lowell has designed a number of lightweight, versatile, and efficient lighting systems, including a portable soft light and sun reflector, the Totalight and Omni-Light Systems, and other light-control and mounting devices. He has been granted eight patents for his inventions. In 1980 he received a Technical Academy Award Certificate for the development of his Lowel-Light system for motion-picture photography. He is a member of the Directors Guild of America, International Photographers 644, and other industry organizations.

### The Herbert T. Kalmus Gold Medal Award

*It is the purpose of this award to honor the recipient by recognizing outstanding contributions in the development of color films, processing, techniques, or equipment useful in making color motion pictures for theater or television use.*



Petro Vlahos, recipient of the Herbert T. Kalmus Gold Medal Award.

The 1987 Herbert T. Kalmus Gold Medal Award is presented to **Petro Vlahos** for his considerable contributions to the motion-picture and television industries, most notably in the areas of front and rear projection, travelling matte systems, and an electronic compositing system for use in television.

**Petro Vlahos** is president, Vlahos Motion Pictures, Inc., Lake Hughes, Calif., where he acts as a consultant in designing advanced Ultimatte for high-definition electronic production. He received a B.S.E.E. from the University of California at Berkeley, and in the following years held positions at various firms as a design engineer, radar field engineer, head of physical services group, and chief scientist at the AMPTP Research Center. In 1976 he founded the Ultimatte Corp., where he served as president until 1982, when he formed Vlahos Motion Pictures, Inc. He has devised numerous inventions for both motion pictures and television and holds over 35 U.S. and foreign patents, with many others pending. Vlahos is the recipient of an Oscar from the Academy of Motion Picture Arts and Sciences and an Emmy from the National Academy of Television Arts and Sciences.

### The Alexander M. Poniatoff Gold Medal for Technical Excellence

*It is the purpose of this award to honor the recipient by recognizing outstanding technical excellence of contributions in the research or development of new techniques and/or equipment that have contributed sig-*

*nificantly to the advancement of audio or television magnetic recording and reproduction.*

The 1987 Alexander M. Poniatoff Gold Medal for Technical Excellence is presented to **Alex R. Maxey** in recognition of a lifetime of innovation and design creativity which has formed the basis of the majority of the world's tape recording formats — truly an example of the excellence Alexander M. Poniatoff sought to foster.

**Alex R. Maxey** is principal engineer, advanced development, CMC, a division of Datatape, Inc., Santa Clara, Calif., where he is currently the lead mechanical engineer for development of DTTR technology. He has had 35 years of experience in the development of scientific apparatus and recording equipment. Maxey was a member of the five-man team at Ampex Corp. which developed the first rotary-head videotape recorder, introduced in 1956. He also pioneered the development of the omega-wrap helical scan recording method, which is utilized by all helical scan recorders produced today.

In 1964, Maxey co-founded Westel Co., which later became Echo Science or Precision Echo. He served in both product development and research facilities, and was responsible for many innovative developments. He left Echo in 1977 to rejoin Ampex Corp., where he was involved with design concepts pertaining to rotary data recorders until he joined Datatape Corp. in 1986.

Maxey is the designer or co-inventor of over 30 patented devices, many of which are vital to the video and



Alex R. Maxey, recipient of the Alexander M. Poniatoff Gold Medal for Technical Excellence.

instrumentation recording industry. He has received numerous awards for his work, including the Wescon Industrial Design Award of Merit, the Industrial Design Magazine Review Award, a Certificate of Appreciation from the National Association of Broadcasters, induction into the Video Hall of Fame, the Society's Alexander M. Poniatoff Award for Technical Excellence, and a SMPTE recognition award for his contribution to the first practical videotape recorder.

### The David Sarnoff Gold Medal Award

*It is the purpose of this award to honor the recipient by recognizing outstanding contributions in the development of new techniques or equipment which have contributed to the improvement of the engineering phases of television, including theater television.*

The 1987 David Sarnoff Gold Medal Award is presented to **Yves Faroudja** for his contributions in optimizing NTSC signal performance by developing techniques presently used in video processing equipment.

**Yves C. Faroudja** is founder and president of Faroudja Laboratories, Inc., Sunnyvale, Calif., where his current technical work focuses on optimizing NTSC signal performance at all stages to approach performance of high-definition television without a change in standard or bandwidth.

Faroudja graduated from the Ecole Supérieure d'Electricité, Paris, with an M.S. degree in electrical engineering. He worked at ITT Research Laboratories in France and at NATO in Italy as a research engineer until 1965, when he moved to the U.S. While working in Europe, Faroudja participated in three engineering "firsts": the development and implementation of the first tide-power plant in the Rance estuary, the first transistorized Doppler radar, and the first laser activated on that continent.

After arriving in the Bay Area 20 years ago, Faroudja worked in the area of color television, both as an engineer and as a consultant. In 1981 he founded Faroudja Laboratories, Inc. The company has been instrumental in improving noise-reduction and enhancement technologies, and more recently, in developing NTSC encoders and decoders. Faroudja has



*Yves C. Faroudja, recipient of the David Sarnoff Gold Medal Award.*

developed and patented a number of significant new techniques for the improvement of color television images on professional and consumer VTRs, VCRs, cameras, and monitors.

Faroudja is a Fellow of the SMPTE, a member of the Institute of Electrical and Electronics Engineers (IEEE), Association des Anciens Elèves, National Association of Broadcasters (NAB), and Advanced Television Systems Committee (ATSC), in addition to his acting as a technical consultant to various U.S. and foreign companies. This year he was also honored with the 1987 Monitor Award for excellence in engineering. Faroudja has presented a number of papers at SMPTE conferences, several of which have been published in the *SMPTE Journal*.

### The Progress Medal Award

*It is the purpose of this award to honor the individual by recognizing outstanding technical contributions to the progress of engineering phases of the motion-picture or television industries.*

The 1987 Progress Medal, the premier award of the Society, is presented to **Irwin W. Young** in recognition of his devoted energies and commitment during his professional career to both the motion-picture and television industries. His early work resulted in a color laboratory which processed the first 35mm color feature film. He encouraged young filmmakers in film schools by offering grants, awards, and film processing at reduced rates. Irwin Young and the Du Art sound engineers improved the signal-to-

noise ratio on Gevachrome reversal print film silver optical sound tracks. His Du Art Frame Count Cueing System was recognized with a Technical Achievement Award by the Academy of Motion Picture Arts and Sciences in 1979. In the early 1980s, Irwin Young conceived an idea of conforming, in an optical camera, a color reversal intermediate or an interpositive of a complete edited subject from an uncut original camera negative. He designed a system of synchronizing the telecine with the videotape recorder and providing a means of inserting the scene accurately on any given field.

**Irwin W. Young** is chairman of the board of Du Art Film Laboratories, Inc., and Du Art Video, New York City, and president of Western Broadcasting Corp. of Puerto Rico. Following his graduation from Lehigh University with a B.S. degree in engineering, he joined Du Art Film Laboratories. Young is interested in all aspects of motion pictures, including science, technology, and entertainment. Several of the films he produced were honored with awards at the Venice Film Festival, the Cannes Film Festival, and the American Film Festival.

Young joined the SMPTE in 1955, and has served in many capacities. He was made a Fellow in 1975, and served a number of times as manager of the New York Section. Among other Society activities, he acted as Associate Program Chairman for the 111th SMPTE Technical Conference and as General Arrangements Chairman for the 120th Conference. Young served two terms as an elected Gover-



*Irwin W. Young, recipient of the Progress Medal Award.*

nor for the New York Region, and is currently serving his second year as Sections Vice-President. He has presented several papers at SMPTE conferences, many of which later appeared in the *SMPTE Journal*.

Young is also a Fellow of the BKSTS, a board member of the Independent Feature Project, and board chairman of The Moving Image, Inc. (Film Forum). He has been honored with several awards, including the following: in 1977, the Indie Award from the Association of Independent Video & Filmmakers (AIVF); in 1979, the Technical Achievement Award from the Academy of Motion Picture Arts and Sciences; in 1983, a Telluride Festival Silver Medallion; in 1984, the Friends of Independents Award — Independent Feature Project (IFP/West); and in 1986, the AIVF Indie Award, and the Eastman Kodak Award of Excellence.

### The Samuel L. Warner Memorial Award

*It is the purpose of this award to honor the individual by recognizing outstanding contributions in the design and development of new and improved methods and/or apparatus for sound-on-film motion pictures, including any step in the process.*

The 1987 Samuel L. Warner Memorial Award is presented to **Tomlinson Holman** for his important contributions to motion-picture sound, in particular his sustained work in theater electroacoustics, which have yielded better uniformity and quality of sound in theatrical exhibition.

**Tomlinson Holman** is corporate technical director of Lucasfilm Ltd.,



Tomlinson Holman, recipient of the Samuel L. Warner Memorial Award.

and assistant professor at the University of Southern California School of Cinema-Television. He studied engineering and communications at the University of Illinois, where he received a B.S. degree in communications. He worked as a sound mixer, audio design engineer, and chief electrical engineer at Advent Corp., where he was responsible for all audio design. In 1977 he founded Apt Corp., manufacturer of the Apt/Holman preamplifier and other high-fidelity equipment.

In 1980, he became chief audio engineer at Lucasfilm Ltd., where he supervised engineering for new facilities for all phases of filmmaking. Lucasfilm's *Return of the Jedi* was the first major film to be mixed, and was nominated for two sound-related Academy Awards. Holman developed and received a U.S. patent for the THX Sound System, and was a principal in starting Lucasfilm's Theatre Alignment Program. In 1984, Holman was made technical director for Lucasfilm Ltd. and its subsidiary, Skywalker Development, Co., and two years later he was named corporate technical director. In the fall of 1987 he began teaching film sound at the USC School of Cinema-Television, while acting as a consultant to Lucasfilm and others. He is presently involved in developing Home THX for optimum presentation of film program material at home, and working on the CP-250 dubbing stage monitoring system.

Holman serves on the Board of Editors for the *SMPTE Journal*. He is a Fellow of the Audio Engineering Society (AES), a past member of its Board of Governors, and also serves on the review board of its *Journal*. He is a member of the Acoustical Society of America (ASA), the IEEE, SMPTE, and BKSTS, and chairman of the SMPTE Audio Recording and Reproduction Committee. He has presented papers at the technical conferences of the AES, SMPTE, IEEE, and USITT, and has had several articles published.

### Honor Roll

*Elevation to the Honor Roll of the Society is granted to each distinguished pioneer who during his lifetime was awarded Honorary Membership or whose work was recognized subsequently as fully meriting the award.*



Former SMPTE President Leonard F. Coleman accepting the Honor Roll citation on behalf of the late George W. Colburn.

The name of the late **George W. Colburn** has been inscribed on the Honor Roll of the Society in recognition of his pioneering contribution in providing the motion-picture industry with standard test objects for 16mm and 8mm films and his innovative design and building of the necessary equipment to produce the test objects to set up the worldwide standards for the smaller format materials.

**George W. Colburn**, who died in 1973, was founder and chairman of the board of the Geo. W. Colburn Laboratory in Chicago, Ill. He was a leader in the motion-picture industry for more than 35 years, and was responsible for many innovations in both printing and processing techniques that have benefited the entire motion-picture industry.

Colburn joined the SMPTE in 1938 and was made a Fellow in 1948. He held a number of Society posts, including Governor (1952-53), Treasurer (1954-56), and Conference Vice-President (1963-64). He served as Manager of the Midwest section, Secretary-Treasurer, and Chairman of the Central Section, and on a number of committees. Many of the papers he presented at Society conferences later appeared in the *Journal*.

Colburn was also a founder and past-president of the Association of Cinema Laboratories (now the Association of Cinema & Video Laboratories, or ACVL). In 1973 he was posthumously awarded the Society's first annual John Grierson International Technical Award in recognition of technical achievements primarily related to the production of documentary motion pictures.

