

Getting the Imagination in Focus

A Presentation by WALTER A. FALLON

On the opening day of the Society's 114th Technical Conference, 15 October, in New York, Walter A. Fallon, President and Chief Executive Officer of Eastman Kodak Company, gave this address enhanced with a four-screen audiovisual presentation. SMPTE President Byron Roudabush while introducing Mr. Fallon also described a special feature of the presentation, a sound-film clip from George Eastman's address to the Society of Motion Picture Engineers in 1930. Mr. Fallon:



Walter A. Fallon

After appearing before a wide variety of audiences over the past couple of years, it's a special treat to be back with a group that includes people who would appreciate a half-hour dissertation on the enduring beauty to be found in a sensitometric curve. I'm afraid, however, that we ought to forego that pleasure because I sense that you have other things on your minds. These are hardly times to encourage complacency on the part of anyone concerned with the technical end of motion pictures and television.

For example, I note that our good friend Marshal McLuhan is in print again. After settling us in a "global village" a few years ago, he has now installed some seats and turned it into a "global theater." What's playing there is not quite clear. But his references to "electronic man" and "the new electronic citizenry" make it a safe bet that his shooting stock has nothing at all to do with sensitometric curves. And in his latest work, subtitled *The Executive As Dropout*, Dr. McLuhan has added some helpful hints on electronics and the executive that sound suspiciously like "Strike Three" to a man who started out as a chemist, who has spent a number of years in the technology of motion-picture film, and who is now serving time in an executive office.

One must also wonder over some of the statements in the business press—like the recent one that would lead you to believe that the percentage of prime-time television produced on film is diminishing at such a rate that zero is only a few years away. This came as news to Kodak statisticians. They took the trouble to do a headcount on the

shows scheduled for the 1973-74 season. It comes out that 85% of prime-time hours originate on film—actually an increase of a couple of points over last year.

Also, a look at the latest Kodak production and sales figures indicates that somebody somewhere is buying a lot of motion-picture footage. Apparently the word hasn't gotten around about the demise of film. And the people at Kodak who come at me with R&D appropriation requests to sign sure haven't heard about it—I guarantee you that.

Setting the Record Straight

Of course, these gloomy forebodings are not exactly new. We received the first announcement of the imminent passing of film more than 15 years ago. In the meantime, the quality of film has gotten better and better. Film prices have actually gone down while the prices of just about everything else have gone up. And the volume sold has increased annually at a rate well in excess of the gross national product as a whole.

Under the circumstances, one is tempted to drag out the old Mark Twain chestnut about the report of his death being greatly exaggerated. But that one has been over-used. Anyway, there are a couple of other bits of Twain wisdom that seem more appropriate here. The story of his life, Mark Twain once wrote, was that he "was seldom able to see an opportunity until it had ceased being one." On another occasion, he added: "You can't depend on your eyes when your imagination is out of focus."

And that is very much like the story of the broader technology that unites us all, in which motion pictures, television and radio show up merely as different routes to the same end. This is "the technology of making experience repeatable," to use Daniel Boorstin's apt phrase for it. The development of this technology has been characterized by frequent appearances of opportunity cunningly presenting itself to beholders as just one problem after another. Let's recall a few of them.

Problems or Opportunities?

For a starter, we could go all the way back to the precursor of motion pictures, sound recording. Many portrayed the early phonograph as a contrivance of the devil. But who came up with the most alarming vision of all?

Believe it or not, it was the most popular musician of this time, John Philip Sousa. He published this grim warning: "In the prospective scheme of mechanical music, we shall see man and maiden in a light canoe under the summer moon on an Adirondack lake with a gramophone caroling love songs from amidsthips." And! "The Spanish cavalier must abandon his guitar and serenade his beloved with a phonograph under his arm." And finally, "Children are naturally imitative, and if, in their infancy, they hear only phonographs, will they not sing, if they sing at all, in imitation, and finally become simply human phonographs—without soul or expression?" Maybe the old "March King" had something there. But you have to suspect that Sousa may have been less concerned about the guitars of Spanish cavaliers than he was about playing dates for big brass bands.

When Thomas Edison, who had invented the phonograph, applied the same thinking to the visual image, he



Fallon's 4-screen slide presentation.

came up with the Kinetoscope. But he refused to let his imagination roam beyond the penny-in-the-slot, hand-cranked peepshow, because he foresaw another of those problems. If the images were projected so that more than one person could see them at a showing, he would run out of customers in no time.

