Luncheon Address: "Isn't This Where We Came In?"

By Joseph A. Flaherty

One of the problems in speaking at such a luncheon as this is that you never know what the audience expects. It is not unlike the occasion when Isaac Stern was scheduled to give a midwinter recital in Ithaca, N.Y. Unfortunately, on the appointed day an immense blizzard dropped 20 inches of snow on Ithaca, and when Mr. Stern came on the stage that evening, only six people had made it to the auditorium, and two of them were ushers. Isaac looked at this audience, laughed, and said, "This is ridiculous. Let's just go to the bar, have a drink, and warm up." One man in the audience jumped up and said, "Oh, Mr. Stern, I've driven for six hours through this snow just to get here tonight. Sing something."

Actually I did not tell this story right. What is written here is that the recital was in Rochester, N.Y., but you know I could not touch that one!

Well, since I am not sure what kind of speech you expect, the only solution is not to give one — at least not a speech in my words. Instead, I would like to ask you to listen to the words of the scientists, philosophers, and engineers who have been here before. This may be the first day of the rest of our lives, but it is not the first day of television technology. As they say, "It's a rerun," and, "Isn't this where we came in?"

Indeed, it was Patrick Henry, addressing the Continental Congress, who said: "I know of no way of judging the future except by the past." And Santayana warned: "Those who cannot remember the past, are condemned to repeat it."

Now they were in fact, optimists, because in 1805 Hegel had noted: "What experience and history teach is this — that people and governments never have learned anything from history, or acted on principles deduced from it."

This failure to improve the future based on an understanding of past mistakes is all too often our own legacy and that of other scientists.

Text of luncheon address delivered at the 22nd Annual SMPTE Television Conference in Nashville, Tenn. Joseph A. Flaherty is vice-president, engineering and development, CBS-TV Network, New York, NY 10019.

Joseph A. Flaherty delivering speech at the conference Get-Together Luncheon.

In 1985 Lord Kelvin, president of the Royal Society, concluded: "Heavier-than-air flying machines are impossible." In 1899, Charles Duell, head of the U.S. Patent Office, reported: "Everything that can be invented has been invented." Further, in 1923, Robert Millikan, the Nobel Prize-winning physicist, assured us: "There is no likelihood that man can ever tap the power of the atom." Finally, for students of baseball technology, the expert, Tris Speaker, in 1921 noted: "Ruth made a big mistake when he gave up pitching."

These are, of course, distinguished prophets. I cannot match their intellects, only their mistakes. In my first paper on electronic cinematography, published in the *SMPTE Journal* in July 1970, I extolled the virtues of single-camera videotape production for prime-time television programs, but managed to note: "The recording of news events is a worldwide operation involving daily contributions of many photographers in virtually every corner of the world. As of now, therefore, it is simply not possible nor economically feasible to compete with 16mm film for this application. In this case, electronic photography must simply plead 'no contest.' "

Three years later, ENG was sweeping the nation and would sweep the world, but prime-time television programs are still largely on 35mm film. So much for my prophecy!

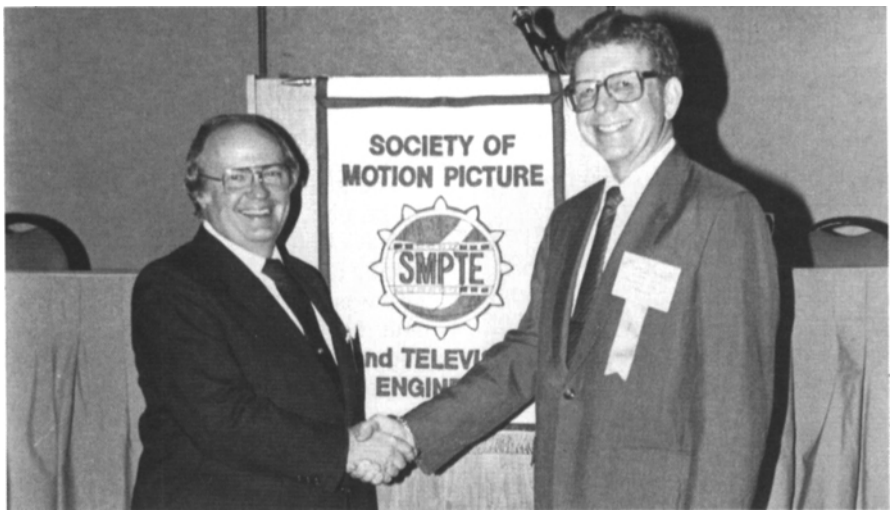
The general failure of technological prophets stems from the fact that we have failed to recognize the accelerating rate of technological advance. This was well understood by the astronaut Neil Armstrong, who in 1969 said: "Science has not yet mastered prophecy. We project too much for the next year and yet far too little for the next ten."