# Fellows Luncheon

The annual SMPTE Fellow Luncheon took place at noon on Sunday, November 1, in Petree Hall of the Convention Center. A reception for the Fellows sponsored by Magna-Tech Electronics Co., Inc., preceded the luncheon, which is held to honor the newly elected Fellows, to introduce them to their peers, and to present them with their plaques. Attendance at the luncheon is limited to Fellows and Life Fellows.

SMPTE President M. Carlos Kennedy opened the luncheon by greeting those in attendance. He then introduced the guest speaker, former SMPTE President John Frayne, who gave a talk on the Society's history. Following Frayne's remarks, plaques were presented to the 15 newly elected Fellows.



*SMPTE President M. Carlos Kennedy speaking at the Fellows Luncheon.*



*Past-President Harold Eady addressing the Fellows.*

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## History of the SMPTE

### John G. Frayne

To better understand the situation that led to the founding of the SMPTE organization in 1916, one has to recall the problems facing the motion-picture industry at that time. The industry was facing a remarkable growth both at home and abroad and was beset with frustrations over incompatible equipment and complete lack of standardization, both domestic and foreign. To try to bring some order into this chaotic situation several organizations, including a unit of the U.S. Army, were formed. However, the mistrust between the competing groups was so intense that the effort was abandoned.

Out of this confused situation emerged an engineer, C. F. Jenkins, who in cooperation with E. K. Gillett and N. I. Brown agreed to form a new Society similar to the American Society of Mechanical Engineers, founded in 1909. Following the usual trials



*Former President John G. Frayne, Fellows Luncheon guest speaker.*

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Text of speech delivered at the Fellows Luncheon during the 129th SMPTE Technical Conference by John G. Frayne, a former President of the SMPTE.

and tribulations of forming a new Society, 25 engineering specialists attended the first meeting of the new SMPE in October 1916, in Washington, D.C. In this brief report, the author does not intend to describe in great detail the life and works of Jenkins. This feature has been covered in the February 1986 issue of the *SMPTE Journal*; however, a short summary is in order.

Jenkins was born on August 22, 1867, of Quaker parents, and graduated from Earlham College in Indiana in 1890. He came to Washington, D.C., as an employee of what is now known as the U.S. Coast Guard. He resigned in 1895 to devote his time to inventing. By May of that year, Jenkins and Armat had produced a motion-picture projector with a crude intermittent mechanism that is the basic principle upon which all projectors are based today. Aside from his keen interest in mechanical devices he was obsessed with what he called Radio Vision, and in 1914, working with the U.S. Army, he succeeded in sending radio pictures of a small revolving windmill several miles to his Washington, D.C., laboratory.

At the initial meeting of the Society, six committees were set up:

- Cameras and Perforations, Bell (Chairman)
- Projection, Brown (Chairman)
- Electrical Devices, Brown (Chairman)
- Optics, Jenkins (Chairman)
- Auditing, Akeley (Chairman)
- Membership, Jenkins (Chairman)

It should be noted these men were engineers or scientists rather than motion-picture engineers. In 1934, the duties were subdivided among five Vice-Presidents:

1. Executive Vice-President H. C. Silent
2. Financial Vice-President A. M. Ghint
3. Engineering Vice-President L. A. Jones
4. Editorial Vice-President, J. J. Crabtree
5. Convention Vice-President, W. C. Kunzman

It should be noted that the number 1 and 2 spots were filled by AT&T Co. engineers, while Eastman Kodak Co. filled the number 3 and 4 spots, and National Carlson Co. filled number 5.

Membership in the Society grew steadily as new techniques like sound

recording, color, etc., were added. The attached chart shows continuous growth from 16 to approximately 9000 in 1987. In 1917, the initiation fee was \$27. In 1924, the fee was raised to \$30 for Active Members and a fee of \$20 was set for the new grade of Associate. The present membership fee is \$50.00. In 1934, the membership grade of Fellow was set up and all Active Members were elevated to that grade. The first Fellowship Committee was established in 1938. The number of Fellows and Life Fellows has grown to approximately 426 in 1987, as depicted in the chart.

### Standardization

Jenkins, in his address to the membership in 1917, stated that the prime interest of the Society was to standardize the industry. Twelve basic standards were adopted at that time. Included were the 60 ft/min speed and 16 frames/sec. The width of the film was given as 1.375 in. and also as 35mm. The eventual adoption of the 35mm is generally attributed to the influx of cameras from France designed for the metric system. Later, 16mm and 8mm followed the earlier tradition. In 1926, the newer standards of 24 frames/sec and 90 ft/min speed came as a result of the introduction of sound. This synchronized film disc system called for a 16-in. disc rotating at 33 $\frac{1}{3}$  rpm, capable of reproducing up to 5 kHz with high fidelity. A large stock of 1200 rpm motors was available at G.E. Co. resulting, through gearing, in a film speed of 90 ft/min. This was very fortunate for the later sound-on-film system, permitting a sound quality at least comparable to that of the disc method.

From the inception of the SMPE it was decided to publish a technical journal of the proceedings of the new organization. The first edition of the *Transactions of the SMPE* appeared on July 24, 1916, and consisted of nine pages, including one paper on standards by Hubbard of the Bureau of Standards. A second edition of the *Transactions* appeared in October 1916, and consisted of 18 pages. The final edition of the *Transactions*, Vol. 13, was published in 1929 and consisted of 38 pages. It is interesting to note that the 1928 edition, covering the proceedings of the Lake Placid, N.Y., convention of that year, consisted of 30 articles dealing solely with sound recording and reproduction. This illustrates the intense interest in the

engineering problems associated with the new medium. In marked contrast, the current conference in Los Angeles has six papers dealing with the same subject. The first edition of the *SMPE Journal* appeared in 1930 and continued in production until the title was changed to *the Journal of the SMPTE* in 1950.

### Sections

As the size and influence of the Society grew, there arose a demand for local sections to play an important role in the developing industry. A West Coast Section was set up in April 1928, with C. H. Dunning as Chairman. A London Section was set up with 32 members. This section was abolished in 1930, in favor of the British Society of Motion Picture Engineers, now known as the British Kinematograph, Sound and Television Society (BKSTS). The Society now has 21 sections, with a Sections Vice-President on the Board. Today four student chapters are very active.

### Test Films

The production of sound test films for both 35 and 16mm films was started in 1933 by the Society but was abandoned later in favor of the Research Council of the Academy. The Society agreed to distribute the INPRC films but later decided to undertake the manufacture of these films. In the early 1950s, the Society made available magnetic sound test films for 35, 16, and 8mm dimensions. This has proved profitable for the Society, reaching \$100,000 by 1965.

### Television

It was pointed out earlier that Jenkins was interested in radio pictures or Radio Vision; the Society failed to take an active part in the development of television. The major Hollywood studios did not look favorably on what they considered a rival to their own products. Also, the entrenched Hollywood unions were strongly opposed. Partially as a result of this situation, the new television industry switched to the 16mm medium — bypassing the camera unions, and open to non-union operators. In spite of these problems, the Board of Governors at the 1949 meeting of the Society decided to embrace the new medium and become known as SMPTE. Today it is estimated that a large part of the Society's membership is oriented toward the newer medium.

## Awards

Largely through the efforts of the late John I. Crabtree of Eastman Kodak Co., the first of a series of awards known as the Progress Medal Award was presented in 1935 to E. C. Wente of the BTL. To date, this award has been presented to 45 members. Another suggestion by Crabtree was the Journal Award for the most outstanding paper of the year. Two awards are now given annually, one for motion pictures and one for television. Over the years several Gold Medal Awards were added: namely, the Agfa-Gevaert, E.I. du Pont, Eastman Kodak, John Grierson, Herbert T. Kalmus, Alexander M. Poniatoff, David Sar-noff, and the Samuel Warner. Other awards included the Citation for Outstanding Service to the Society, the Presidential Proclamation, The Photo-Sonics Achievement Award, and Special Commendation Awards. Recipients of these awards were at first honored at the annual Society Banquet. More recently the various Society awards have been presented at the Honors and Awards Luncheon.

## Committees

As the newer fields of technical activities engaged the interests of the Society, the number of committees has grown from the original six of 1916 to approximately 50 at latest count. Not all of these are directly related to the technical activities of the Society. Many are engaged in developing standards.

## Standards

The standards program in the SMPTE is supervised by the Engineering Vice-President. At this time there are eight technology committees; Audio, Educational (inactive), Industrial and Consumer Film, Film, Laboratory Services, New Television, Television, Theatrical Projection, and Television Recording and Reproduction.

The activities of these committees are coordinated by the Society's Standards Committee. Upon approval of a proposed standard by the Board of Governors or the Executive Committee for Standards Approval, it is recognized as an SMPTE Recommended Practice. This standard may then be submitted to ANSI for acceptance as an American National Standard.

For 70 years the Society has served as the medium for development of

standards worldwide. In 1950 the SMPE, recognizing the infant television industry, added an engineering committee to establish standards for the transmission of the motion-picture product. Little or no attempt was made to participate in the electronics fields, which was the responsibility of other engineering organizations.

To date, a total of 167 standards have been approved by the appropriate bodies, while 97 others are in process through the nine committees referred to above.

In addition to its activities in the domestic field, the Society cooperates closely with key international organizations such as:

- European Broadcasting Union (EBU)
- International Radio Consultative Committee (CCIR)
- International Electrotechnical Commission (IEC)
- International Commission on Illumination (CIE)
- International Organization for Standardization (ISO)

## Budget

As might be expected, the budget of expenditures in 1916 must have been a very modest figure. In 1922 it had reached the sum of \$21,000. This did not include out-of-pocket expenses of Society officers. The first complete report of 1940 showed a figure of \$27,205. By 1986, it had reached \$2,629,682.

The question of accepting advertising in the *Journal* was debated at length at the September 1928 Board meeting held in Lake Placid, N.Y. There was much discussion of the SMPTE becoming more of a commercial than a technical society. Further evidence of this was the increasing number of sales executives in the membership. The Board at that time was of the unanimous opinion that membership requirements be carefully studied with the view to maintaining our present technical and engineering standards. President L. C. Porter said, "Our organization should be one of motion picture engineers, by motion picture engineers, for motion picture engineers." However, as new technologies began to dominate the industry, the potential advertising revenues became too tempting to ignore. Finally, the pages of the *Journal* were open to advertising at the 1963 Conference.

The growth of the Society has made



BKSTS President Dennis Boxall.

necessary a big increase in staff and in an operating headquarters. Thus, the Society has gone from a staff of 2 in 1929 and a 2-room headquarters to a staff of 29 located at a new, modern building in White Plains, N.Y.

## Exhibits

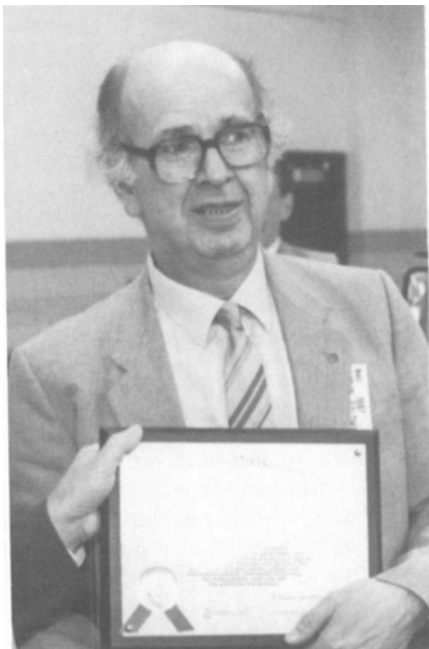
We are all familiar with the modern exhibit of motion-picture and television equipment such as we have here today in this Convention Hall in Los Angeles. The first equipment exhibit was held in 1931 and was located in two basement rooms of the old Hollywood Roosevelt Hotel. It was free and consisted of four or five entries. In 1933 exhibitors were charged for use of space at the Hollywood American Legion Hall. By 1986 we had 272 exhibitors using 807 10×10 booths.

