SMPTE Almanac

By Michael Dolan

In this column we provide interesting historical briefs from the *Journal* articles of days past. The purpose of this column is primarily entertainment, but we hope it will also stimulate your thinking and reflection on the Society's history, how far we have come in the industry, and (sometimes) how some things never change. This is not meant to be an authoritative reference, and no attempt is made to correct any past errors or omissions of the *Journal*. We simply hope you enjoy the material. This column is sponsored by Television Broadcast Technology, Inc.

25 Years Ago in the *Journal*

The August 1983 *Journal* published in "A Triphonic Sound System for Television Broadcasting," by Emil Torick: "As a consequence of ever-increasing public awareness accompanied by high interest in home reproduction of multichannel sound, the process of selecting a standard transmission system for stereophonic television sound is now under way. It is an activity initially undertaken by the broadcast and consumer electronics industries, and one which will eventually include the FCC and the consumer marketplace…Interest in multichannel sound with visual images was given strong impetus by Walt Disney's pioneering movie Fantasia, first released in 1940. Today the 35-mm cinematic film specification provides for four tracks of audio recording, and the 70-mm standard provides for six…Given the apparent impossibility of satisfying the perceptual requirement for listeners at arbitrary locations within a room, it is small wonder that early practitioners of stereophony characterized the center image problem as the "hole in the middle."…One recent solution, which appears to be quite satisfactory from the listener's point of view (hearing) is employed routinely in the motion-picture theater. Important dialogue is usually assigned to a discrete center channel feeding a center-screen loudspeaker…The implementation of a new triphonic center signal (T) in the following audio matrix equations satisfies all of the above requirements: $M = L + 1.4C + R$; $S = L - R$; $T = -1.4C$."

50 Years Ago in the *Journal*

The July 1958 *Journal* published in "Development and Applications of Transparent Cathode-Ray Screens," by Charles Feldman: "The luminescence produced in the screen by the electron beam is scattered laterally by the [powdered phosphor] grains, limiting the resolution of the image. Ambient light falling on the screen is scattered back to the observer making the screen appear bright and thereby limiting the contrast of the image. It is desirable, therefore, to form luminescent screens free of grains that scatter light. Such screens will be transparent, providing, of course, the crystalline material is transparent. One could, in principle, accomplish this by growing a single crystal of the phosphor having the same dimensions of the TV or cathode screen desired. However, this is quite impossible with the present crystal-growing technique. One can, on the other hand, accomplish the same thing by forming the screen of grains, which are too small to scatter light. To accomplish this, the grains must be 100 times smaller than those currently employed. The technique, described here, of thermal evaporation in a vacuum has proven to be singularly successful in producing luminescent screens of sufficiently small grain size to be transparent."

Figure 1. The transparent cathode-ray screen.

75 Years Ago in the *Journal*

The August 1933 *Journal* reported in "The Use of Mazda Lamps for Color Photography," by R.E. Farnham: "The recent commercial availability of at least two satisfactory systems of three-color motion picture photography will undoubtedly result in a more extensive production of colored motion pictures than has taken place in the past…In the case of black-and-white photography using panchromatic film we employ an emulsion that is highly sensitive at the blue-violet end of the spectrum and somewhat less sensitive toward the red-orange region. The Mazda lamps have their greatest radiation in that part of the spectrum where most light is required and less output where the film is most sensitive…The color photographic process requires a light source having more nearly equal proportions of all colors as well as approximately fifty per cent greater illumination intensity than is necessary for black-and-white photography. The simplest method of obtaining light of the required quality is to employ a suitable filter, either at the lens or in front of the lighting equipment to absorb the excess red-orange-yellow light and thus more nearly approximate a white light."