

# 50 years ago in the Journal

Joe W. Coffman, "Art and Science in Sound Film Production," Feb. 1930

In some ways it is unfortunate that the radio industry supplied most of the sound experts to the film industry. In radio broadcasting it usually is desirable to present all sounds as coming from approximately the same plane — that of the microphone. And so levels are raised and lowered to bring all sounds out at approximately the same volume, the microphone being placed as near as possible to the sources of sound.

But in talking picture presentations, it is very desirable to achieve space effects, and dramatic variation of volume level. The monitor operators are realizing this to some extent, but the old habits die hard. It is difficult to resist the tendency to place microphones all over the set, to switch from one to another, and to twist the dials which vary the volume levels.

At the present time, the ideal condition is not always possible to achieve because of technical considerations, but it seems unquestionable that eventually the first rule of successful dramatic recording will be: "Use one microphone, in the general vicinity of the apparent camera location; rehearse the scene to determine the highest permissible level; set the dials, and forget them." Not all sound men will agree with this statement, yet its validity can be demonstrated readily. It is believed that general application of this rule would do more than any other one thing to free the talking picture from its present characteristic stiffness.

The general tendency in all the studios seems to be to permit mixers to follow their own judgment, and their judgment is not universally good. This probably is a good policy in the long run, for it does permit of experimentation, and the poor mixer will eventually eliminate himself. However, it also encourages a tendency toward "artiness" on the monitor's part, and to develop the belief that there is some magic in the twisting of the dials that is beyond the grasp of ordinary men. As a general rule, it may be said that the best mixer is he who does the least mixing, and the best microphone placer is he who places the fewest number of microphones.

"Progress in the Motion Picture Industry," Report of the Progress Committee, Feb. 1930

To date only one type of wide film has been put on the market, this being 70mm wide. Comment of the trade has been most enthusiastic with regard to its suitability for

scenics and news events, but it is apparent that a new photographic technique is required to secure more pleasing perspective in the case of photoplays . . .

Studios in Hollywood are now producing only about 5 per cent of silent pictures. When it is considered that only one year ago the first dramatic sound pictures were shown before the Society, notably *The Singing Fool*, the remarkable progress made since that time is apparent. There has been a steady improvement in the quality of sound reproduction, notably in the theater, but in many cases the quality in the theater falls far short of that which the film is capable of producing when it leaves the studio . . . With the high quality music given by the modern radio receivers the public is realizing that the average theater music is not equal in quality to that emanating from their radios at home. . .

No fundamental advances have been made in the field of stereoscopic motion pictures and although some of the sponsors claim that their wide film processes give

stereoscopic effects, they are at the most pseudo-stereoscopic. A much higher order of relief is noticeable in many of the pictures in color.

Although color pictures have been televised during the past six months, the probability of television usurping the present motion picture appears to be very remote.

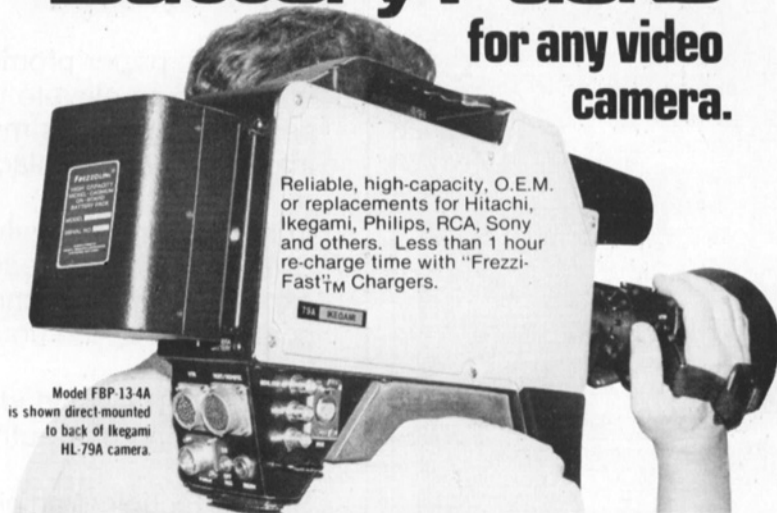
## 25 years ago

Albert Abramson, "A Short History of Television Recording," Feb. 1955

A whole new field of television film recording is being introduced by the development of a completely new electronic picture recording system by High Definition Films Ltd. . . . Avoiding ordinary television broadcasting requirements, they are not bothered by such items as a restricted bandwidth, limited contrast range and tonal gradation, and the necessity of mixing in synchronizing signals. The whole apparatus is operated on closed-circuit under virtually laboratory conditions.

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resolution. To equal this definition, a 24-frame picture would have to have 992 lines with a bandwidth of 15.75 mc/s. This may be increased to 1300 lines if necessary. However, it was felt that it would not be necessary to go much above a thousand to equal today's 35mm film standards.

The line scanning is sequential. It is known that interlacing is not needed for pure film recording purposes. Interlacing's main advantage of eliminating flicker while conserving available bandwidth does not overcome some of its more serious faults. These include line pairing, line crawl, and movement blur. Since in this system, the picture signals are kept separate from the synchronizing signal, the line frequency does not have to be related to the frame frequency. This simplifies the pulse generating apparatus and also enables the number of lines to be varied to suit the resolving power of the type of pickup tube selected. . .

Refinements of the High Definition system were made and it was presented with the following features in 1954.

1. The cameras in England were the Pye

Radio type using the Pye Photicon image iconoscope pickup tube. Cameras for use in the U.S. and Canada were the General Precision Laboratory type using the 5826 image orthicon pickup tube.

2. The cameras used sequential scanning of either 625 or 834 lines/frame at 24 frames/s.

3. The chain is essentially closed circuit with a bandwidth of 12 mc.

4. The picture and synchronizing signals are never mixed and a new method of signal control has been devised.

5. A special "staircase" signal is present on all picture monitors in the form of a step wedge. Its presence allows accurate adjustment of the signal amplitude and lift.

6. On the recording monitor, two photocells are used for measuring brightness of the first and tenth suppression steps on the kinescope tube face. . .

The electronic motion picture using neither film cameras nor motion-picture film is an actuality. The television camera and the magnetic video recorder will allow the motion picture a perfection and flexibility that has never before been attained.

C. Francis Jenkins	"Stereoscopic Motion Pictures"	Jan. 1919
Lee De Forest	"The Phonofilm"	May 1923
D. L. MacAdam	"Quality of Color Reproduction"	May 1951
Rodger J. Ross	"Film in Television"	June 1958
Peter C. Goldmark	"Color Electronic Video Recording"	Aug. 1970

These papers illustrate the Society's historical commitment to advance motion-picture and television technology.

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