Program Chairman's Address
SMPTE 135th Technical Conference, Los Angeles

By Jonathan Erland

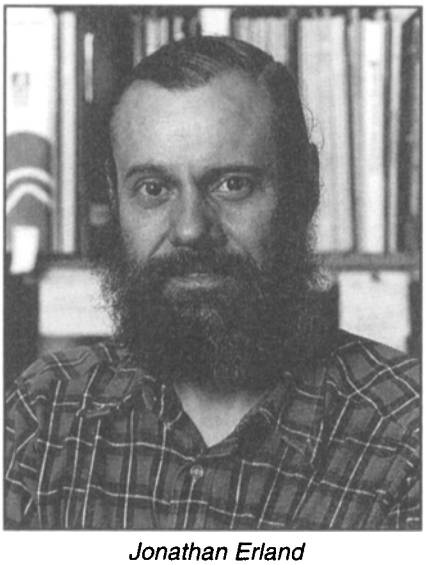
Welcome to the 135th Conference of the Society of Motion Picture and Television Engineers, a Society created by and for the engineering community of the film, television, and now the multimedia and special venue disciplines. My name is Jonathan Erland. I'm a Fellow of this Society, a founder and director of the Technology Council of the Motion Picture and Television Industries, and I chair the Visual Effects Committee of the Academy of Motion Picture Arts and Sciences and represent Visual Effects on the Academy Board of Governors. All of which tells you I'm a soft touch for volunteer jobs and may explain my presence here in the capacity of Program Chairman for this Conference.

I was persuaded to take this assignment by Mr. Frank Haney, and if he's here I'd like him to stand — and if you think it's because I'm going to thank him, think again! Actually, it's so that you can all see for yourselves what a man who could sell refrigerators to the Eskimos looks like in the flesh! "A few busy periods," he said, "...but it's not too bad." Indeed, Frank, indeed.

Actually, I took this assignment because I have very strong feelings about this Society, which in turn grow out of my feelings about the arts, crafts, and sciences that make up this industry. In addition to the affiliations I've already mentioned, I am, (as, I suspect, are many of you) a member of several associations, guilds, and professional organizations that collectively make up what I refer to as the "caretaker family" of our profession and our industry.

These nonprofit volunteer organizations form a network that connect the segments of our industry and, in a very real sense, they constitute the glue that holds this industry together.

I believe this family of caretakers is needed now, more than ever, because I believe we are in a cycle of change that will prove most profound. I have come to believe that we experience cycles of change that have a pattern and rhythm associated with our calendar. Our evolution may be chaotic, but the work of people like Mitchell Feigenbaum and others teaches that there is order in chaos, (or chaos in order) however you look at it! So if you look at chaos closely, or perhaps from further away, you can discern patterns and cycles. Even a casual look back through history reveals a pattern of change linked to our calendar. Our industry was brought into being in one such cycle 100 years ago. Another cycle at the midpoint of the century brought television, among such other things as transistors and integrated circuits.



Jonathan Erland

The significance of this to the SMPTE Technical Conference today, of course, is that we are approaching, not only a turn of the century, but a new millennia. Thus, what we perceive to be the sweeping changes of the past few years are in fact merely the harbinger of things to come. We are not at the peak, but rather in the groundswell of a major change cycle. These are sine waves, after all, not square waves!

Text of the Program Chairman's address, given at the opening session of the 135th SMPTE Technical Conference in Los Angeles by Jonathan Erland, Technology Council of the Motion Picture/Television Industry, on October 30, 1993. This was inadvertently omitted from the conference story in the January 1994 issue of the Journal. The Editor expresses his apologies for this unfortunate occurrence.

So, to paraphrase Bette Davis's famous line from *All About Eve*, "Fasten your seat belts, it's going to be a bumpy ride!"

This Society was brought into being in the aftermath of the major change cycle that occurred at the turn of this century. Charles Francis Jenkins and his colleagues had witnessed and participated in a tremendous outpouring of technological development. But they realized that without some way to standardize certain key parameters we would have a smorgasbord of wonderful technology, but we would not have an industry with which to support it all.

They decided that there had to be some degree of cooperation and coordination or it would be impossible to make a film in New York and show it Chicago, because the film gauge would be different or the frame rate or some other disparity.

The concluding words of Jenkins' founding statement are as compelling and eloquent today as they were some 77 years ago, "It is our duty, therefore, as engineers, to wisely direct this standardization, to secure the best standards of equipment, quality, performance, nomenclature, and, unconsciously perhaps, a code of ethics." (We're trying, Francis, we're trying!)