Some, of course, have projected far too little altogether. In fact, change is such anathema to human nature that the human species will rationalize away not only the change, but the very possibility of it!

In the first book ever written on television in America, published in April 1929, Drs. Sheldon and Grisewood of NYU wrote: "In preparing a book on television one is confronted with the possibility of a revision before the book is off the press. The kaleidoscopic manner in which advances are being made is, of course, responsible for this ... With this in mind the situation is a difficult one. Shall we go to the limit in our predictions and line up with the 'Jules Vernes' of the day or even with those wild spectacular writers who out-Verne Verne in some of our present daily publications? Or shall we line up with the rank and file of humdrum unimaginative engineers, who still almost deny the existence of even the steam locomotive; perhaps, because of the fact that one is considered a good scientist by scientists if he is ultra skeptical of future developments? ..."

I will leave it to the student to calculate his own "humdrum unimaginative" index.

Drs. Sheldon and Grisewood continue: "The chief difficulty at present is that television requires a rather broad band of wavelengths. Had television come 10 years ago this would have presented no difficulty. As matters stand now, however, with a broadcast station crowded into every possible space in the spectrum, the introduction of television will of necessity crowd some of these out. With their enormous commercial possibility, none are willing to drop out for the general good for the future of television. Here, perhaps, lies television's



SMPTE President M. Carlos Kennedy (R) meets with Society Governor-At-Large Joseph A. Flaherty at the conclusion of the Get-Together Luncheon.

greatest obstacle. It is probably greater than the various technical obstacles which have been presented in this book. In the meantime the fact that there is no public demand for television magnifies this difficulty. If the public knew that it wanted television, if there would arise a vast army of enthusiasts such as those who built one home-made radio set after another a few years ago, then television would at least be given a hearing . . ."

"Isn't this where we came in?"

Their 1929 view continues: "Another difficulty comes in the lack of standardization. If one transmitter is working with a scanning disc of 48 holes, another with 36, two receiving discs would be needed. To shift from one station to another we should have to change the discs or make some equivalent adjustment. This is but one of several problems which lack of standardization presents. On the other hand, standardization at the present stage is dangerous. It is extremely difficult to change a standard however undesirable it may prove, after the public has invested thousands of dollars in equipment."

"But development goes on, and will go on. There is no question but that the technical difficulties will be overcome. This in turn will overcome the other difficulties which have been outlined. There is little question that 10 years from now we shall receive television broadcasts as readily as we receive radio programs today. And they will be relatively as satisfactory."

Such prognostications were not only offered by learned scientists, they were also promulgated by the then knowledgeable trade press. In the 1931 edition of *Radio Design* magazine, the author examines the new television technology, in an article entitled, "Is Television Coming Around that Corner at Last?"

"Is television coming around that corner at last? A lot of anxious station owners and stock promoters seem to think so, even if some responsible radio engineers are inclined to believe that the present hurrah is forced and premature . . . The Columbia Broadcasting System, bitter commercial rival of the RCA-owned National Broadcasting Company, is transmitting with obsolescent RCA apparatus, while RCA engineers work feverishly behind locked doors on new electronic devices of great promise. NBC rents the 85th floor of the Empire State Building and prepares to sprinkle New York City with television images on the quasi-optical waves. NBC and RCA officials smile mysteriously when the word television is mentioned and issue vague but hopeful statements to the press . . ."

Fifty-seven years later it would seem that very little has changed. We still operate with obsolete equipment, and NBC . . . .

Radio Design continues its 1931 forecast: "The over-enthusiastic televisionists are making their big mistake in thinking that television will repeat the glamorous history of radio broadcasting, when every sign indicates it will not and indeed cannot. Conditions now are altogether different from what they were ten years ago. Today we have a Federal Radio Commission, an aggravating patent situation, an overcrowded spectrum, an overabundance of radio factories, a lot of politicians with radio axes to grind, and worst of all, a sophisticated buying element that has been spoiled by high quality broadcasting and high quality talking motion pictures. If not for the 'talkies,' the present crude televisors might stand a slight chance, as the mere novelty of a sight and sound combination would be enough to sell a lot of radio apparatus. However, the talkies have entirely erased this possibility . . ."

"As technical conditions exist now, it is comparatively easy to produce very fine television images, but exceedingly difficult to transmit them. It is the medium of transmission that limits the entire art. The air is simply crowded to suffocation and even the most restricted television systems require a healthy slice of spectrum."

Isn't this where we came in?

If the word "television" is removed, and the name of your favorite new technology inserted, you can read the same article in any of today's trade magazines. Mankind wants to believe the lyric: "Everything is up-to-date in Kansas City, they've gone about as far as they can go."