We have come a long way from 1916, and I am sure we shall continue to grow in members and in wisdom in the future. I hope that we shall never lose the enthusiasm and ingenuity of the founding members. I sincerely believe that this organization of Fellows is the logical one to carry on the traditions and dreams of that small band back in 1916 in Washington, D.C.

The writer wishes to express his thanks to the Executive Director of the Society, Lynne Robinson, and to Alex Alden, now retired Manager of Engineering, for his outstanding cooperation and advice in preparing this report.

# New Fellows of the SMPTE

A Fellow of the SMPTE is one who is no less than 30 years of age and who has, by his proficiency and contributions, attained an outstanding rank among engineers or executives of the motion-picture, television, or related industries.



*John L. E. Baldwin*

**John L. E. Baldwin** is staff engineer, development, for the Independent Broadcasting Authority in England. He serves as a consultant on advanced television, including digital component standards, recorders, and systems. Baldwin is the holder of some 75 patents for his inventions in the television field, and his technical achievements have been recognized internationally.

Baldwin received a B.S. in physics from London University. He joined Rank-Cintel in 1950, and spent a total of 14 years in a research and development capacity with that company. He went to Philips in 1964, and joined the Independent Broadcasting Authority in 1967.

John L. E. Baldwin has participated in the engineering work of several Society groups, including the Task Force on Digital Standards and the Digital Television Tape Recording (DTTR) Working Group. Additionally, he has served on the Video Cod-

ing Standards and MAGNUM Digital Television Recording groups of the European Broadcasting Union (EBU), and on the International Radio Consultative Committee's (CCIR) Joint Interim Working Party on Digital Recording.

Baldwin has been the recipient of the Geoffrey Parr and PYE Color Television Awards of the Royal Television Society (1972), the David Sarnoff Gold Medal Award of the SMPTE (1975), and the Achievement Gold Medal at Montreux in 1977. He has been presented two SMPTE Journal Awards for outstanding television papers, one in 1984 for "Analog Components, Multiplexed Components, and Digital Components — Friends or Foes" (published in the December 1983 issue), and the other in 1986 for "Enhanced Television — A Progressive Experience" (September 1985).

Baldwin, from Hampshire, England, is a Fellow of the Royal Television Society and a member of the Institute of Physics.



*John A. Bonner*

**John A. Bonner** is chief engineer at Warner Hollywood Studios, Hollywood, Calif. He is responsible for technical design of the studio and for systems installation and maintenance.

Bonner attended Occidental College and UCLA, receiving a B.S. in physics from the latter in 1961. He worked as an engineer and sound director for Todd-AO Engineering and

Twentieth Century-Fox, respectively, before joining Warner Studios. Bonner installed an updated sound system for the Academy of Motion Picture Arts and Sciences.

A resident of Los Angeles, Calif., Bonner is affiliated with the Audio Engineering Society and the Academy of Motion Picture Arts and Sciences.



*Michael V. Chewey*

**Michael V. Chewey** is founder and president of Systems Unlimited, Woodland Hills, Calif. He has worked in the field of systems design for more than 20 years, and has created innovative applications for computers in the motion-picture laboratory.

Chewey, who attended Wichita State University and the University of Southern California (at Los Angeles), joined MGM Laboratories in 1966. During his 14-year tenure there as chief electronics engineer, Chewey made several important technical contributions. He designed and directed the installation of the first computerized systems ever used at MGM. He spearheaded MGM's conversion to computerized frame count cueing, developing many unique benchmark programming techniques and system design configurations. Another significant contribution was the Light Valve Saver, a programming and hardware design that reduces the number of light valve firings required for scene-to-scene color correction. In addition, Chewey designed the film industry's first paper tape

reader system and a computerized paper tape programmer. For the latter, MGM Laboratories received an Academy Award for technical achievement (1980).

Chewey left MGM in 1980. Recently, he designed a network system which connects analyzers, synchronizers, and retiming stations. It was the first such system in the industry. At Systems Unlimited, Chewey continues to design advanced computer systems and networks.

Michael Chewey has presented numerous technical papers on lab computerization at SMPTE conferences and section meetings; several have been published in the *SMPTE Journal*. An active member of the Society since 1966, he has served at SMPTE technical conferences as Topic Chairman, Facilities Chairman, and General Arrangements Chairman (1985 and 1987). He is also affiliated with the Association of Cinema and Video Laboratories; British Kinematograph, Sound and Television Society; and the Academy of Motion Picture Arts and Sciences.

Chewey is a resident of Woodland Hills, Calif.



David Samuelson accepting the plaque for Jonathan Erland.

**Jonathan Erland** is director of research and development for Apogee Productions, Inc., Van Nuys, Calif. He is actively involved in research on motion-picture technology, with a particular interest in visual effects composite photography.

Erland received his early professional training in his native England, where he studied theatre at the Central School of Speech and Drama, and

film at the London International Film School. His background in industrial design prototype and product development, as well as industrial exhibition, led him to be involved in such projects as the 1964 World's Fair in New York.

For the past several years, Erland has been working extensively in the field of motion-picture visual effects. He has been responsible for the development of a variety of technical processes, including special materials and sophisticated blue flux projectors for the films *Dune* and *2010*. His work has also been seen in *Star Wars*, *Close Encounters of the Third Kind*, *China Syndrome*, *Firefox*, *Never say Never Again*, and *Spaceballs*. He holds three issued patents, with others pending.

In 1984, the Academy of Motion Picture Arts and Sciences honored him with the Scientific and Engineering Award for the development of the Reverse Bluescreen travelling matte process; and in 1985 he was the recipient of two Technical Achievement Awards for the Blue-Max blue flux front projector and for a new, improved method of front-projection screen fabrication. He has presented several papers on this work at Society conferences.

Jonathan Erland resides in Los Angeles, Calif. He is also this year's recipient of the Journal Award for a motion-picture article.



E. Royal Hanna

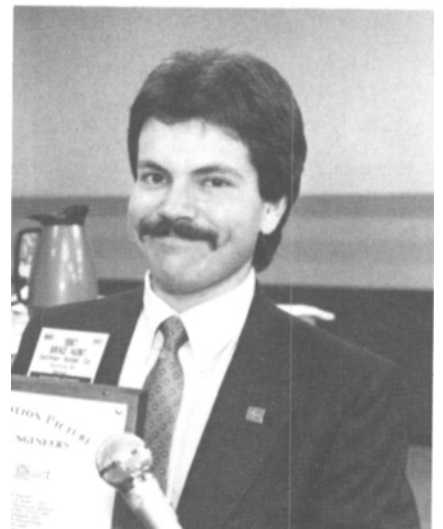
**E. Royal Hanna** is product development manager in the Motion Picture and Audiovisual Products Division of Eastman Kodak Co., Rochester, N.Y.

Hanna, who has a B.S. in chemistry

from the University of Notre Dame and a Ph.D. in the same discipline from the University of Rochester, joined Eastman Kodak in 1958. He worked briefly in the area of synthetic chemistry before moving to the Emulsion Research Division of the company's Research Laboratories (KRL). There, Hanna became involved in silver halide emulsion preparation and film building for various color film applications. Much of his research was in connection with Kodak's Ektachrome film line.

In 1978, Hanna was appointed a laboratory head in KRL, with responsibility for motion-picture and reversal films. He was named to his present position in 1984.

E. Royal Hanna is affiliated with the Society of Photographic Scientists and Engineers and the American Chemical Society. He resides in Mendon, N.Y.



C. Bradley Hunt

**C. Bradley Hunt** is marketing planning coordinator for electronic products, Motion Picture and Audiovisual Products Division, Eastman Kodak Co. He has been with the Rochester, N.Y.-based company for 11 years.

Hunt attended the Rose Hulman Institute of Technology, Terre Haute, Ind. He graduated in 1976 with a B.S. in chemical engineering, then joined Eastman Kodak as a photographic engineer. Hunt's technical work led to the development of improved color motion-picture print films, enhanced methods for the restoration of faded color movies, and more efficient procedures for the setup of telecine equipment. Hunt described his meth-

ods for restoring faded color movies in a paper titled "The Corrective Reproduction of Faded Color Motion Picture Prints," for which he received a 1982 Journal Award from the SMPTE.

Later in his career, Hunt was transferred to New York City, where he provided technical services to film laboratories and production facilities in that market. He is currently at the company's Rochester headquarters, and resides in Pittsford, N. Y.



Fung Fai Lam

**Fung Fai Lam** is currently a vice-president at Sony of Canada Ltd., Willowdale, Ont. His 30-year career in television engineering has been marked by several pioneering technical accomplishments, among them the installation of the first television station in Hong Kong and the development of a video captioning system for the People's Republic of China.

Fung Fai Lam studied telecommunications engineering at a radio college before enrolling in television engineering programs at the University of Hong Kong, University of Toronto, and EMI Institute. In 1957, he joined Rediffusion International Ltd., Hong Kong, where he became involved in studio recording.

As vice-president at Sony of Canada, Lam is responsible for engineering, quality control, and all other technical aspects of the company's broadcast product lines. He also oversees publications, product service, and the training of personnel.

Fung Fai Lam has served as man-

ager, membership chairman, secretary/treasurer, and chairman of the SMPTE Toronto Section. He is a member of the Institute of Electrical and Electronics Engineers, Society of Broadcast Engineers, Royal Television Society, and Audio Engineering Society, and has been active in teaching Canadian engineers and technicians. He currently resides in Mississauga, Ont.



William C. Nicholls

**William C. Nicholls** is director of systems development in the Operations and Engineering Division of CBS, Inc., New York, N.Y. He has responsibilities for schedules and budget and directs the development of new technical systems for the network. During his technical career at CBS, Nicholls has worked on several key projects, including the development of slow-motion video disc recording, computer-controlled videotape editing, and the network's teletext service. He was also involved in the engineering of CBS's widely-acclaimed single-camera edit system.

Nicholls graduated from Purdue University in 1959 with a B.S. in electrical engineering. He worked in the engineering departments of WCCO-TV, Minneapolis, Minn., and WREX-TV, Rockford, Ill., before joining CBS. Nicholls is affiliated with the European Broadcasting Union and currently serves on the SMPTE Television Recording and Reproduction Technology Committee. He is a resident of Hastings-on-Hudson, N.Y.



John C. Norris

**John C. Norris** holds the position of product planner for Eastman Kodak Co., Rochester, N.Y. He has been with the company for 23 years.

Norris attended the Carnegie Institute of Technology from 1960 to 1964, graduating with a B.S. in chemical engineering. Between 1964 and 1974 at Kodak, he assisted in the development of several of the company's motion-picture products and had responsibility for product evaluation. Norris described his engineering activities during that ten-year period in numerous technical papers that were published in the *SMPTE Journal*.

In 1974 Norris assumed a somewhat different role at the company. He became more involved in technical sales for the Motion Picture and Audiovisual Dept., responsibilities which required Norris to work in the company's Hollywood, Dallas, and New York City markets. While in Dallas and New York, he organized seminars for film producers, motion-picture laboratory technicians, and college students. In 1986, Norris returned to the Rochester corporate headquarters, where he is currently product planner for motion-picture products.