The advantage we enjoy today, as we confront the turn of the millennia, with its attendant turmoil, is that we have the SMPTE in place, 10,000 members strong, distributed in almost

every country on the planet, and with an accumulated wealth of experience in managing the highly volatile development we will be facing in the immediate future. So the message here is that now, more than ever, we need to reassess, redesign, rededicate, and recommit ourselves to the goals and vision that are this Society. And the same applies to the other members of the caretaker family.

I cannot adequately stress that the effective cohesion of this "caretaker family" will determine the success with which we weather the coming-whirlwind of change that has only just begun to be felt. If you've had a chance to glance at the program for this year's conference, you will have noticed that we've chosen as the theme for this year, "Integrating Technologies in the Digital Era." Obviously, this theme reflects the fact that our whole technological world is, in many respects, converging and integrating. Film, television, multimedia, computer imaging, all continue to become more entwined. The digitization of so much of our technology is facilitating this process of integration enormously. Understanding this process and its implications is one of the challenges we face.

Integrated technologies becomes the specific theme of the first papers session of the conference this afternoon, under Chair Bob Lambert. For this session, we briefly suspend the usual practice of separating into A and B sessions, as we present a somewhat eclectic collection of papers that touch on various aspects of integration in our industry.

Among these are papers dealing with such issues as a "Universal Header Proposal" from Apple and a "Progress Report on Digital Image Architecture" from Peter Symes. There's a Technology Council paper on "Defining a Film Digital Mastering Format" and a Silicon Graphics paper on "Computers in Post Production." Finally, we have a Charles Poynton paper, "Gamma and Its Disguises: the Nonlinear Mappings of Intensity in Perception of Film, Video, and Computer Graphics."

A little closer scrutiny of the program reveals that we have significantly expanded the constituency we serve. Multimedia, which was the subject of a very successful tutorial last year, this year warrants both a demonstration session and a papers session. In addition there is a session of papers as well as a panel discussion on the vital subject of video compression, with participants like Huffman, Barnsley, and Poynton, to name a few. Steve Schklair and Chris Swain, both of RGA Interactive, along with Karen Mills of White Light Video, have managed the difficult task of assembling these programs.

Also, this year we acknowledge the phenomenal growth of the special venues world and the impact these technologies will have on the whole entertainment industry. In this domain, the motion-picture advances from a representation of reality to a simulation, adding motion and other sensory clues to large format cinematography. We have been fortunate in persuading the renowned Don Iwerks, of Iwerks Entertainment, to become SMPTE's first Special Venues Topic Chair.

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Don (who is the son of the legendary Ub Iwerks) has put together a sterling papers session, as well as co-producing, with Cindy Aylward, the outstanding tutorial that took place here yesterday with such participants as Richard Edlund, Bran Ferren, Bob Rogers, and many more.

The Special Venue papers session, chaired by Nelson Meacham, makes an eloquent case for the inclusion of this discipline in the Society's jurisdiction and is a testament to the undiminished vigor of the silver halide crystal and its attendant, and defiantly analog, technology.

Marty Mueller, who has inherited the mantle of the master of large-format camera builders, Geoff Williamson, brings us ever more sophisticated cameras. Glenn Berggren will take us for an intensely close scrutiny of a projector as it projects a single frame of film.

And then, almost as a centennial birthday present for film projection, there is a paper that Jenkins and Armat would find as enthralling as I do. Possibly the most consequential advance in film projection since Armat produced the Geneva gear, is Ron Schmidt's air-driven "Linear Loop Projector." Call to mind the wave form created in a flag during a stiff breeze, and you will instantly grasp the elegant simplicity of Ron's concept. Film is wafted through this projector on a cooling, lubricating, cushioning stream of air and held rock steady in a "linear sprocket gate" for substantially longer than conventionally, thus forming a brighter, steadier image on the screen.

In short, the papers that will be presented during this inaugural Special Venues session, along with the other Film sessions, assembled by Film Topic Chair Beverly Pasterczyk, not only put to rout any suggestion that film technology has passed its prime, but in fact demonstrate that in many respects, film is just hitting its stride.