The British, however, seem to have a better perspective on this problem, as illustrated by H. G. Wells, who wrote in 1906: "In England, we have come to rely on a comfortable time lag of fifty years or a century between the perception that something ought to be done, and a serious attempt to do it."

In fact, it took 400 years from the time of Henry V's great military successes to the reign of George III before the latter finally gave up the English claim to the French throne!

The French do not understand such a long period of reasoned contemplation before action, which led François Mauriac to explain that: "The English are a not very spiritual people, and so they invented cricket to give them some concept of eternity."

The French, on the other hand, always have a very clear sense of purpose and rectitude. In 1719, Antoine Rivarol wrote: "What is not clear is not French." Or Napoleon writing to General Lemarois in 1813: "You write to me that it is impossible; the word is not French."

Indeed, the French sleep better with the dictum of Jules Poincarré: "To doubt everything or to believe everything are two equally convenient solutions; both dispense with the necessity of reflection."

Let us turn from the babble of prophets to the words of the achievers. Few people made as many fundamental and far-reaching contributions to television as did the late George Brown of RCA, who directed the then RCA Laboratories during the growth of television and of NTSC color. In his memoirs, *And Part of Which I Was*, he records how nationalistic politics stood in the way of technical progress and factual argument during the effort to standardize color television in 1962. In his chapter entitled "Decision by Default," he wrote:

"... [In Vienna] We were able to run a continuous show with live cameras and tape recorders. Since the French in particular had been proclaiming that NTSC signals could not be tape-recorded satisfactorily, our men showed pictures first of a live act followed immediately by a playback from the tape machine. Dr. Lamont, who arrived from London early in the week, noticed one French visitor toying with a magazine while we were playing back the program from the tape, and he tried to direct the man's attention to our display. The recalcitrant Frenchman refused to look, saying 'I do not wish to look. I wish to continue to be able to say that I have never seen a satisfactory tape recording of the American system.'

"It was quite clear that no delegation was to be swayed by engineering logic since they had come from home as instructed delegates with no authority to exercise judgment. At the same time, the delegates from Japan, the United States, and Canada were not about to embrace anything but NTSC..." Japan, the U.S., and Canada — that is a strange trio, isn't it?

Naturally the standardization effort failed, and George would document that failure with his typical scientific brevity and directness:

"My next journey in the service of color television came only a month later when I attended the Fourth International Television Symposium in Montreux, Switzerland, where I presented a paper entitled Color Television — 1965. I concluded by saying: 'Europe requires leadership in color television. Nothing can be solved by committees which can only endorse or negate ideas. The Vienna meeting, with many instructed delegates who could not change their posture in spite of their personal convictions, and confronted with political deals announced prior to the meeting, showed that you did not yet have the mechanism for reaching unanimous decisions based on engineering facts. Instead you devised means which made virtually certain that no decision could be made.'"

Conference attendees engaging in good conversation at the Thursday evening reception.

Johann Wolfgang von Goethe has said: "Nothing hurts a new truth more than an old error."

Shakespeare's Macbeth has said: "Come what come may, time and the hour runs through the roughest day."

And I say technology runs apace, and invention seems a virus.

Historian Elting Morison wrote: "Is it possible, if one sets aside the long-run social benefits, to look upon invention as a hostile act — a dislocation of existing schemes, a way of disturbing the comfortable bourgeois routines and calculations?"

This led Smithsonian Institution Secretary Adams to write recently in the Smithsonian's *Horizons*: "There are some obvious lessons in all this. Inventions, especially visionary ones that disturb established patterns, rarely diffuse rapidly and successfully of their own accord. Different talents for technical innovation, organizational leadership, intrigue and plain, unbending stubborness are called for at different phases in their acceptance. Centralized, bureaucratic managers and industrial giants are alike in too often being obstacles to, rather than sources of, broader perspectives. Enmeshed in present constraints, higher echelons fail to notice that most future problems and solutions lie outside of this framework."

George Brown as an inventor knew this well and knew the travail that lies between the dream and the device, between the hope and the hurrah. He wrote: "From the early beginnings of television investigation, the prospect of adding color to television pictures had fired the imagination of most people who had fished in the television pond. The technical and not-so-technical literature is loaded with ideas, which if actively pursued might have led to substantial results. But the distance between a single paper idea for a display device or a pick-up device and a complete system is measured in the equivalent of thousands of leagues."

"Thousands of leagues" — ten-league boots still may be too small.

George also had the sense of when to end the dream and build the device. Of the FCC Hearings on NTSC color television, he wrote: "I was informed that I was scheduled to be on the witness stand in one hour in order to describe the RCA system. Just as I approached the witness chair, I was handed a special delivery letter from a genius at RCA Laboratories telling me that he had a much finer system in mind and advising me to stop our efforts in Washington in order to concentrate on his discovery. I put the letter in my pocket and testified for the next eight months."

