

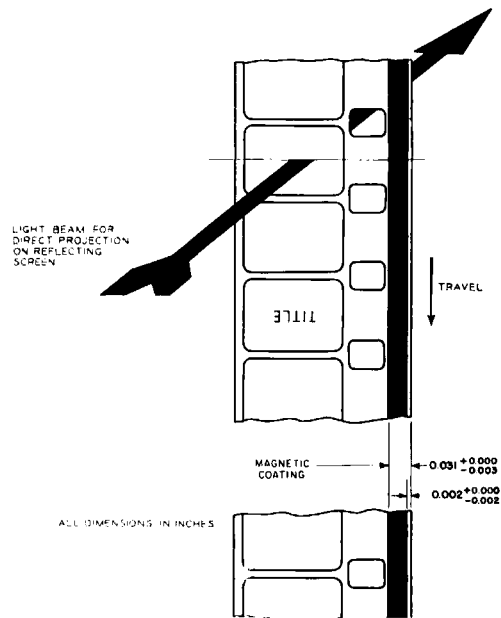
# motion-picture standards

## Proposed American Standard PH22.88

A Proposed American Standard, PH22.88, Magnetic Coating of 8mm Motion-Picture Film (fourth draft), is published here for a six month period of trial and criticism. Comments should be sent to Henry Kogel, Staff Engineer, prior to August 15, 1955. If no adverse comments are received, by that time, the standard will then be submitted to the ASA Sectional Committee, PH22, for further processing as an American Standard.

The third draft of this proposed standard was previously published in the February 1954 Journal for a three month period of trial and comment. Exception was taken to the third draft on two counts: (1) at the time, only one projector employed the specified point of scan relationship whereas there were several kit manufacturers who located the point of scan before the picture aperture rather than after and (2) it was felt that because of reduction printing considerations, the projection rate of 8mm film should hinge on that established for 16mm film and this rate is not rigidly fixed at the moment. The proposal was therefore returned to the Magnetic Recording Subcommittee for reconsideration. The subcommittee redrafted the proposal as a purely magnetic coating specification with the intention of specifying the point of scan and rate of projection in a separate standard or SMPTE Recommended Practice when conditions permit. This draft was subsequently approved by the Sound and Standards Committees and is the one published now for trial and comment.—H.K.

Proposed American Standard	PH22.88
<b>Magnetic Coating of 8mm Motion-Picture Film</b>	



The magnetic coating is on the side of the film toward the lamp on a projector arranged for direct projection on a reflection type screen.

NOT APPROVED

## Letter to the Editor

### Re: Flying-Spot Film Scanners

Regarding Mr. Traub's excellent paper,<sup>1</sup> the interplay between isotransport and optical compensation for film shrinkage should be further clarified for the benefit of the reader:

The kinematics of this kind of isotransport has to be compared with the problem of perforation frequency in sound film reproduction technique. The guiding of the film on the periphery of a uniformly rotating sprocket cannot secure an absolutely uniform film transport. With 35mm film, however, the continuous motion of the film is readjusted four times during each frame period by consecutive engagements and disengagements of sprocket teeth. It is entirely due to this occurrence of several very small discontinuities per frame cycle that for imaging purposes the film motion can be regarded as approximately uniform, having a speed characteristic to the degree of film shrinkage. And it is due to the validity of this approximation that optical compensation for film shrinkage is feasible with the described device.

Another remark may be permitted with regard to the light efficiency of flying-spot

film scanning, which tends to become more or less critical in the case of color film of conventional subtractive type. This is due to the relative inefficiency of flying-spot emission, in combination with photoelectric response, in the green spectral range, which color component essentially determines the image resolution in additive color reproduction on the TV receiver screen. Although this circumstance does not cause prohibitive difficulties, looking for practical alternatives should be of special interest in view of the development of video tape-recording of color motion pictures. Against this background of the present situation it should be remembered that an excellent proposal for television transmission of motion pictures in color was published 23 years ago by Herbert E. Ives.<sup>2</sup> This early proposal remains fully modern with regard to the present requirements of color film broadcasting, although in the meantime television changed from mechanical to electronic scanning. Ives referred to the old American lenticular film "Kodacolor," which had the embossed cylindrical lenses oriented along the length of the film. It is a great advantage to scan

across the lenticules, the latter facing the photo-electric tubes, because that way the three color image components will be picked up by geometrically separated beams, ending in the respective photoelectric tubes. Therefore, the film must be embossed longitudinally, not transversally. (This advantage of scanning across the lenticules would be lost with transversally lenticulated film.) Since no spectral separation is needed with Ives' proposal, the light efficiency would have the same order of magnitude as obtained with black-and-white film. Of course, the film scanner device described by Mr. Traub could be used for such purpose, provided that the three photoelectric tubes are suitably arranged.

It is strange that a seriously meant revival of the lenticular color technique in the United States came, a few years ago, with the choice of horizontal lenticulation, i.e. without taking care of possible television applications.

#### References

1. E. H. Traub, "A new 35mm television film scanner," *Jour. SMPTE*, 62: 45-54, Jan. 1954.
2. H. E. Ives, "Television in color from motion picture film," *J. Opt. Soc. Am.*, 21: p. 2, 1931.

September 14, 1954 John C. Kudar  
Rua São Francisco 93  
Curitiba, Paraná, Brazil