

## Errata

### Decision Making in Cinecamera Design

By ROGER W. SEYMOUR LEE APRIL 1973 JOURNAL, pp. 273-278

Page 274, center column, last paragraph it is stated: "Some cameras that have been tested by the author, which do not have (registration) pins and yet which had a steadiness of better than 0.00025 in, were the Eclair NPR, . . ." Information from Eclair Corp. of America notes that this is in error. This camera *does have* a registration pin of the bench type. Two cameras from Eclair had been tested, the other being an ACL model, which has no registration pin.

Page 276, in the first column, under the subheading **Super 16**, fourth line of first paragraph, it is stated that "there are few, if any, lenses yet designed to cover this wider format." It appears, that between the time the paper was written in September 1972 and planned for presentation at the 112 SMPTE Conference and the time of publication in April 1973 this situation changed. The inference was made last year that no such lenses existed or were only in the testing stage.

At present, Eclair's information is that at least two lenses are now available for super-16 application: a Cannon 14 × 84 specifically designated for super-16, and a modified Angenieux 15 × 150.

### AN ABSTRACT

### Wide-Screen Stereoptics Without Special Glasses in a Normal Theater

By ROBERT B. COLLENDER MAY 1973 JOURNAL p. 409

The author has called to our attention several errors in the publication:

(1) The full paper can be found by the interested reader in two issues, not one as erroneously reported, of *Information Dis-*

*play*; they are: July/August 1972, pp. 18-25; and September/October, pp. 11-17.

(2) The abstract published says, in the second sentence of the second paragraph: "The frame rate per camera is the customary 24 Hz, . . ." On this the author has the following advice:

"This paper describes the system as though it causes a 24-Hz refresh rate to the eye which is only one-half the rate of standard theater projection. In standard theaters, the film frame is stationary while it is shuttered twice. This 3-D system does not allow to bring the flicker rate to 48 Hz. The odd cameras are scanned in  $\frac{1}{48}$ th second and then the even cameras at the same rate. There is no bandwidth increase. In the projection, the multi-facet reflective screen elements rotate at 6 r/s instead of 3 r/s. The description in this paper stays with the 24 Hz only because of ease of explanation in not having to think about an interlace system."

(3) The last sentence of the *Journal's* abstract reads: "The practicality of synchronizing the screen to the film offers film splicing possibilities and eliminates the need for multiple picture integration at each eye, through the agency of electronically operated shutters." Unfortunately the comma in "... eye, through . . ." should not have been there, because it changes the meaning of the sentence to just about the contrary of what was meant: that there was no need for multiple picture integration at each eye by means of the use of electronically operated shutters. The author has advised us that "The new system has nothing between the screen and projector or screen and eyes, but the 3-D data is space and time multiplexed to satisfy each person with a different but correct horizontal aspect of the original scene from his respective vantage point."

(4) The author may be addressed: Robert B. Collender, 709 Patterson Ave., Glendale, CA 91203.

JUNE 1973 JOURNAL, p. 505

### The 11th International Congress on High-Speed Photography

For: "... will be held 15-21 Sept."

Read: "... will be held 15-21 Sept. 1974."

## Engineering Committees Activities

### Sound Committee Report

The SMPTE Sound Committee met on Thursday, 12 April 1973, during the 113th SMPTE Technical Conference held at the Hyatt Regency O'Hare Hotel in Chicago. The principal items discussed were Recording and Reproducing Characteristics for 16 and 35mm Film, Sound-Record Dimension Standards, Test Films, and Motion-Picture Time Codes. Because of the interest in Time Codes, the meeting included a large number of visitors.

The advent of the crystal-controlled motor for driving motion-picture cameras has made it possible to record a time code on both the picture film and the sound tape. Since such codes record the time of day, picture and sound sync are obtained by simply matching both to a given time. Such time codes also permit automation of many of the post-production film handling operations, since any point on the film is addressable in terms of time.

An ad hoc subcommittee, chaired by Bob Leonard of Ryder Sound Services, was formed at the 112th SMPTE Technical Conference. This committee was charged with the responsibility of:

(1) Defining the present and potential need for a motion-picture time code in terms of the jobs and operations, such a code would perform throughout the entire motion-picture production process.

(2) Identifying what codes are proposed or are in use in other countries.

(3) Identifying codes in different areas being proposed in the U.S.

Mr. Leonard and the subcommittee completed their work and presented a three-part report. The first part dealt with time codes proposed or being discussed by the EBU and others.

