

Letter to the Editor

Re: A New Fastax Camera

In Mr. Waddell's recent paper¹ the following statement on optical design is to be found on page 625, top of the second column under the heading "Sprocket":

"The curvature of this sprocket face very nearly matches the change in back focus created by the oblique rays as they pass through the prism."

In reality, the sprocket design has to be related to very different conditions which are not limited to the prism alone. The cylindrical curvature of the film has to be compared with the axially symmetrical curvatures of field produced by both the lens and the prism.

Without going into mathematical details, an important aspect of optical correction in high-speed cameras can be explained by considering these curvature relationships. In rotating prism high-speed cameras the vertical aperture is generally much smaller than the horizontal aperture, so that the latter will determine the optical aberrations. The horizontal aperture repre-

sents a tangential beam along the horizontal section through the film, but it represents a sagittal beam for points along a vertical section through the film. Due to the cylindrical sprocket curvature, the optical design should balance the astigmatism of the prism and the cylindrical curvature of the film on the one side with the astigmatism of the camera lens on the other side. The following two conditions have to be fulfilled:

(A) The resultant sagittal curvature of field produced by the lens and the prism together should equal the sprocket curvature.

(B) The resultant tangential field of lens and prism together should be flat.

In the case of the Fastax cameras the above conditions may require a lens with negative Petzval curvature.

In addition to these remarks, may I refer to my proposal of a gearless high-speed camera,² in which the cylindrical curvature of the film is concave (i.e. opposite to the convex film curvature in the

Fastax cameras). This gearless feature has the particular advance, among others, that the optical correction for the concave cylindrical film curvature can be conveniently achieved in connection with a camera lens having positive Petzval curvature.

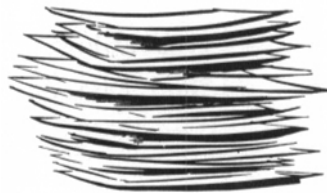
The convex sprocket curvature in Fastax cameras is an inherent drawback of the geared system, representing hardly manageable conditions from the point of view of the feasibility of optical correction.

References

1. J. H. Waddell, "Full-frame 35mm Fastax Camera," *Jour. SMPTE*, 61: 624-627, Nov. 1953; an integral part of the few closely related publications is: J. H. Waddell, "Errata," *Jour. SMPTE*, 57: 82-83, July 1951, which item was omitted in the Bibliography on High-Speed Photography, *Jour. SMPTE*, 61: 749-757, Dec. 1953.
2. John C. Kudar, "Optical problems in high-speed camera design," *Jour. SMPTE*, 58: 487-490, June 1952.

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news and



reports

Papers Program 78th Convention

The general theme of the program for the 78th Semiannual Convention at Lake Placid, October 3-7, 1955, will be "COLOR IN MOTION PICTURES AND TELEVISION." It is felt that a theme involving color is particularly appropriate and in harmony with the beauty of nature at Lake Placid in early October.

Several round table discussions are being planned to attempt to evaluate some of the trends of the industry in regard to studio and laboratory practice, projection and viewing aspects, high-speed photography applications and television practice. The round table discussions will be conducted by leaders in several fields of activity.

It is planned to have a smaller number of papers than usual on the technical papers program and an attempt will be made to select subjects of timely interest in line with the general theme. A restricted papers program will permit those attending the meeting to have more time for discussion both at the sessions and in private conferences.

The Papers Committee invites your thoughtful consideration of the plans for the Fall Meeting and welcomes your suggestions with regard to subjects for papers. Author's forms may be obtained from the Chairman or anyone of the following committee members or from Society headquarters.

- I. *Materials and Their Uses*, Glenn F. Matthews, Research Laboratories, Eastman Kodak Co., Rochester 4, N.Y.
- II. *Studio Practice*, Arthur C. Blancy, Radio Corp. of America, 1560 N. Vine St., Hollywood 28, Calif.
- III. *Laboratory Practice*, Gordon A. Chambers, Motion Picture Film Dept., Eastman Kodak Co., 343 State St., Rochester 4, N.Y.
- IV. *Projection and Viewing*, Dr. Charles R. Daily, Paramount Pictures Corp., 5451 Marathon St., Hollywood 38, Calif.
- V. *Television Practice*, T. Gentry Veal, Research Laboratories, Eastman Kodak Co., Kodak Park, Rochester 4, N.Y.

VI. *High-Speed Photography Symposium*, John H. Waddell, Fairchild Camera and Instr. Corp., 88-06 Van Wyck Expressway, Jamaica 1, N.Y.

Deadline date for titles and abstracts is August 1. It would be much appreciated, however, if authors would complete the author's form and send the copies in by July 1 as this will assist the Committee in the planning of the final program.

Papers will also be considered on non-color aspects of motion pictures and television.—*Glenn E. Matthews*, Program Chairman, 78th Convention.

The 77th Convention

The 77th was one of Chicago's greatest and a lot of kudos is due to the people who worked all week long behind the scenes to keep it rolling.

The Papers Program was under C. E. Heppberger who had great support from special subject chairmen — Dick Painter for high-speed photography, John Ditamore