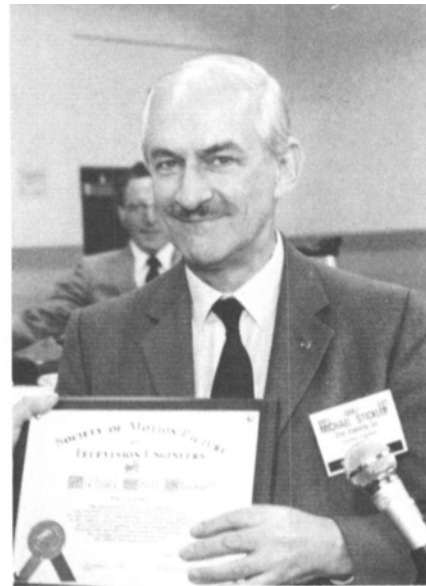
For the SMPTE, Norris served as chairman of the Dallas/Fort Worth Section and, in 1983, as a Society Governor. He is a member of the British Kinematograph, Sound and Television Society. He is a resident of Rochester, N.Y.



John P. Rossi



Mark L. Sanders



Michael J. Stickler

**John P. Rossi** is president of Intelvideo, Inc. Under his direction, the Stamford, Conn.-based company has been developing the technology for optimizing the encoding, processing, and transmission of NTSC and HDTV color television signals.

Rossi, who received a B.S. in electrical engineering from Manhattan College and an M.S. in the same discipline from New York University, has been, through the years, an active and involved member of the SMPTE, European Broadcasting Union (EBU), and Institute of Electrical and Electronics Engineers (IEEE). He has served on several SMPTE study groups and working groups, as well as a number of EBU technical groups. Rossi has presented a number of technical papers at national and international conferences, one of which received a Best Paper Award at an IEEE symposium. He has 16 published articles to his credit. A holder of eight U.S. patents, Rossi resides in Stamford, Conn.

**Mark L. Sanders** is vice-president of marketing and new technology at Ampex Corp., Redwood City, Calif. His key role is to identify and develop opportunities for growth within each division of the company.

Sanders graduated from California Polytechnic University with a B.S. in electrical engineering and from Golden Gate University with a masters degree in business administration. He worked for Hycon Corp. and Lockheed Electronics before joining Am-

pex in 1969. He held various marketing and engineering positions at Ampex between 1969 and 1983, including general manager of the videotape recorder group, senior product manager, product manager for helical video equipment, and manager of professional audio products.

In 1983, Sanders was promoted to vice-president and general manager of Ampex's Audio-Video Systems Division. Over the following three years he led the division into several new product areas, technologies, and markets. Sanders was the primary architect of the company's recent agreements with Sony and Cubicomp, which allowed Ampex to enter the small-format and 3-D graphics markets with proven technologies and products.

Sanders delivered the keynote address at the 128th SMPTE Technical Conference and Equipment Exhibit, held last year in New York City. His presentation, which explored methods by which individuals and organizations can cope with technological change, was considered by many to be a highlight of the conference. Sanders resides in Woodside, Calif.

**Michael J. Stickler** is the deputy head of planning and installation in the Television Dept. of the British Broadcasting Corp., London, England. During 34 years at the BBC he has been involved in several significant technical projects, including the commissioning and subsequent development of the corporation's television

center, the introduction of color television, and the planning of digital systems.

Stickler joined the BBC immediately following his graduation in 1953 from the University of London, where he earned a B.S. in electrical engineering. He spent his first few years in the BBC's Radio Dept. before transferring to the television side, where he held various management positions in television recording, studio operations, and equipment planning. Stickler was appointed deputy head of planning and installation, Television Dept., in 1986.

Stickler's engineering committee work and published technical papers clearly reflect his expertise in the field of broadcast equipment control systems. Since 1980, he has been chairman of a European Broadcasting Union (EBU) Specialist Group on Remote Control which, jointly with the SMPTE, developed the EBus serial communications standard. He has also served, since 1982, as chairman of EBU's Ad-Hoc Group on Digital Video Interface Standards. Published articles include "The Remote Control of Broadcasting Studio Equipment" (*International Broadcast Engineer*, November 1985) and "The EBU Parallel Interface for 625-line Digital Video Signals" (*EBU Review*, June 1984).

In addition to his affiliation with the EBU, Stickler is a member of the Royal Television Society and Institution of Electrical Engineers. He lives in Herts, England.



*George T. Waters*

**George T. Waters** is the director of the technical center at the European Broadcasting Union (EBU). During his 30 years in the broadcast engineering industry — 28 of them at Radio Telefis Eireann (RTE), the national broadcasting network in Ireland — Waters has been involved in international committee work with many organizations.

Waters was educated at St. Muredach's College, the College of Technology, and University College (Dublin). He received a bachelor's degree in mechanical and electrical engineering from University College in 1956, then went to work for the Dept. of Posts and Telegraphs as an assistant engineer. Waters stayed there for just one year before joining RTE (the organization was called Radio Eireann in 1957) as an executive engineer. At the time, the television industry was in its infancy in Ireland.

Waters received steady promotions at RTE, advancing through the corporate ranks from executive engineer to senior engineer of television to assistant director of engineering in 1963. He returned to University College in 1965 and graduated with a master's degree in business administration in 1967. Waters was appointed director of engineering at RTE in 1968 and director general of the organization in 1978. In 1985, Waters left RTE to become chief executive at Europa Pan-European Television. He assumed his current position at the EBU in January 1986.

George Waters' involvement with international broadcasting organizations has been extensive. He has served as chairman of Dublin Cable

Systems and the Institution of Electrical Engineers. He's been a member of the International Council of the National Academy of Television Arts and Sciences, International Broadcasting Convention, and Ireland's Radio Commission. Waters currently serves as Secretary of the EBU Technical Committee.

Waters, who lives in Belgium, is a Fellow of the Institution of Electrical Engineers and the Institution of Engineers of Ireland.



*Stan Baron accepted the plaque for S. Merrill Weiss.*

**S. Merrill Weiss** is managing director of systems engineering at NBC Inc. His responsibility is for the technical design of, and equipment implementation for, the network's broadcast facilities in New York City.

Weiss has been involved in the technical design of broadcast facilities over much of his 20-year broadcast engineering career. To his credit are two television stations, two radio stations, and an operations center for a public television network. Weiss conceived, engineered, and implemented the first system using RS-422 digital equipment control technology. He worked at Metromedia, Westinghouse Broadcasting Co. (Group W), WHYY-TV, and Imagex Corp. before joining NBC.

Weiss has been active in the engineering working groups of the SMPTE. He is chairman of the Working Group on Component Analog Video Standards and the Working Group on Studio Video Standards, and is a member of the Working Group on Digital Video Standards.

At the 16th Annual SMPTE Television Conference in San Francisco,

Calif., Weiss gave the broadcast industry its first look at component-coded digital video. The demonstration led to the international agreement embodied in CCIR Recommendation 601. Weiss's tests on serial digital control laid the groundwork for ESub, the serial communications standard jointly developed by the SMPTE and the European Broadcasting Union for interfacing equipment in a television facility.

Merrill Weiss has presented more than 25 technical papers at SMPTE conferences and section meetings, International Broadcasting Conventions, annual conventions of the National Association of Broadcasters (NAB), and various meetings of the Society of Broadcast Engineers (SBE). He is also an SBE member. A graduate of the Wharton School of the University of Pennsylvania, Weiss resides in Edison, N.J.



*Louis F. Wolf, Jr.*

**Louis F. Wolf, Jr.**, is director of videotape operations for Universal City Studios, Universal City, Calif. He has made several significant technical contributions to the video industry during a 37-year career.

Wolf worked in radar engineering during a stint in the U.S. Air Force. When he returned from military duty, he enrolled in courses at UCLA. In 1951, he joined KTLA-TV. Wolf started at the Hollywood, Calif.-based television station as a video control engineer, then was promoted to assistant chief engineer and, later, to

director of engineering. While at KTLA, Wolf was involved in applying the technology affecting the transition of television from monochrome to color. He helped to pioneer ENG remote broadcast production, and had supervisory responsibility for KTLA's first television dramas to be produced on videotape.

Louis Wolf's record of service in the SMPTE Hollywood Section includes terms as manager, secretary/treasurer, and chairman. He is currently an SMPTE Governor in that section and since 1983 has been a member of the Hollywood Section/USC Educational Committee. Other organizational affiliations are the Society of Broadcast Engineers and Society of Television Engineers. Wolf resides in La Canada, Calif.

### Elected Fellows — 1987

John L. E. Baldwin  
*Independent Broadcasting Authority*

John A. Bonner  
*Warner Hollywood Studios*

Michael V. Chewey  
*Systems Unlimited*

Jonathan Erland  
*Apogee Productions, Inc.*

E. Royal Hanna  
*Eastman Kodak Co.*

C. Bradley Hunt  
*Eastman Kodak Co.*

Fung Fai Lam  
*Sony of Canada Ltd.*

William C. Nicholls  
*CBS, Inc.*

John C. Norris  
*Eastman Kodak Co.*

John P. Rossi  
*Intelvideo, Inc.*

Mark L. Sanders  
*Ampex Corp.*

Michael J. Stickler  
*British Broadcasting Corp.*

George T. Waters  
*European Broadcasting Union*

S. Merrill Weiss  
*NBC, Inc.*

Louis F. Wolf, Jr.  
*Universal City Studios*

### Fellow Membership Committee

Harold J. Eady, *Chairman*

Herman Badler

Blaine Baker

John L. Baptista

John Barak

Stanley N. Baron

Paul R. Beck

Edward J. Blasko

Steven Bonica

John Carlson

Dominic Case

David Cmeyla

Allan Craig Curtis

John Damshock

Kenneth P. Davies

Birney D. Dayton

Grant Dearnaley

Pol T. Descamps

Bernard L. Dickens

Edmund M. DiGiulio

Herbert E. Farmer

Michael T. Fisher

Murray T. Forrest

Donna Foster-Roizen

John C. Gates

David George

Donald W. Henderson

Tomlinson Holman

Charles Jablonski

Glenn Kennel

Stephen D. Kerman

Rudolf Kryger

David P. Layne

Howard T. La Zare

Charles J. Lipow

Bebe McClain

Donald C. McCroskey

Russell McMurray

Edward J. Messina, Jr.

Duane Muir

Glen Pensinger

Robert Plummer

John P. Pytlak

Austin Reeve

Frederick M. Remley

Glenn Shank

L. John Spring, Jr.

Richard G. Streeter

John Streets

Richard J. Stumpf

John Swanson

Steven Tadzynski

Norman Thelen

Claude Tresidder

Robert Van der Leeden

J. David Walters

Louis Wolf, Jr.

Irwin W. Young



*The Fellows Luncheon.*

# Welcoming Reception

The welcoming reception, sponsored by Eastman Kodak Co., took place on Friday evening, October 30, in the California Ballroom of the Westin Bonaventure Hotel. Guests enjoyed cocktails, an open buffet, and music and dancing. As an added treat, Kodak arranged to have on display two mint-condition automobiles, the dream of any classic car enthusiast — a fire-engine red Chevrolet from the 50s and a shiny black Ford Thunderbird from the early 60s.



*The welcoming reception on Friday evening featured music and dancing.*



*Guests enjoying an open buffet at the welcoming reception.*

## SMPTE Booth

The SMPTE booth at the conference, well situated opposite the registration tables and front doors of the equipment exhibit on the main level of the convention center, attracted many visitors. Questions about membership in the Society, conferences, section meetings, and other programs of the

SMPTE, and about the *SMPTE Journal* and other publications were answered by 129th Conference Membership Chairman John Aalto, National TeleConsultants, and SMPTE Membership Manager Mary Connolly.

Approximately 200 people signed up for membership at the conference. A total of 108 SMPTE publications and 131 packets of preprinted technical papers were purchased.



*The SMPTE booth attracted a steady stream of visitors.*

## Coffee Club

Fuji Photo Film U.S.A., Inc., provided a coffee club for conference attendees, open from 8:00 to 10:00 on each morning of the conference.