The second part included a description of motion-picture time codes proposed by Stefan Kudelski, by Loren Ryder, and by Cinema Products.

The third part of the report, containing material furnished by Robert Hufford, included many ANSI film standards and some miscellaneous notes on the SMPTE videotape time code.

Following Mr. Leonard's presentation, the Ad Hoc Motion-Picture Time Code Committee was restructured to include manufacturers of cameras, sound recorders, editing tables, and laboratory and peripheral equipment, as well as a representative group of large and small film companies to represent the interests of the users.

The committee was charged with the responsibility of determining a standard motion-picture time code that satisfies the needs of large users who will employ automated devices, as well as small users who will not. The committee was asked to furnish a first draft for presentation at the 114th SMPTE Technical Conference to be held in New York in October 1973.

Committee Chairman Petro Vlahos reported that good progress was being made on creating a new theater test reel. The old reel (ASTR-5) is no longer being printed, and there is a continuing need for a test reel of known quality which includes samples from motion pictures. Such a test reel provides assurance to the theater operator that his equipment is functioning in a normal manner. It was announced that a print of the new test film should be available at the October Conference.

PETRO VLAHOS  
Chairman

### 16 and 8mm Committee Report

At the meeting of the committee during the 113th SMPTE Technical Conference, two major items received attention. First, the committee had balloted several proposals dealing with 8mm projector cartridges, cassettes and reels to be used with them. The balloting evoked many comments. Because of major uncer-

tainties concerning the status of the items covered by the proposed standards, the subject was tabled until the next meeting of the committee.

The second major item of concern was the recognition of the need for some degree of standardization concerning super 16. A subcommittee under the chairmanship of Eric Falkenberg of Eclair was appointed to consider the question of camera aperture images in super 16. Also, an additional larger ad hoc committee with representatives from many segments of the industry is being formed to study the implications of super 16 in a broad way, with a view to providing general guidelines which may be useful as this format develops.

The committee still has several items that are being worked on actively, principally in terms of revising existing American National Standards documents to correct errors or bring them into conformance with ISO documents:

Revision of PH22.159.1,—Super 8 Motion-Picture Film Camera Cartridge and Cartridge-Camera Fit

Revision of PH22.159.4,—Dimensions and Characteristics of the Take-Up Core Drive for Super 8 Motion-Picture Film Camera Cartridges

Revision of PH22.11,—16mm Motion-Picture Projection Reels (200-to 2,000-Ft Capacity)

Although they are not reflected in existing documents, reports dealing with the steadiness of 16mm images and footage numbering of super 8 film are in an advanced stage.

Committee ballots were closed for the following documents which were forwarded to the Standards Committee for further processing:

Revision of PH22.159.5,—Camera Run Length of Film in Super 8 Motion-Picture Film Camera Cartridges (50-Ft Capacity)

Proposed Recommended Practice for Super 8mm Sprocket Design

Proposed Recommended Practice for 8mm Safe Title and Safe Action Areas

Proposed Recommended Practice for 8mm Screen Luminance  
A revision of PH22.159.3, Super 8 Motion-Picture Film Camera Cartridge Pressure Pad Flatness and Camera Aperture Profile, and new documents concerning super 8mm Model II camera cartridges are still being balloted.

Although work on the revision and updating of the audio-visual equipment report (published in the *Journal* in 1941) has been at a virtual standstill, efforts are being made to revive this project.

GEORGE H. GORDON  
Chairman

## Color Committee Report

Although the agenda for the meeting was short, the meeting of 10 April 1973 in Chicago was well attended and a lively discussion was enjoyed on the few items. The related proposed Recommended Practices for Evaluation of Color Films for Television and for Luminance and Color Reference for Review Room Screens were approved, in principle, with further editorial changes. A corollary discussion followed on observed deviations of screen light spectral composition from the blackbody locus.

A proposal from the Television Committee to reconvene a subcommittee to investigate the need for a new Color Television Test Film was discussed, and a joint subcommittee under the chairmanship of Daan Zwick will be named.

The proposal for a general color test negative for use in evaluating preprint materials and prints has been revived by the Color Committee on request of some print house users. This proposal had been dropped in the past, but one such negative is now at the point of being field tested, as reported by Anthony Bruno and Fred Scobey.