Isn't this where we came in?

Hippocrates, in his precepts, warned: "Time is that wherein there is opportunity, but opportunity is that wherein there is but little time."

In 1610, Francis Bacon would say: "He that will not apply new remedies must expect new evils, for time is the greatest innovator."

Whatever legacy we leave behind, we would do well to remember von Goethe: "Error has the advantage that you can talk about it forever; truth must be put to use right away, or it disappears."

Before it seems that I have talked to you forever, let me observe that, since I have spoken to you through the words of great scientists, philosophers, and poets, I must myself be scolded by Hippocrates himself, who admonished: "If for the sake of a crowded audience you do wish to hold a lecture, your ambition is no laudable one, and at least avoid all citations from the poets, for to quote them argues feeble industry."

I, feebly, thank you.

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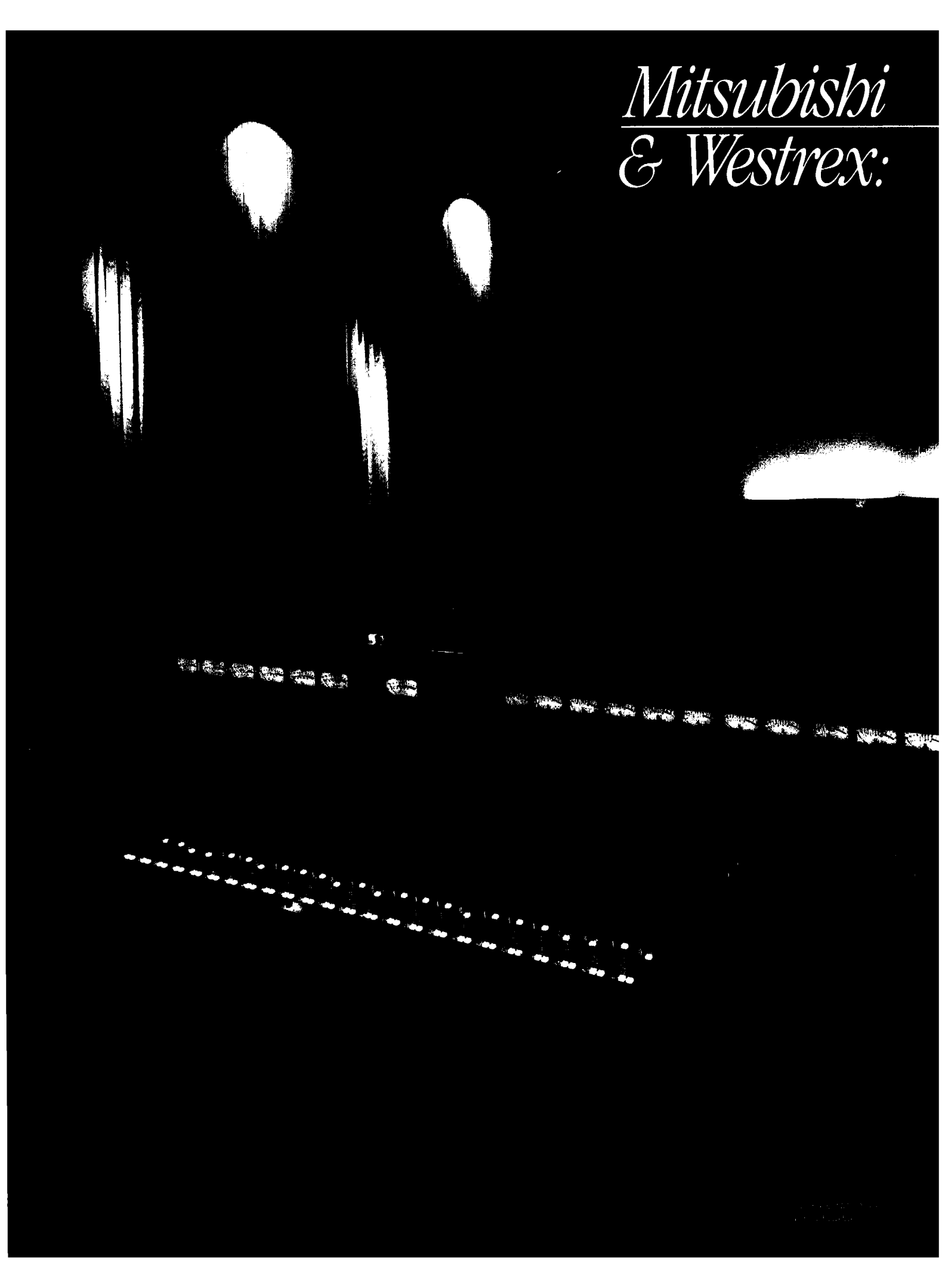

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