Back on the sound side, an enterprising young wireless operator, named David Sarnoff, advanced a novel plan for broadcasting signals to be captured and turned into sound by a "Radio Music Box." His associates of the time greeted the idea as an unsolvable paradox. If you *broadcast* something how could you be sure who received it? Besides, it would kill the sales of phonograph records.

When sound and sight came together in the "talkies," a witch's brew of new problems appeared. The microphone became the dictator of content and creativity. Production moved into rooms with walls literally rather than figuratively padded. The camera was relegated to a soundproof box, with its capability of expression shackled. The voice of the director was stilled. At least during takes. And since few of the day's leading players were vocally geared for the big change, where would the stars come from? Who would sell tickets at the boxoffice once the novelty of sound wore off?

There was one personality of the era who made the transition to sound quite convincingly. . . . [At the Conference George Eastman came on the sound film of 1930 to greet the SMPTE at its 15th Anniversary Meeting:

"I am happy to greet this gathering of Motion Picture Engineers. It is a great satisfaction to me to be able to speak to you through the medium of this wonderful invention, the talking film. During the past 50 years, I have witnessed with the greatest interest and satisfaction the growth of the motion-picture industry."

[The audiovisuals used by Mr. Fallon in addressing the 114th Technical Conference consisted of a 40-minute 4-screen slide presentation, including a one-minute 16mm sound film of George Eastman. The presentation utilized 12-foot square edge-lighted cubes, 12 Kodak Ektagaphic slide projectors, one 16mm Kodak Pageant film projector, four dissolve controls with variable rates of dissolve, a punched paper tape programer and approximately 250 slides.]

Mr. Fallon resumes: As Byron Roudabush indicated in his introduction, that appearance by Mr. Eastman is his only speaking role on film. To my way of thinking, his words of congratulation on the growth and staying powers of your organization bear repeating today. At the going rate, I note that it will be the year 2016 before you again hear formally from a Kodak president. But I am confident that the same message will be in order then.

Other Masquerading Problems

Before looking ahead to that, however, let's go back to our survey of opportunity masquerading as problems.

There are a couple of other noteworthy examples in the morgue.

Radio was doomed. Now that we could have pictures to go along with words and music, nobody would be content to just listen. The movies were doomed. Since people could have their entertainment "free" and "live," they weren't likely to pay to get it canned. Newspapers did not look long for this world either. With the advent of electronic journalism, tomorrow's headline would be obsolete before it could be set in type.

Then another major impasse was reached when David Sarnoff, who apparently had not learned from his earlier "problem" in establishing an audience for broadcast radio, committed the NBC network to color. Where was all that program material in color going to come from? Well, here we are in 1973 and television is flourishing. But radio has to be judged a pretty healthy-looking corpse. There are more radios in use than television sets, phonographs and automobiles combined. Incidentally, radio is the chief medium for promoting the sale of phonograph records. Newspapers have proved to be rather durable, too. While the absolute number of daily publications has thinned slightly over 25 years, total circulation in this country has seen a net gain.

Well, how could so many knowledgeable people, so often, lose sight of the opportunity for the problems? What caused the contemporary imagination to go out of focus—as Twain put it? More important, what can we glean from it all that might apply to the heralded confrontation between photography and electronics? It's not difficult at all for the imagination to slip out of focus when it has to be filtered through a series of misdefinitions, misimpressions, misassumptions, and mismatches, as well as myopia, myth and outright fallacy. And it seems that the technology of repeatable experience, by its nature, abounds in all of these.

To take an obvious example, there is the *misdefinition* of the movie audience as those people who buy a ticket at a box office to see a motion picture. By these terms, since 1945 the audience has shrunk from 80 million admissions a week to 18 million a week last year. Numbers like those would do a lot to blur the imagination of anybody considering motion pictures as a business. Yet the fact is that feature films consistently run between 16 and 22% of prime-time television programming. On any given Tuesday night last February, 70 million people were watching movies originally produced for theatrical release or expressly made for TV.

Focusing on the Customer

Closely related to the misdefined audience is the *myth* of market saturation. It's arrived at by counting the hours of television broadcasting and the number of theater screens in this country. The first is limited by the length of the day. The second, while showing some growth, reflects structural rearrangements more than actual expansion. Naturally, this all adds up to a picture of saturation. But there are a couple of flaws in the picture.