*The coffee club was a popular spot for conference attendees.*

## Blood Pressure

The Will Rogers Institute offered free blood pressure tests to conference attendees. Volunteers from the institute worked from a booth on the second level of the convention center. Literature was available. The Will Rogers Institute, based in White Plains, N.Y., is a nonprofit health organization devoted to public education and medical research.



*The free blood pressure clinic.*

# SMPTE Banquet

As always, the cocktail party, banquet, and dance was one of the major highlights of the conference. The banquet was held on Tuesday evening,

November 3, in the California Ballroom of the Bonaventure Hotel. The theme of the evening was "The SMPTE Salutes Hollywood's Centennial," and during the reception preceding the banquet look-alikes of Marilyn Monroe, Dolly Parton, and

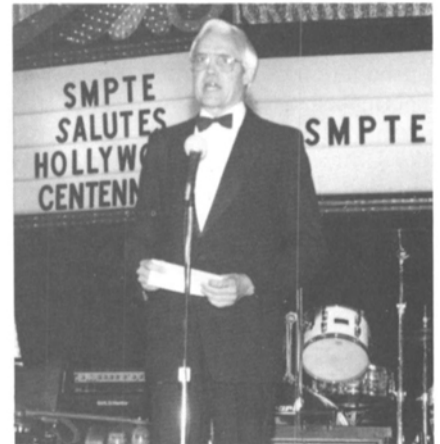
Burt Reynolds mingled with the guests. Attendees enjoyed an evening of entertainment and dancing featuring the Johnny Talon Quintet, Dolores Bedard, and Glenn Haywood.



President Kennedy thanking Judy Chewey for her work as Chairwoman of the Spouses' Program.



Editorial Vice-President Howard T. La Zare speaking at the banquet.



Conference Vice-President Blaine Baker had a few words to say at the banquet.



General Arrangements Chairman Michael V. Chewey delivering a few remarks.



Guests enjoying an evening of entertainment and dancing at the banquet.

# Spouses' Program

An outstanding program of events for spouses, under the direction of Chairwomen Judith Chewey and Jane Ringer, was arranged for the benefit of those attending the conference. The program was designed to take advantage of the many attractions of the Los Angeles area.

On Friday, October 30th, a reception tea was held in the Presidential Suite of the Bonaventure, and spouses were invited to register for the program of events. Saturday's program got under way with continental breakfast, followed by an astrological pre-



The Spouses' Program Committee in Halloween costume.

sentation by Alice Q. Reichard. Participants then had the option of attending the Honors and Awards Luncheon or lunching at Fisherman's Village and a cruise around Marina del Rey on the paddlewheeler *Showboat*.

On Sunday, after brunch, the spouses were treated to a trip to an Italian villa set in the 1920s and a production of *Tamara*, a mystery experienced as the viewer moves from room to room. On Monday, they went to Universal Studios for a specially-arranged VIP Tour, including lunch in the famous Universal Studios Commissary. On Tuesday morning, Cassandra Lawyer presented an exciting fashion seminar, with "the" Mr. Blackwell, chronicler of fashion's offenders. A champagne luncheon followed. Tuesday evening was devoted to the SMPTE banquet.

On Wednesday, following breakfast, the spouses visited the San Fernando Mission, which gained fame during the year as the site of a visit by



The Spouses' Committee assembled before the banquet. Chairwoman Judy Chewey is at far left.

Pope Paul. After a Mexican buffet at the beautiful Los Arcos restaurant, professional decorators led a tour of the Arte de Mexico, a Mexican marketplace.

Co-Chairwomen Judith Chewey and Jane Ringer were assisted in arranging this excellent program by a

committee consisting of the following members: Iona Bruno, Mary Jane Dato, Lucile M. Dunn, Elsie Eggers, Donna Godfrey, Mary Ellen Kircher, Hazelle Kloepfel, Shirley Kreiman, Phyllis La Zare, Alice Reichard, Doris Scobey, Judy Stone, Paula Stumpf, and Ida Teitelbaum.

## Association of Cinema and Video Laboratories (ACVL) Meeting

The Association of Cinema and Video Laboratories (ACVL) conducted an all-day meeting at the 129th SMPTE Conference. Held on Friday, October 30, at the Westin Bonaventure Hotel, the ACVL conference program included a Board meeting, keynote speech, a series of technical presentations on a variety of topics, a question-and-answer period, and an associates forum. There was also a breakfast and lunch for registrants.

Dr. Roger B. Selbert delivered the keynote speech, "Future Trends." Following in order of presentation were: Jim Walters, Universal City Studios, Inc. ("From a Customer's Point of View"); Russell McMurtray, Eastman Kodak Co. ("Film-to-Tape"); Chuck Silvers, Lorimar ("Electronic Post-Production"); Moe Shore, Panavision ("Time-Code and Its Impact on the Lab"); Thomas Dyfverman, Profilm Co. ("Recent

Developments in Film/Tape and Off-Line/On-Line Systems"); and Jim McMahon, Metrocolor Laboratories ("Maintaining Your Sense of Humor"). Following the associates forum, ACVL President Burton Stone, Deluxe Laboratories, Inc., made the closing remarks.

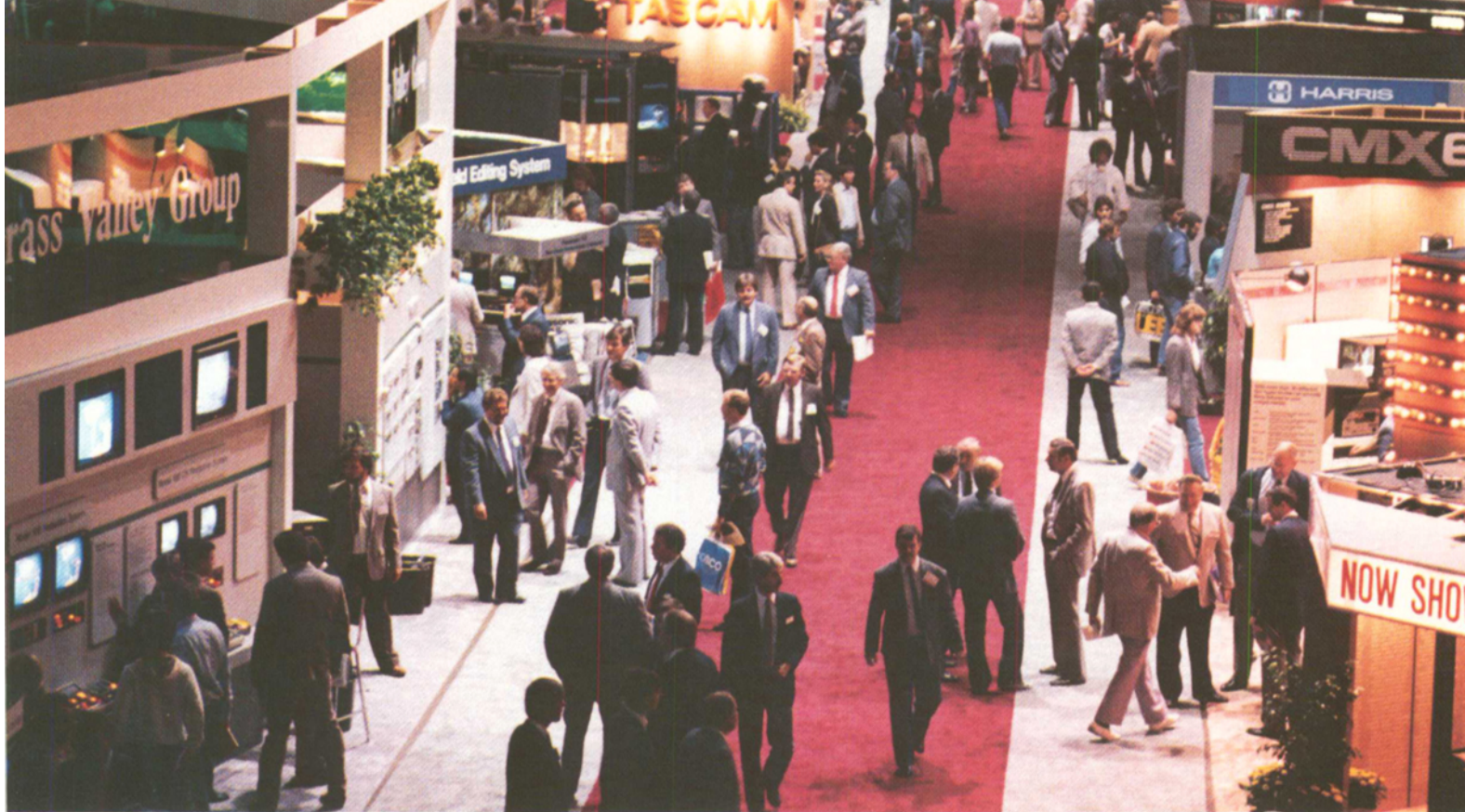
In conjunction with the meeting was the principals dinner on Saturday, October 31, at the Mountain Gate Country Club, Bel Air, Calif.

## Acknowledgments

Needless to say, the annual conferences would not be the multifaceted events they are without the support of the many organizations which act as sponsors. The Society wishes to express its thanks to the following companies and organizations which provided necessary services for the 129th Conference: *Banquet Entertainment*, Film Processing Corp./Riviera Broadcast Leasing; *Banquet Recep-*

*tion*, Ampex Corp.; *Banquet Roses*, Foto Kem Industries; *Banquet Wines*, National Broadcasting Co.; *Blood Pressure Clinic*, Will Rogers Institute; *Board of Governors Reception*, Dolby Laboratories, Inc.; *Coffee Club*, Fuji Photo Film U.S.A., Inc.; *Fellows Reception*, Magna-Tech Electronics, Inc.; *Honors and Awards Reception*, JVC Corp. of America; *Message Center Monitors*, BVH-

*2000 1-in. Tape Recorder*, Sony Corp.; *Monitor Stands*, Capital Cities/ABC, Inc.; *Multiple Light Valve Projector*, General Electric Co.; *NTSC Demodulators*, Faroudja Laboratories, Inc.; *Videotape Transfer Services*, Image Transform Ltd.; *VPR-2 Videotape Recorder*, Ampex Corp.; *Walkie-Talkie Equipment*, The Burbank Studios; *Welcoming Reception*, Eastman Kodak Co.



*The equipment exhibit at the 129th Conference was the largest in SMPTE history.*

## Equipment Exhibit

Two hundred sixty-one motion-picture and television companies from seven countries participated in the equipment exhibit, which was open from Saturday, October 31, through Tuesday, November 3. A total of 796 booths covered 79,575 ft.<sup>2</sup> in the main hall of the convention center.

Constant throngs moved through the exhibit during the four days. Visitors viewed new cameras, film projectors, VTRs, monitors, videographics systems, character generators, and other new products; they saw demonstrations of equipment and talked with design engineers, marketing representatives, and other company personnel. The exhibitors in turn were extremely pleased with the traffic on the floor: "They were eight deep in my booth at times," said one exhibitor, reflecting the general opinion on the floor.

## List of Exhibitors

Abekas Video Systems, Inc.  
 Adams-Smith  
 Adrienne Electronics Corp.  
 A. F. Associates, Inc.  
 Agfa-Gevaert, Inc.