This is not to say that film isn't embracing the enhancements that digital technology can bring, as this conference will demonstrate on Monday, November 1st, with a day-long program to be held at the Academy of Motion Picture Arts and Sciences. The morning session will be devoted to papers, demonstrations, and a panel discussion on the topic of Digital Images for Film. Noted D.P. Woody Omens, A.S.C. (in fact, he's the first vice-president of the A.S.C.) will chair the session, with much of the focus directed at the actual production experience with digital image manipulation of some of the premier practitioners in this field, and how this translates into greater artistic scope for the D.P. and director.

The afternoon session, under Chair Tomlinson Holman (of THX fame) will turn its attention to the subject of Digital Sound for Film, and here we anticipate an extremely lively debate between the exponents of the four available digital sound systems for film.

These sessions at the Academy

require you to be registered and to sign up for the bus at the SMPTE booth just below the escalators. There is a box lunch available for order at the booth also. The buses will depart from the Convention Center and will also pick up from the hotels, starting at 7:45 in the morning.

The video world, as we have come to expect, commands a lion's share of conference attention, and we are fortunate to have Gavin Schutz as this vital Topic Chair. On Sunday, the Digital Television session, under Chair Bill Hogan, examines various aspects of processing digital video signals, standards, and format conversions.

There are a couple of HDTV CCD Telecines, Papers 13 and 14, one from John Galt of Sony and another from the alliance of BTS and Kodak that further the integration of film and video. Also, the problems of facilities conversion for digital audio and video are covered in Paper 19.

The Monday morning Broadcast and Formats session with Chair Dave Taylor takes up broadcast video and automation, video formats, and terrestrial and satellite broadcasts. The new D-5 format from Panasonic is discussed in Paper 51, while Paper 44 provides a progress report on the HDTV Grand Alliance and may answer the question, "Is it Grand and is it an Alliance?"

The Video Signal Processing session that afternoon, chaired by Alan Hart, places emphasis on signal analysis and timing considerations, disk storage, and monitoring. Some key papers here are No. 57, "Digital Video Signal Analysis," and No. 60, "Serial Digital Master Control," which deals with routing signals in a large facility.

The next two sessions are obligatory! Tuesday morning, Processing and Color, under Chair Fred Benedikt, grabs hold of gray-scale and colorimetry issues in the video and workstation environment and the reproduction of color across format boundaries such as television, film, and workstation. Watch for Glenn Kennel's paper, "Gray Scale Transformation of Digital Film Data."

Then, in the afternoon session, Chris Cookson takes the chair for — wait for it! — Video Compression, about the most complex, baffling, and least understood issue at this conference. All fields of television and multimedia are impacted, and there is a great need to understand compression techniques and applications. MPEG 2 is discussed in paper No. 100, while in paper No. 98, John Huffman explains "Wavelets and Image Coding." And, recalling my earlier references to chaos theory, it's interesting that Dr. Michael Barnsley, in paper 97, will discuss "A Fractal Video Compression Standard." At the conclusion of the papers presentations, Karen Mills will moderate (if that's the right word!) a panel discussion on this topic.

So that's a summary of the papers program for this year's conference, but of course I can't conclude without thanking some of the host of people that made this program possible. Besides the program committee whom I've already mentioned, there is the redoubtable SMPTE staff, Lynette Robinson, Jeff Friedman, Marilyn Waldman, and more; Editorial Vice-President David George, Conference Vice-President Ed Hobson, and General Arrangements Co-Chairs John Brooks and Milt Shefter. At one point, I counted some 30 people around a table, almost all of them unpaid volunteers. An impressive and reassuring demonstration of commitment.

And lastly, a cast of about 150 dedicated professionals who are, of course, the authors and panelists of this, the 135th SMPTE Technical Conference. Thank you. Oh, and Frank, I do really thank you, after all I wouldn't have missed it!

New SMPTE Membership Promotion

Your Society recognizes an urgent need to increase and broaden its membership. The most effective way to grow and promote our Society is through our personal contacts with prospective new members. So as an added incentive to encourage expanding our ranks, we are offering all current members a tantalizing proposition.

Any member can qualify for a one-year free membership just by signing up five new members. Just send in all the five completed applications at one time to SMPTE headquarters, along with your name and membership number. As soon as the applications are processed, your personal membership will be automatically extended for one year from its current expiration date. This offer is valid until March 31, 1994.

The digital information highway is already under construction. We need to make sure its architects and users are part of our membership today. Efforts to recruit even one new member will help to insure that the SMPTE will continue to exercise a lasting impact on the future course of imaging technologies.

Membership forms can be copied directly from the latest copies of the SMPTE Journal, or call Headquarters and they will fax an application to you.

Neil Feldman
SMPTE Membership Chair