The most immediate is the self-imposed phrase, "in this country." It strikes me as more than a little parochial to talk about saturation when about two-thirds of the world's population does not enjoy the entertainment, educational and informational values inherent in the idea of repeatable experience.

It gets even more ironic when you consider that motion-picture film is one of the few items known to man that is standardized throughout the world—due in no small measure to the efforts of this Society. Even if we do stick to our own shores, the saturation argument overlooks the tremendous growth potential in new applications of the visual image.

Over the last ten years American business has multiplied its investment for hardware and software in motion

pictures and others forms of audiovisual communications. The potential in this area alone has grown so fast that it now equals in dollars the total of what the entire business in audiovisuals amounted to about ten years ago.

Then, too, the growth forecast by some for cable television overwhelms any idea of market saturation. Today about 10% of American homes are receiving cable television. By 1980, about 35% of homes are expected to be connected. Watching what's happened in places like Toronto—where 45% of the TV homes are connected by cable—reinforces the plausibility of such a forecast. It doesn't take a tightly focused imagination to see that staple attractions on pay TV are going to be sports and feature movies on an extra-charge basis. If each of the wired homes averages just one movie a month at a charge of, say, three dollars the total would about equal the boxoffice receipts of all the movie houses in the United States last year.

Now, it's possible that these movies of the 30's could originate on some electronic medium. It's much more likely to be on film. All of the artistry and craftsmanship of movie-making has been built up around film. The center of gravity is there. And in my opinion, it will remain there, as movie-making continues on its path of development.

Videotape's Arrival

That brings us to the basic *misimpression* underlying the repeated promises of the tape take-over that has been "imminent" for some fifteen years now. The misimpression is that film is a sitting target while video systems advance in gigantic leaps. It overlooks the real facts of what has been happening in both fields.

During the fifteen years I'm talking about, no fewer than 31 new or improved motion-picture film products have been introduced by Kodak alone. As many of you already know, the 35mm color negative that will become available to the industry in limited quantities around the first of the year, offers a sharpness and lack of graininess that we believe will set new quality standards for the projected image. The 16mm version of the same stock makes possible results comparable to what was obtained with 35mm only a few years ago. Television producers operating under budgetary constraints will now have another option for cutting costs with very little sacrifice in picture quality.

Much of the development work in electronic systems has centered necessarily on miniaturization of equipment. Until electronic cameras and recorders become a good deal less costly, a lot lighter, and shed their umbilical cords, they are likely to stay pretty much studio-bound.

Developments in Super 8

We all recognize that considerable progress is being made in these and other directions. But what should also be recognized is that equivalent, if not greater, progress has been made in the same time frame toward making the photographic process smaller, more economical, easier to use—and still of professional caliber. I'm referring principally to developments in super 8.

When you put this together with a videoplayer that allows direct plug-in of a film cassette into the electronic circuit, the idea of super-8 film chains begins to move out of the novelty phase for the television industry—both broadcast and cable—and certainly for educational, industrial and military users. In the future, any low-cost, tape installation will have to be compared for economic justification alongside super 8. And it is in this area of economics that many a *mismatch* has occurred.

Most of the cost justifications made for tape rest on two rather wobbly premises. First, the inherently higher cost of electronic equipment is not always allowed to enter the picture. Second, the re-use factor of the tape is weighted



George Eastman addressing the Society on film in 1930.

heavily. In other words, you get the razor free and the blade stays sharp indefinitely. It doesn't take a degree in economics to realize that things just don't work out that way in any line of business. Equipment costs have to be amortized somewhere. And you re-use tape only at the expense of losing the program material or of transferring it to film. Any tape-and-film comparison is a case of apples and oranges unless it takes into account the total costs of each approach.

As for *myopia*, I guess that most of us who ever worked in the technical side of the business have from time to time slipped into the shortsighted viewpoint that the quality standards of a whole industry can be set by laboratory demonstrations.

In a way I wish this were so. I could walk you through the laboratories up in Rochester and show you some of the things going on in lasers and film characteristics, for instance, that would probably knock your eyes out. And there we are again—right back at myopia. Because life in the laboratory just isn't the same as life in the field. *Actually, we see more than enough room for improvement in the average quality of results with existing film technology.*

The misassumption that I had in mind is the fairly common one that technological progress is a process of replacement. We come by it probably on the basis of a few outstanding innovations:

the automobile for the horse and buggy
the jet engine for the piston engine
the transistor for the vacuum tube

As a matter of fact, these are more the exceptions than the rule.