FRED H. DETMERS  
Chairman

## Film Projection Practice Committee Report

It was agreed that a letter ballot be circulated to the Committee on a draft standard prepared by the ISO Technical Committee 36 on 35mm Projector Sprockets. This draft standard refers to FPP 3.7 (PH22.35), Dimensions for 35mm Motion Picture Projectors. It was pointed out that the ISO format is quite different from ANSI PH22 standards, but more importantly the Committee should consider the following questions:

- (1) What should the U.S. position be relative to this draft standard?
- (2) Does the technical content reflect U.S. practices?
- (3) Should the U.S. standard be expanded to include 24- and 32 tooth sprockets?

(4) Should the U.S. standard be modified? (It was stated that the 16 and 8mm Committee is currently reviewing a similar document covering the super 8 sprockets.)

The subcommittee studying projection reel spindles reported that  $\frac{1}{2}$ -in spindles provide a better support for the larger reels than do the  $\frac{5}{16}$ -in spindles. The subcommittee is considering recommending that the  $\frac{5}{16}$ -in spindle for projectors be phased out and that a draft Recommended Practice be prepared in the near future.

Discussion ensued concerning a problem that exists in theaters—that of damaged sprocket holes, allegedly due to the use of small or narrow sprocket teeth with large and small sprocket holes on film. It was reported that intact samples of film have been sent to eight members of the committee for test purposes. Half of the sample film has KS perforations and the other half has CS perforations. Instructions have been issued to splice four  $\frac{1}{2}$ -ft pieces of each of the 2-ft films into nine loops, in frame, and run the loops until complete breakdown occurs. A preliminary report from three participating members indicated that there was no breakage of film and little perforation damage after an equivalent of 520 days of running. The entire committee expressed great concern about film damage and it was stated that in general, poor equipment maintenance contributes more to film damage than any other cause. It is not believed that elimination of the narrow tooth sprocket will help the individual theaters much in resolving their film damage problem. A National Association of Theatre Owners representative quoted the following resolutions passed by NATO at their last meeting:

(1) That the theater owners take steps to put their projection equipment into optimum condition. That they replace fire rollers with film guide rollers and use emulsion in film storing rewinds.

(2) That distributors provide a complete inspection of at least four releases annually. This will enable defective equipment and careless projectionists to be pinpointed. The projectionists can then receive instructions on proper film handling techniques.

(3) That film distributors deliver only KS Perforated Film to theaters unless the exhibitor is given prior notice.

(4) That equipment manufacturers and dealers will evaluate their equipment with regard to small tooth sprockets. Furthermore, if only a large perforation film is going to be available, then the small tooth intermittent sprocket is to be replaced with a sprocket containing teeth which fit the perforation more adequately. Also, consideration be given to the lower holdback sprocket from the soundhead where take-up damage occurs on the perforation.

The Chair pointed out that if the standard governing the application of magnetic soundtracks is adhered to on KS perforated film, two of the magnetic tracks will be put down partially over the sprocket holes. In order to prevent this, the track positioning standard will have to be changed, along with the dimensions of the four-head cluster in the penthouse soundhead. One member of the committee stated for the record that if film is properly aligned and the take-up and gate tensions are light, it is possible to achieve approximately 5000 passes; however, if the equipment is not properly aligned, the film may last only for from 500 to 800 passes. But by changing the sprocket to the wider tooth, film can be run indefinitely. The Chair questioned this statement and asked that no further statements be made until the data generated by the tests now being carried out by the committee have been fully evaluated.

One of the members pointed out that the Specifications for Screen Luminance for Indoor Motion-Picture Theaters, FPP 3.22 (PH22.124), refers to all indoor theaters, and includes the 16mm format. It was stated that very few 16mm theaters can comply with this standard. The general consensus of the committee was that this standard remain standing as written. Theaters that wish to depart from it should do so only in recognizing the fact that they are departing from a well-established standard. The committee did agree that the standard should be expanded to include a section on screen brightness/screen size relationship, as well as an ambient light/screen brightness relationship.

A report on a new meter for measuring projection screen brightness was presented. This meter was described as being a small, light, portable photometer fitted with view-through optics. The purpose is to provide an instrument for the motion-picture and TV industry that will be economical, human-engineered, accurate and repeatable, and will assure excellent interinstrument agreement. After the presentation, the Chair suggested that the members of the committee interested in this new photometer submit their comments on the need for such a meter, and any suggestions

they might have for possible modifications to increase its usefulness, to the originator of the instrument, to the Chairman of the committee and to the SMPTE Staff Engineer.