*SMPTE Journal, January 1988*



*Conference Vice-President Blaine Baker (L) and President M. Carlos Kennedy official open the exhibit with a ribbon-cutting ceremony.*



*A record number of 796 booths occupied the main hall of the convention center.*

- |                                   |  |  |
|-----------------------------------|--|--|
| AKG Acoustics, Inc.               | Cetec Vega                                 | Elicon   |
| Alamar Electronics USA, Inc.      | Christy's Editorial Film Supply, Inc.      | E-mu Systems                                       |
| Alexander Batteries               | Christie Electric Corp.                    | Energex Systems Corp.                              |
| The Allen Products Co.            | A. Chrosziel & OpTex Ltd.                  | Evertz Microsystems Ltd.                           |
| Alpha Audio                       | Chyron Corporation                         | Fairlight Instruments, Inc.                        |
| Alpha Video and Electronics       | Cine Video Tech., Inc.                     | Faroudja Laboratories, Inc.                        |
| Alta Group, Inc.                  | Cinema Products                            | FGV Panther  |
| Amek Consoles, Inc.               | Cinematography Electronics, Inc.           | Filmfab System International Inc.                  |
| American Studio Equipment         | CineMills Corp.                            | Film Processing Corp.                              |
| American Theatre Products, Inc.   | Cine 60 Inc.                               | FOR-A Corp. of America                             |
| American Video Factory            | Cipher Digital, Inc.                       | Fostex Corp. of America                            |
| Ampex Corp.                       | Clear-Com Intercom Systems                 | Frezzolini Electronics Inc.                        |
| Amtel Systems, Inc.               | CMX Corp.                                  | Fries Engineering, Inc.                            |
| Angenieux Corp. of America        | Coherent Communications, Inc.              | Fujinon, Inc.                                      |
| Anton/Bauer, Inc.                 | ColorGraphics Systems, Inc.                | Fumeo S.P.A.                                       |
| Anvil Cases, Inc.                 | Comprehensive Video Supply Corp.           | Future Productions Inc.                            |
| Aphex Systems Ltd.                | Compu-Prompt                               | Geffen Systems                                     |
| Arriflex Corp.                    | Computer Prompting Corp.                   | General Electric Co.                               |
| Asaca/ShibaSoku Corp. of America  | Conrac Display Products Group              | GML America Inc.                                   |
| Aston Electronics, Inc.           | Continental Camera                         | G & M Power Products                               |
| Audio Precision Inc.              | Convergence Corporation/EECO, Inc.         | Alan Gordon Enterprises                            |
| Audio Services Corp.              | Corporate Communications Consultants, Inc. | Geocam Corp.                                       |
| Aurora Systems                    | Crosspoint Latch Corp.                     | Graham-Patten Systems, Inc.                        |
| BARCO-Industries, Inc.            | Cubicomp Corporation                       | The Grass Valley Group, Inc.                       |
| B & B Systems, Inc.               | DeSisti Lighting/Desmar Corp.              | Gray Engineering Laboratories, Inc.                |
| B. C. Inc.                        | Digital Audio Research, Ltd.               | James L. Grunder & Associates, Inc.                |
| BCS                               | Di-Tech Inc.                               | Harris Sound, Inc.                                 |
| Belden Communications, Inc.       | Digital F/X, Inc.                          | Harris Video Systems, Broadcast Div., Harris Corp. |
| Bencher Inc.                      | Digital Services Corp.                     | Harrison Systems, Inc.                             |
| BHP, Inc.                         | Dolby Laboratories, Inc.                   | HEDCO (Hughes Electronic Devices Corp.)            |
| Birns & Sawyer, Inc.              | Dorough Electronics                        | Karl Heitz, Inc.                                   |
| Bremson Data Systems, Inc.        | Dubner Computer Systems, Inc.              | Hitachi Denshi America                             |
| Broadcast Video Systems Ltd.      | Dynair Electronics, Inc.                   | Hollywood Film Co.                                 |
| Bruel & Kjaer                     | Eastman Kodak Co.                          | Hotronic Inc.                                      |
| BTS; Broadcast Television Systems | ECHOLab, Inc.                              | Howe Technologies Corp.                            |
| Cam-Lok Inc.                      | Editron USA, Inc.                          | Ikegami Electronics (USA), Inc.                    |
| Canon U.S.A., Inc.-Broadcast Div. | Egripment                                  | ILC Technology, Inc.                               |
| Dwight Cavendish Co.              | Elcon Associates                           | Image Video Ltd.                                   |
| CEI Technology                    |  |  |
| Century Precision Optics          |  |  |

Innovative Television Equipment  
 Innovision Inc.  
 Interactive Motion Control  
 Intergroup Video Systems  
 The J-Lab Co.  
 Jem-Fab Corp.  
 J & R Film Co./Goldberg/Moviola  
 JVC Co. of America  
 K & H Products Ltd.-Porta-Brace  
 KEM Elektronik Mechanik GmbH  
 King Instrument Corp.  
 Kintek, Inc.  
 Laird Telemedia  
 Lake Systems Corp.  
 LCS/Sync, Inc.  
 LEE Colortran  
 Leitch Video of America Inc.  
 Lenco, Inc., Electronics Div.  
 Leonardo  
 Leonetti Cine Rentals  
 Lexicon Inc.  
 Listec Video Corp.  
 Lites, Inc.  
 LMC Peterson  
 Lowel-Light Mfg., Inc.  
 LTM Corp. of America  
 Magni Systems, Inc.  
 Magna-Tech Electronic Co., Inc.  
 Matthews Studio Equipment, Inc.  
 Merlin Engineering Works, Inc.  
 Micron Audio Products, Ltd.  
 Microtime, Inc.  
 Microwave Radio Corp.  
 Midwest Communications Corp.  
 Miller Fluid Heads (USA) Inc.  
 Mini-Spec/HMI Lighting  
 Mitchell Camera Corp.  
 Mitsubishi Pro Audio Group  
 Mole-Richardson Co.  
 Montage Group, Ltd.  
 Motorola Communications & Electronics, Inc.

Moviecam F.G. Bauer GmbH  
 Ernest F. Moy, Ltd.  
 Multi Track Magnetics/Rangertone  
 NAC Inc.  
 Nagra Magnetic Recorders, Inc.  
 NEC America, Inc.  
 L. E. Nelson Sales Corp./Thorn-EMI  
 Rupert Neve Inc.  
 New England Digital.  
 Norris Film Products  
 North American Philips Lighting Corp.  
 Nova Systems, Inc.  
 Nurad, Inc.  
 O'Connor Engineering Laboratories  
 Odetics, Inc.-Broadcast Div.  
 Omicron Video  
 Optical Disc Corp.  
 OSRAM Corp.  
 Otari Corp.  
 Pacific Radio Electronics, Inc.  
 Paco Electronics USA, Inc.  
 Panasonic Broadcasting Systems Corp.  
 Pannonia International Imports  
 Perrott Engineering Labs. Inc.  
 Pinnacle Systems, Inc.  
 Plastic Reel Corp. of America  
 Preston Cinema Systems, Inc.  
 Q-TV  
 Quanta Corp.  
 Quantel  
 Quantum/Weircliffe  
 Rank Cintel Inc.  
 Rank Precision Industries Inc.  
 Research Technology International  
 R. F. Technology, Inc.  
 Riviera Broadcast Leasing  
 Rohde & Schwarz-Polarad, Inc.  
 Rosco Laboratories, Inc.

Ross Video Limited  
 Sachtler Corp. of America  
 Schneider Corp. of America  
 Schwem Technology  
 Scientific-Atlanta, Inc.  
 Sescom, Inc.  
 Shure Brothers Inc.  
 Sigma Electronics, Inc.  
 Skotel Corp.  
 Solid State Logic Inc.  
 Sony Communications Co., Sony Corp. of America  
 Sound Ideas  
 Soundmaster International Inc.  
 Sound Technology, Inc.  
 Soundtracs plc  
 Spectra Cine, Inc.  
 Spectra Image, Inc.  
 Steadi-Film Corp.  
 Steenbeck, Inc.  
 Strand Lighting  
 Sunburst Lighting, Inc.  
 Superedit Ltd.  
 Sylvania Lighting  
 Symbolics Inc./Graphics Div.  
 TASCAM/TEAC Corp. of America  
 Tecon Enterprises Ltd.  
 Technical Film Systems, Inc.  
 Techniform  
 Tektronix, Inc.  
 Tekskil Ind. Inc.  
 Telemetrics Inc.  
 Telepak San Diego  
 Telescript Inc.  
 Telex Communications, Inc.  
 Tentel  
 3M/Convention Mgt.  
 Tiffen Manufacturing  
 Timeline Inc./Audio Interviewal Design  
 TSM (Total Spectrum Manufacturing, Inc.)  
 Triconcept  
 Trompeter Electronics, Inc.  
 Ultimate Corp.  
 Unique Business Systems  
 United Ad Label Co. Inc.  
 Ushio America, Inc.  
 Utah Scientific, Inc.  
 Venture Lighting International  
 Vertigo Systems International Inc.  
 Video Design Pro  
 Video Graphic Systems  
 Video Services Unlimited  
 Videomedia SED Inc.  
 Videotape Products, Inc.  
 Videotelecom  
 Videotek, Inc.  
 Vinten Equipment Inc.  
 VTE  
 WaveFrame Corp.  
 Wide Range Electronics Corp.  
 The Winsted Corp.  
 ZAXCOM  
 Zonal By Mag-Zon Inc.



Visitors viewed the latest in state-of-the-art equipment at the exhibit.

# Papers Presented at the 129th Technical Conference

## Conference Opening: Imaging and Sound — Today and Tomorrow

**Introduction:** *Frank Haney*, Program Chairman, Capital Cities/ABC, Inc.

**Welcoming Address:** *M. Carlos Kennedy*, SMPTE President, Ampex Corp.

**Engineering Report:** *Richard G. Streeter*, SMPTE Engineering Vice-President, CBS Broadcast Group

**Keynote Address:** *Daniel Slusser*, Universal City Studios

## Archival

**1. Stability of Processed Cellulose Ester Photographic Films.** *By A. T. Ram and James L. McCrea*, Eastman Kodak Co., Rochester, N.Y.

**2. The Archival Quality of Film Bases.** *By Karel Brems*, Agfa-Gevaert N.V., Mortsel, Belgium.

**3. Fox's Development of CinemaScope, 1953-1954.** *By John Belton*, Brooklyn, N.Y.

**4. Theatre Television: A History.** *By Douglas Gomery*, University of Maryland, Chevy Chase, Md.

**5. Snow White and the Seven Dwarfs — A Half Century Later.** *By Leon Briggs*, Walt Disney Pictures, Burbank, Calif.; *Chris Bushman*, Deluxe Labs, Hollywood, Calif.; and *Pete Comandini*, YCM Labs, Burbank Calif.

**6. Restoring the First Television Show Produced on Color Video Tape — "An Evening with Fred Astaire."** *By Edwin H. Reitan and Daniel Einstein*, UCLA Film & Television Archives, Los Angeles, Calif.

## CAD Panel

**Panelists:** *Steve H. Edmunds*, Dynamic Technology Ltd., London, England; *Edwin P. Huresky*, CBS COE ENG/DEF, New York, N.Y.; *Jay Katowitz*, Capital Cities/ABC, Inc., New York, N.Y.; *Irving Rosner*, (Moderator), Rosner TV Systems, New York, N.Y.; *Howard Thayer*.

## 1988 Olympics

**7. Host Broadcasters Prepare for the 1988 Olympics.** *By Joseph Roizen*, Telegen, Palo Alto, Calif.

**8. The 1988 Seoul Olympics — TV from a Parking Lot.** *By Charles Jablonski and Peter Randall*, NBC, New York, N.Y.

**9. High-Performance Switching and Machine Control System for NBC Use at 1988 Olympic Games, Seoul, Korea.** *By Frank Zimmerman*, 3M Co., Huntsville, Ala.

**10. Digital Video Graphics — A Component Experience.** *By Charles H. Jablonski and David H. Salant*, NBC New York, N.Y.