If you took a broad survey of a hundred or more significant developments of this century, I believe you would find that they were more additive than subtractive. That is, new things coming out establish themselves alongside what was already there, rather than pushing them out.

For example, I can remember that about the time I was subjected to Elementary Physics, one of the big events was the introduction of the fluorescent lamp. It gave more light with less wattage. You could twist it into any number of fascinating shapes. Naturally, the fluorescent was going to put the familiar incandescent light bulb out of business. What actually happened, of course, was that each has found its own place because of certain distinct advantages: the fluorescent, for utilitarian areas where a high overall level of light is important; and the incandescent, where the human desire for selectivity, convenience and warmth needs to be satisfied.

Moving to more recent times and closer to home—my home if not yours—I can tell you categorically that the

years which saw the widespread acceptance of instant photography were the period of greatest growth in history for conventional photography. One could cite many other instances in which new technology moved in alongside existing technology with the two getting along just fine.

The Tape vs Film Fallacy

The misassumption that progress is necessarily equated with replacement has given rise to what I believe is the *outright fallacy* underlying the Great Debate. It is that the future of film and tape is necessarily an "either-or" proposition. It is true that there are certain applications within the broad technology of repeatable experience where one or the other has clear-cut superiority.

In the early days of television, it was my Company that brought out the process that gave birth to the so-called "hot kine," allowing Uncle Miltie to be seen in prime time on the West Coast. Therefore, I can tell you that the sight of a still-damp original being slapped on a projector for playback was never quite our notion of the ideal application of film's best characteristics. The instant-playback capabilities of videotape fill a real need here. For this one clear-cut purpose, tape can do a job for which film was never really suited.

On the other hand, for large-screen projection, where resolution and image sharpness are the criteria, film is, today, the only suitable medium. And with an improved emulsion coming along, as I mentioned, it appears as though this state of affairs should hold good for quite a while. In between these two extremes is a wide range of production, distribution and show situations in which both media present the user with advantages, whose relative weight depends on his priorities.

The electronic medium has going for it immediate access, some reusability of the raw material, more control of the output. The photographic medium offers greater camera mobility, more practical convenience in editing, more information storage potential, international standardization, and lower cost. Users are going to want all these characteristics on different occasions. It looks as though both media are going to be around together as long as they have something to offer the user. And at Kodak we feel that will be a long, long while. So this would be as good a time as any to start talking sense about the inter-relationship between the two. I think we could all subscribe to the simple statement of principle that the user ought to be able to make his decision on the basis of what he wants to do rather than the least obnoxious trade-off.

I'll tell you a couple of things that we have been doing at Kodak lately to further that principle. In addition to improving the film materials themselves, we have applied substantial efforts at the points of match-up between photography and electronics. As you probably remember, we demonstrated before this society the feasibility of videoplayer equipment using super-8 film cartridges.

This equipment makes it possible to plug photographic images directly into electronic circuitry for conversion and display. It is compatible with FCC requirements for broadcasting, and it meets the NTSC signal standards. Also, the Kodak Videoplayer might do a little something to further the cause of international understanding in communications. I am happy to say that it has been accepted abroad for use in the PAL system.

In the reverse direction—electronic-to-photographic transfer—we have made noteworthy advances in the Triniscope method of recording. The aim point here is to make available for use with the electronic medium something like the kind of quality control that color separations brought to the print medium. Triniscope is just one example of what is being done to help you in the industry get the most you can from the present state-of-the-art.

Now, I am sure if an electronics manufacturer or a videotape producer were here in my place, you could be hearing of similar steps being taken from their positions along the tape-to-film route. But all the steps that they or I could cite necessarily remain limited and isolated.

Focus for the Future

Getting the imagination into focus requires a common vision of what it is we're supposed to be focusing on. Admittedly, dreaming about what might be doesn't come that easily to us "technical types." We're more accustomed to working out precise specifications of what is and to be thinking of progress in incremental steps. But it has happened in the past, and every time it has opened new vistas in the technology of repeatable experience.

As far as I am concerned, there could be no more productive place for it to start happening again than in the deliberations of this Society. And no more auspicious time than the present.

If this kind of common vision does come about, if the collective imagination of a most imaginative industry can be brought into a single focus, I am confident we will all realize positive results. And when that future President of Eastman Kodak keeps his speaking date with you in the year 2016, he'll be able to cite one more instance in which opportunity came to call, masquerading as a problem.