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50 years ago in the Journal

Lincoln Thompson, "A New Power Amplifier System," November 1930

The two characteristics of the thermionic amplifier tube which have given it unique supremacy over any other amplifying device have been its ability, first, to amplify signals without appreciable distortion, and, second, to amplify signals without requiring any appreciable energy from the signal source. The latter feature is due to the ability of the grid to control the flow of electron current from the filament to the plate without taking any material current itself.

Glenn E. Matthews, "A Motion Picture Made in 1916 by a Two-Color Subtractive Process," November 1930

The working principle underlying the two-color process known as *Kodachrome* is the use of a tanning bleach for treatment of the duplicate negative, which removes the negative image and differentially tans the area where the image existed. When the film is treated subsequently with dyes capable of dyeing soft gelatin, a positive dye image is produced.

This tanning bleach effect was first observed accidentally by J. G. Capstaff about 1910 when engaged in experiments to find a method of making carbon prints without recourse either to artificial light or to daylight in order to tan the bichromated gelatin tissues. In the course of his work, a dark-room safelight was required and he decided to make one by dyeing a waste plate. Not having one handy, he used an old negative plate, which he bleached, washed, and immersed in the dye solution. On examining the plate he was greatly surprised to observe that it showed a dye image. No further use was made of the observation, however, until several years later, after he had joined the staff of the Kodak Research Laboratory.

Experiments on the Kodachrome process were initiated by Mr. Capstaff in the fall of 1913, using glass plates as the preliminary materials with which to work out the details although from the beginning the process was regarded as one to be developed for color cinematography.

. . . Early in 1915, the first experiments were started to work out the adaptation of the process to motion picture photography.

. . . After the preliminary tests had been made on the process during 1915, it was decided to test the practical value of the method by actually photographing a motion picture story . . . It is believed that this picture is the first motion picture story to be photographed by a two-color subtractive process. Gaumont and Urban had, of

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course, made pictures by additive processes previous to that time. The date of the production, July, 1916, is established by a date on an actual letter written by request which appears in the first part of the picture.

... The results were naturally crude considered in the light of quality of present day color pictures, but are historically interesting as an example of an early color process.

25 years ago

D. R. White, "Progress Toward International Motion-Picture Standards," November 1955

As Chairman of ASA Committee PH22 it has been my privilege to head the U.S. delegations to two meetings of the Technical Committee 36, Cinematography, of the International Standards Organization. The first of these was held at New York in 1952

and the second at Stockholm, Sweden, this past June.

I am convinced that there are genuine business values in these voluntary international activities just as there are business values in our own voluntary national standardization efforts. In both cases, compliance is termed voluntary but the meaning is different from country to country. In the U.S.A., voluntary compliance with a standard clearly means we are free to comply or not as we wish. A buyer who wishes to purchase goods in accord with a given standard can place the requirement in a purchase order and compliance then becomes a matter of contract. On the other hand, engineers can plan a new balance of picture area, soundtrack and perforation dimensions, and that new system can compete with older systems without the mere existence of older standards being a complete bar to progress.

There are countries where this description does not apply. In some cases standardization is considered a function of government. Compliance with a standard set up within a given country can become a matter of law; therefore in such a case the voluntary acceptance of an international proposal is then not an individual acceptance but is a national acceptance.

These differences in viewpoint and pro-

cedure enhance rather than lessen the importance of timeliness in standardization activities. If delayed too long, diverse proposals become law in different countries and agreement on any one proposal becomes very difficult. If started too early, the need is not sensed in all countries and there is a resulting lack of cooperation. Examples of each type could be cited from the Stockholm experience. I think, however, you can see the business value and importance of properly timed international standardizing activity.

The meeting in 1952 was the first meeting of its kind, and while significant work was accomplished, subsequent events showed opportunities for improvement in organization and handling of details that had kept the paper work slowed to a snail's pace. This was true even in areas where agreement appeared to have been reached at the meeting. Omitting the many details, suffice it to say that the organization of the 1955 meeting benefited from the 1952 experience and we hope and expect that follow-up work will proceed much more expeditiously.

... I believe you will recognize from this brief review the significant progress which is being made in international standardization in cinematography.

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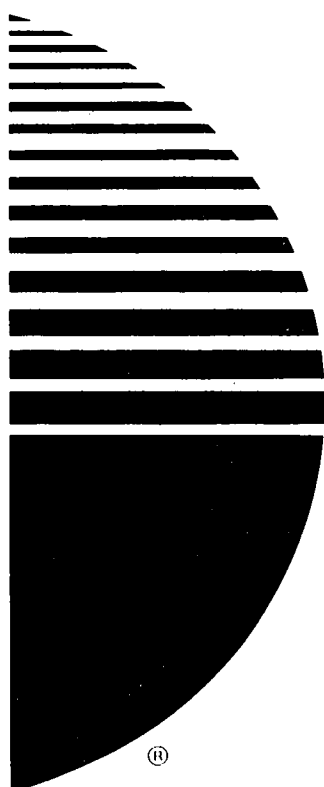
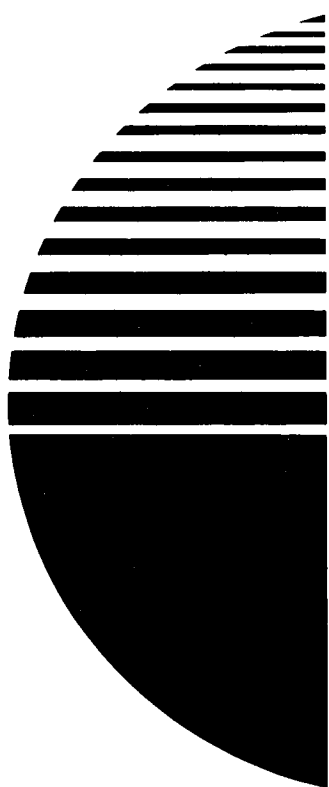
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