**11. MII — A Complete Production Format.** *By Charles E. Spicer and Phillip Shaw*, NBC, New York, N.Y.

## Film & Lab Technology 1

**12. Cinema Film Formats: 40 Years of Upgrade and/or Downgrade in Viewed Image Quality on the Screen Including Lens Changer.** *By Glenn M. Berggren*, Optical Radiation Corp., Azusa, Calif.

**13. Progress Report on Feasibility of Motion Picture Frame-Rate Modification to 30 Frames Per Second.** *By Edmund M. DiGiulio*, Cinema Products Corp., Los Angeles, Calif.

**14. Effects of Pitch on Image Steadiness.** *By Irwin Young*, Du Art Film Labs, New York, N.Y.

**15. Eastman Color High-Speed Daylight Negative Film 5297/7297 — Trade Reaction.** *By Milton D. Jones and John C. Norris*, Eastman Kodak Co., Rochester, N.Y.

**16. Paper cancelled.**

**17. A Color Negative Film for Laser Recording.** *By Y. Urata and S. Honjo*, Fuji Photo Film Co., Ltd., Kanagawa, Japan.

**18. Packaging Innovations for Motion Picture Films.** *By Ann P. Griffen*, Eastman Kodak Co., Rochester, N.Y.

## Image Processing

**19. The Video Workstation Concept: Merging Computer and Video Technologies.** *By Ajay Chopra*, Pinnacle Systems, Inc., Santa Clara, Calif.

**20. Affiliate Identification System.** *By Joseph A. Maltz*, Cranbury, N.J.; and *Ivan J. Maltz*, Dubner Computer Systems, Paramus, N.J.

**21. Digital Effects Integration in a Video Switcher.** *By Jay L. Flora*, Ampex Corp., Wheat Ridge, Colo.

**22. Multilevel Compositing in the Digital Domain.** *By Peter D. Symes*, Grass Valley Group, Grass Valley, Calif.

**23. Multiresolution Dissolve.** *By*

*Charles S. Stein and Lewis E. Hitchner*, University of California, Santa Cruz, Calif.

**24. A High-Speed Architecture for Image Computation.** *By L. K. Putnam, P. H. Lucht, and J. Davis*, BTS, Salt Lake City, Utah.

**25. The Missing Link between Film and Tape.** *By Eddie Barber*, Video TeleCom, Hollywood, Calif.

**26. Digital Processing of Planetary Images.** *By Robert Nathan*, JPL, Pasadena, Calif.

## Film and Electronic Production I

**27. Major Motion Picture Production Standards.** *By Glenn L. Kennel, J. Pytlak, R. Sehlin, and R. Uhlig*, Eastman Kodak Co., Rochester, N.Y.

**28. Eastman Color High-Speed SA Negative Film 5295: Production Experience.** *By R. C. Sehlin*, Eastman Kodak Co., Rochester, N.Y.; *J. Erland*, Apogee Inc., Van Nuys, Calif.; and *N. J. Krepela*, Boss Film Corp., Marina del Rey, Calif.

**29. OPUS-One Electronic Intermediate Production.** *By David Collins*, Teledyne Camera Systems, Arcadia, Calif.

**30. Refinements in the Illumination of Traveling Matte Backings.** *By Jonathan Erland*, Apogee, Inc., Van Nuys, Calif.

**31. Electronics in Discharge Lighting.** *By Adrian Donkin*, Lee Colortran Ltd., Bolton, England.

**32. Camera Lens and Light Source Filtering Recommendations for Application in Fluorescent and High-Intensity Discharge Lighting Situations.** *By David L. Quaid*, David Quaid Production, Inc., Duxbury, Mass.

**33. Paper cancelled.**

## Fiber Optics

**34. Fiber Optics and Video: A Background.** *By George F. Benton*, San Ramon, Calif.

**35. Paper cancelled.**

**36. Video Compression and Fiber Optic Digital Transmission.** *By Allan R. Lamberti*, NEC America, Inc., Fairfax, Va.

**37. Practical Experience with DPCM Fiber Optic Transmission Systems for Inter-City Television Network Program Distribution.** *By Kenneth Michel*, Capital Cities/ABC, Inc., New York, N.Y.

## HDTV Film Festival

Continuous screenings of subjects originated on HDTV and transferred to 35mm film were shown on Sunday and Tuesday of conference week. The screenings were a joint effort of the SMPTE and the Motion Picture and Television Engineering Society of Japan. The HDTV Film Festival chairmen were Richard J. Stumpf, Universal Studios, and Nabutada Yagi of the Motion Picture and Television Engineering Society of Japan.

The festival was a highly popular feature of the conference. Attendance was high throughout both days. The audiences were impressed with the high technical and artistic quality of the films. The festival program included the following films:

*Julia and Julia* — Excerpt from the feature film with Kathleen Turner, Sting, Gabriel Byrne, Gabriele Ferzetti; Director: Peter Del Monte; Dir. of Photography: Peppino Rotunno; Produced by: RAI Radiotelevisione Italiana; HDTV-to-film transfer: Sony Electron Beam, Recorder.

*Let's Work* — Music video featuring Mick Jagger; Director: Zbigniew Rybczynski; Produced by: David Niles, Eleven Twenty-Five Productions; HDTV-to-film transfer: Sony PCL.

*Around the World* — documentary; Produced by: NHK; HDTV-to-film transfer: NAC Laser Recorder.

*A Window* — Produced by: Tokyo Broadcasting System; HDTV-to-film transfer: NAC Laser Recorder.

*Imagine* — Music video based on composition by John Lennon; Director: Zbigniew Rybczynski; Produced by: Barry Rebo, Dennis Bieber; HDTV-to-film transfer: Sony Electron Beam Recorder.

*Tokyo Gen-Mu* (Tokyo Illusion), Produced by: New Video System Associates; HDTV-to-film transfer: Sony Electron Beam Recorder.

*Chasing Rainbows* — Promotional reel from 14-hour mini-series with Paul Gross, Michael Riley, Julie Steward; Directors: William Fruet, Mark Blandford; Produced by: Northernlight & Pictures with Canadian Broadcasting Corp.; HDTV-to-film transfer: Sony Electron Beam Recorder.

**38. Broadcast-Quality Television 45 Mb/s (DS3) Encoding Algorithm.** By Ed M. Underwood, Bell Communications Research, Morristown, N.J.

**39. Nationally Compatible, DS3 Rate (45 Mb/s) Customer Controllable, Multipoint Networks for Broadcast Television.** By R. J. Blackburn and Paul Hessler, Bell Communications Research, Morristown, N.J.

**40. Potential Use of Optical Video Interfaces in a Future Broadcast Facility.** By Robin Wilson, NBC, New York, N.Y.

**40A. Current Trends in Fiber Optic Transmission Standards.** By Robert H. Walker, PCO, Inc., Chatsworth, Calif.

## Film & Lab Technology II

**41. Direct Introduction of Time Code on Film.** By Michel Oudin, SFP, Paris, France.

**42. Film Data Track — Time Code on Film: A Working System.** By Moe Shore, Panavision, Tarzana, Calif.; and Jean-Pierre Beauviala, Aaton, France.

**43. Optical Code on Film for Projectors.** By Jean-Pierre Beauviala, Aaton, France.

**44. Cinema Projection Lenses: 40 Years of Performance Progress with Concept Inputs and MTF Results.** By Glenn M. Berggren, Optical Radiation Corp., Azusa, Calif.

45. Paper cancelled.

**46. Colorization Challenges.** By Brian Holmes and Wilson Markle, Colorization Inc., Toronto, Canada.

**47. Method of Bonding Lexan and Sapphire to Form a High-Pressure, Flame-Resistant Window.** By William R. Richardson and Ernie D. Walker, NASA Lewis Research Center, Cleveland, Ohio.

## HDTV I

**48. HDTV: The Evolution of a New Definition in Television Technology.** By Corey Carbonara, Baylor University, Waco, Tex.

**49. Study Groups and Their Roles in Practical Application of HDTV in Japan.** By Ryo Mochizuki, NHK, Tokyo, Japan.

**50. Film-Style Drama Production Using High-Definition Video.** By John Galt and Charles Pantuso, Northern Light and Picture Corp., Scarborough, Ontario, Canada.

**51. Technical Aspects of HDTV Production.** By Keith Field, CBC, Montreal, Canada.

**52. "Julia and Julia" — The First Movie Made by HDTV Electronic Means.** By Erasmo Lionetti, RAI, Rome, Italy.

**53. The High Definition Studio — A Unique Approach to Creating Visuals.** By Barry Rebo, Rebo High Definition Studio, Inc., New York, N.Y.

## The Digital Decade

**54. Television (Video/Audio/Data) Signal Routing and Distribution: Converging Operations Needs, Diverging System Solutions.** By C. Robert Paulson, Artel Communications Corp., Hudson, Mass.

**55. Serial Link between Digital Equipments.** By Etienne Maurer, C. Delattre, and J. Vallee, Thomson Video Equipement, France.

**56. Development Process and Performance of the PBS VBI Data Delivery System.** By Mark S. Richer and Aderemi A. Adeyeye, PBS, Alexandria, Va.

**57. Digital Intelligence in Professional Broadcast Monitors.** By Joost Verbrugge, Martin Piepers, and Norbert Lietaert, Barco Industries, Kortrijk, Belgium.

**58. Generation Loss in Digital Video Systems.** By John Abt, Grass Valley Group, Grass Valley, Calif.

**59. Extending Current Digital Standards to 10 Bits.** By Merrill S. Weiss, NBC, New York, N.Y.

**60. Motion Theatre: Technological Fusion and the Facility of the Future.** By Michael Van Himbergen and Jeffrey Diamond, Motion Theatre Associates, Culver City, Calif.

**60A. New Developments in Digital Post-Production.** By Richard J. Taylor, Quantel, Ltd., Stamford, Conn.

## Film Laboratory Practices

61. **One-Solution Bleach for Process ECN-2.** By *Frank Ricotta and T. M. Henretty*, Eastman Kodak Co., Rochester, N.Y.
62. **The Light Valve Controller and the Answer Print Printer.** By *J. L. Baptista, J. A. Robertson, M. Michelson, and B. Keller*, CFI, Hollywood, Calif.
63. **Productivity Improvements for ECP-2, 60,000-Foot Rolls and Automatic Unloading.** By *Colin F. Mossman*, Rank Film Labs, Denham, England.
64. **Television-Compatible Prints: Fitting a Quart of Light into a Pint-Pot Screen.** By *Dominic Case*, Colorfilm Pty Ltd., Sydney, Australia.
65. **CVIS: Digital Video Analysis for Motion-Picture Film.** By *Larry A. Anderson*, Bremson Data Systems, Inc., Lenexa, Kans.
66. **A Radically New Video Color Analyzer Designed Specifically for the Motion-Picture Industry.** By *Nigel S. Varian*, Photo Micro Systems, Ltd., England.
67. **Lab Central — A Computerized Printing, Production, and Scheduling-Control System.** By *Joseph C. Wary*, LMC Peterson, Chatsworth, Calif.
68. **Film Facit™ 3000H Color Film Analyzer.** By *Howard W. Hoadley*, LMC Peterson, Chatsworth, Calif.
69. **HFC 300H Video Color Film Analyzer — A New Generation.** By *Harry Teitelbaum and Mark Levine*, Hollywood Film Co., Los Angeles, Calif.

## HDTV II

70. **Flexible Memory System for the Integration of Multiple Studio-Quality Video and Image Windows on an HDTV Display.** By *J. Robbins, H. Gaggioni, M. Jaquez, A. Fernandez, and S. Soper*, Bell Communication Research, Morristown, N.J.
71. **Recent Developments of Laser Telecine and Laser Beam Recorder for HDTV.** By *Y. Sugiura, Y. Nojiri, H. Hirabayashi, O. Kiyotaka, and T. Motoki*, NHK, Tokyo, Japan.
72. **HDTV to 35mm Film Transfer Via Electron Beam Recorder.** By *Lawrence J. Thorpe and Yoshio Ozaki*, Sony Communications Products Co., Teaneck, N.J.
73. **Practice of HDTV-to-Film Conversion by Means of Laser Film Recorder.** By *Noboru Yura*, Imagica Corp., Tokyo, Japan; and *Hiroaki Kumata*, NAC, Inc., Tokyo, Japan.

74. **HDTV Requirements for Motion-Picture Film.** By *James A. Mendrala*, NBC, San Fernando, Calif.
75. **HDTV — Delivery to the Customer.** By *Ben Crutchfield*, NAB, Washington, D.C.

## Post-Production I

76. **A New Audio Mixing Console Architecture for Film Post-Production.** By *Chris David*, Solid State Logic, Oxford, England.
77. **Applications of the LaserVision Standard Videodisc in the Broadcast Industry.** By *Donald R. Hayes*, Optical Disk Corp., Cerritos, Calif.
78. **High Technology and Film Post-Production.** By *Milton Forman and Adrian Ettlinger*, Cinedco, Glendale, Calif.
79. **A Computerized Post-Production Management System for Film and Videotape.** By *Rush S. Hickman and Shawn Carnahan*, Amtel Systems, Inc., Nashua, N.H.
80. **A New Post-Production Facility: The Technical Building at Skywalker Ranch.** By *Tomlinson Holman*, Lucasfilm Ltd., San Rafael, Calif.
81. **Acoustical Design for the Technical Building at Skywalker Ranch: Part I, Sound Isolation and Room Acoustics.** By *David R. Schwind*, Charles M. Salter Assoc., Inc., San Francisco, Calif.
82. **Acoustical Design for the Technical Building at Skywalker Ranch: Part II, Mechanical and Electrical Acoustic Noise Control.** By *Thomas A. Schindler*, Charles M. Salter Assoc., Inc., San Francisco, Calif.

## Film & Electronic Production II

83. **Film and Video — Tying Them Together.** By *David P. Bird and Al Jensen*, Broadcast Television Systems, Salt Lake City, Utah.
84. **A New Technique to Improve Video Instability by Digital Processing.** By *T. Matsuzuru, Y. Monjyo, and T. Sueoka*, NHK, Tokyo, Japan.
85. **The CCIR Five-Point Grading Scale in the Television Quality Control.** By *Heikki Kilpelainen*, Finnish Broadcasting Co., Helsinki, Finland.
86. **Current Broadcast Equipment Finance Trends.** By *Robert Bernfeld*, Riviera Broadcast Leasing, Huntington Beach, Calif.
87. **A New 1-Degree Spotmeter for Measuring Screen Brightness and Set Lighting.** By *R. A. Walker, V. Klopffel, and J. K. Branch*, Spectra Cine, Inc., Burbank, Calif.

88. **Shoot in Super 8, Release on Video.** By *Phillip E. Vigeant*, Super-8 Sound, Burbank, Calif.
89. **Applications of Macintosh Computer in Film Production.** By *David W. Leitner*, Leitmotif Filmproduction, Long Island City, N.Y.
90. **Theaters, Film, and the Electronic Image — New Design Approaches.** By *Boyce Nemece*, Boyce Nemece Designs, Norfolk, Conn.

## Enhanced NTSC/Compatible HDTV

91. **Recent Advances in NTSC Signal Processing.** By *Yves Faroudja*, Faroudja Labs, Inc., Sunnyvale, Calif. and *Joseph Roizen*, Telegen, Palo Alto, Calif.
92. **Optimizing the Encoding Process to Overcome the Major Defects of NTSC Color Pictures.** By *John P. Rossi*, IntelVideo, Stamford, Conn.
93. **Enhancing Television — An Evolving Scene.** By *John L. E. Baldwin*, IBA, England.
94. **Experiment with Enhanced-Quality TV System, Compatible with NTSC.** By *Y. Sugimori, Y. Kimata, and Y. Araki*, NTV, Tokyo, Japan.
95. **Multiphase Subsampling Structures Applied to the MAC-Compatible Transmission of High-Definition Television Pictures.** By *F. Fonsalas, P. Hayet, J. Y. Lejard, and M. Le Queau*, Labs d'Electronique et de Physique Appliquée, France.
96. **1125-Line HDTV Can Be Compatible with NTSC.** By *William E. Glenn and Karen G. Glenn*, New York Institute of Technology, Dania, Fla.
97. **Exploring and Exploiting Subchannels in the NTSC Spectrum.** By *Michael A. Isnardi*, David Sarnoff Research Center, Princeton, N.J.
98. **System Considerations for NTSC-Compatible HDTV.** By *C. A. A. J. Greebe*, North American Philips Corp., Briarcliff Manor, N.Y.

## Audio, Film

99. **The Tapeless Audio Workstation — The Future is Now.** By *Frank Serafine*, Serafine Fx, Inc., Santa Monica, Calif.
100. **New Technology in the Neve V-Series Console.** By *Anthony H. Langley*, Rupert Neve, Inc., Bethel, Conn.
101. **The "CP-250's": A Dubbing Stage Monitoring System.** By *Tomlinson Holman, Brian Kelly, and Gary Kephart*, Lucasfilm Ltd., San Rafael, Calif.

**102. Spectral Recording for Film and Broadcast.** By Ioan Allen and William Mead, Dolby Laboratories, San Francisco, Calif.

**103. Film Optical Sound Tracks — The Move Toward Digital Audio.** By Herbert F. Fiala, Mitsubishi Pro Audio Group, San Fernando, Calif.

**104. Digital Sound Feasibility Study.** By Ronald E. Uhlig (Chairman) and Robert J. Cirulli, Eastman Kodak Co., Rochester, N.Y.

**105. An Improved Theater Sound System.** By John Mosley and Jack Cashin, Ultra-Stereo Labs, Inc., Malibu, Calif.

### Beyond the Cathode Ray

**106. An Overview of Flat Video Display Technology.** By Koichi Sada-shige, Consultant, Berlin, N.J.

**107. New Advances in CCD Imaging.** By L. J. Thorpe and T. Iwasaki, Sony Communications Products Co., Teaneck, N.J.

**108.** Paper cancelled.

**109. The CCD Camera for Field Production Applications.** By Peter Wonnor, Thomson Video Equipment, France.

**110. Operational Experience with an F. T. CCD Camera.** By Filippus L. Stok, BTS, Breda, Netherlands.

**111. A New Era in Television Test and Measurement.** By John Lewis, Tektronix, Inc., Beaverton, Oreg.

**112. Testing of Component Analog Video.** By Edward A. Kiyoi and Victor L. Kong, Magni Systems, Inc., Beaverton, Oreg.

**112A. Component Analog Video Color Correction.** By David E. Acker, FOR-A Corp. of America, Newton, Mass.

### Audio, TV

**113. The AudioFrame Digital Audio Workstation.** By Glenn T. Edens, WaveFrame Corp., Boulder, Colo.

**114. A Method for Recording and Reproducing the Second Audio Program on a Standard C-Format VTR in a Stereo Environment.** By John W. Fullwood, Fullwood Consulting Group, New York, N.Y.

**115. Motion-Picture Sound for Video Productions.** By Austin Green and Brent Keast, Cinesound International Corp., Hollywood, Calif.

**117. The Future of Television Audio.** By Randy Hoffner, NBC, New York, N.Y.

**118. The Built-In Intercom in the Television Camera — Get Serious!** By Stan Hubler, RTS Systems, Inc., Burbank, Calif.

**119. Direct to Home Digital Audio Broadcasts.** By David MacCarn, WGBH, Boston, Mass.

**119A. A New SMPTE Theater Evaluation Program.** By John Mason, Eastman Kodak Co., Rochester, N.Y.

### Post-Production II

**120. The Electronic Laboratory — A Working Reality.** By Emory M. Cohen, Pacific Video, Hollywood, Calif.

**121. Automatic Logging of Editing Information on LaserVision Videodiscs by The Spectra System™.** By D. L. Register, J. D. Sherbon, and L. S. Spangler, Spectra Image, Inc., Burbank, Calif.

**122. Video Recording of Still-Frame Audio and Digital Data.** By Robert E. Yablonski, EECO, Inc., Santa Ana, Calif.

**123. A New Approach to Videotape Editor Architecture.** By Stanley D. Becker, CMX Corp., Santa Clara, Calif.

**124.** Paper cancelled.

**125. Evolution of Off-Line Edit Decision List Management Software.** By Lon McQuillin, McQ Productions, San Mateo, Calif.

**126. The Use of Standard Computer Platforms in Video Post-Production.** By C. P. Clarke, R. L. Lay, S. T. Mayer, and A. E. Wade, Digital F/X Inc. America, Santa Clara, Calif.

### Video Recording

**127. Television, Video, Audio, and Data Signal Recording: Format Standardization Dreams and Realities.** By C. Robert Paulson, Artel Communications Corp., Hudson, Mass.

**128. Design Considerations for the D-2 NTSC Composite DVTR.** By Richard Brush, Ampex Corp., Redwood City, Calif.

**129. How to Define a Reference Recording for Digital VTRs.** By Berthold Eiberger, BTS, F.R. of Germany

**130.** Paper cancelled.

**131. Evaluation of Small-Format VTR Performance.** By Robert G. Thomas, Capital Cities/ABC, Inc., New York, N.Y.

**132. Development of All-Solid-State Video Recorder.** By Richard Dienhart, Kazuo Kashigi, and Keiichi Hirayama, NEC America, Inc., Wood Dale, Ill.

**133. A Digital Velocity and Amplitude Error-Correction System for Component Time-Base Correctors.** By Robert L. Bleidt, Fortel, Inc., Norcross, Ga.

### ES Bus Applications

**134. ES Bus, Its Use in the British Broadcasting Corporation.** By Michael M. Gleave, BBC, London, England.

**135. The ES Bus from the Viewpoint of the Applier.** By Hans-Joachim Goetz, Bayerischer Rundfunk, F.R. of Germany.

**136. The 3M ES Bus Machine Control System.** By Fred J. Hodge and Mark Riley, 3M Co., Huntsville, Ala.

**137. The ES Bus in an Editing Environment.** By Karl H. Trissl, IRT, F.R. of Germany.

**138. Expanding the Use of the ES Bus for Station Automation and Remote Machine Control.** By Douglas A. Hurrell, Alamar Electronics U.S.A., Inc., Campbell, Calif.

**139. The One-Man Studio.** By R. S. R. Saltarelli, W. Vinten Ltd., England; and R. A. Cooper, Vinten Equipment Inc., Hauppauge, N.Y.

**140. Future Direction for the ES Bus.** By Craig McCartney and James Duca, Ampex Corp., Redwood City, Calif.

### Post-Production III

**141. Film, Video and Printing: One World?** By Cesare A. Massarenti, Mikros Image, Paris, France.

**142. A New System Architecture for Digital Video Post-Production.** By C. P. Clarke, S. T. Mayer, M. A. Ogrinc, and A. E. Wade, Digital F/X Inc. America, Santa Clara, Calif.

**143. Real-Time Disk — The Solution to Multi-Generation Video Combining.** By James M. Seipp, Digital Services Corp., Gainesville, Fla.

**144. Techniques for Ultimatte Compositing in Post-Production.** By Richard W. Patterson, Ultimatte Corp., Reseda, Calif.

**146. Creative Color Correction in Component and Composite Environment.** By Dieter Poetsch, BTS GmbH, F.R. of Germany.

**147. A Whirlwind Course in MIDI Time Code.** By Chris Meyer, Digidesign, Inc., Menlo Park, Calif.

**148. Opus, a Random Access Sound-Editing System.** By Brian Zolner, Lexicon, Inc., Waltham, Mass.