A review of the Universal Leader, PH22.55, has been made, and the Chairman of the subcommittee presented briefly the study of the committee. This study indicated a lack of acceptance of this Leader, as well as conflict in the format needs for motion-picture and television uses. It was pointed out that there is a need to complete this investigation because it parallels international programs. The EBU is planning to submit its Leader to the CCIR and, if it is approved, it will become a de facto international standard and the ISO would find it difficult to change.

The Chairman of the Publicizing Committee urged the membership to consider writing articles and preparing material for publication in various trade journals. Appropriate arrangements have been made with *Boxoffice*, IATSE, *Greater Amusements* and NATO for publishing such articles. It was further stated that the SMPTE should be publicized to the exhibition branch as being the technical arm of our industry. After considerable discussion, it was decided that two types of articles should be prepared; first, technical articles for projectionists and related theater technicians, and second, articles intended for non-technical people, such as the theater manager or theater owner. It was suggested that each member assist the Chairman by forwarding his ideas to him.

Conference guidelines were discussed at some lengths, and it was pointed out that the Standards Committee had recommended that the section on the audio requirements as submitted should be augmented. A subcommittee chairman was asked to study these comments and it was requested that his committee act as a liaison committee between the Film Projection Practice Committee and the Sound Committee. Items to be included in a conference guidelines document were discussed and the Chairman of the subcommittee indicated that a report would be prepared in the very near future.

Under New Business, it was stated that a new aspect ratio of approximately 2:1 for theatrical projection had been inadvertent-

ly omitted from consideration. No record of this item is in evidence, and it will appear on the agenda for the next meeting. The Association of Motion Picture & Television Producers Research Center Bulletin No. B-084/01 relates to this subject, and the Chair asked the members of the committee to review this bulletin and to be prepared for discussion of the topic at the next meeting.

J. G. BAER  
Chairman Pro Tem  
of the April 1973 Meeting

### Video Tape Recording Committee Report

The Video Tape Recording Committee met on 23 March 1973 in Washington, D.C. and considered these items:

The proposed standard for a 2-in quadruplex cassette/cartridge spool has been approved by the VTR Committee and has gone to the SMPTE Standards Committee. A second draft of a general purpose Video Magnetic Tape Reel for Quadruplex Recorders has been circulated for vote by the committee.

A proposed revision of RP 16, Specifications of Tracking Control Record for Two-Inch Quadruplex Video Magnetic Tape Recordings, to more clearly and accurately define the frame pulse has been circulated for voting by the committee.

A third, and hopefully final, draft of the Time and Control Code proposal has been circulated for voting.

The Tape Transport Geometry Subcommittee has prepared a third draft of a proposed revision to RP 36, and a second draft of a proposed revision to RP 11.

No progress was reported in the program to standardize the cue tones on tapes used in quadruplex cassettes/cartridges.

Some ideas for possible changes to the quadruplex format to improve performance were introduced, and a subcommittee was formed for the exchange of ideas.

The next meeting of the committee is scheduled for 5 September 1973 in New York.

CHARLES E. ANDERSON  
Chairman

## standards and recommended practices

### Approved American National Standards

On 29 May 1973, the American National Standards Institute approved three new standards: PH22.146-1973, Method for Determining Speed of 16mm, 8mm and Super 8 Reversal Color Camera Films Intended for Direct Projection in Motion-Picture Photography; PH22.165-1973, Dimensions for 35mm Motion-Picture Film Perforated Super 8, 5R-1667 (1-3-5-7-0); and PH22.168-1973, Dimensions for 16mm Motion-Picture Film Perforated Super 8 (1-4).

Inasmuch as compliance with American National Standards is purely voluntary, these standards will become truly effective when broad publicity is given to their existence. ANSI and SMPTE would appreciate any personal influence to promote the use of these standards where such action is appropriate. Copies of the standards may be obtained for a nominal fee from the American National Standards Institute, 1430 Broadway, New York, NY 10018.

### Draft American National Standards

Three Draft American National Standards, which are revisions of previous issues, are published here for a trial period and public review:

PH22.73, Dimensions for 35mm Motion-Picture Film Perforated 32mm, 2R, PH22.109, Dimensions for 16mm Motion-Picture Film Perforated IR, and PH22.110, Dimensions for 16 mm Motion-Picture Film Perforated 2R, implement agreement by the Society's Film Dimensions Committee to consolidate standards that are similar in format and dimensioning. PH22.73 a revision of PH22.73-1966 and PH22.138-1964, combines the specifications applicable to 35mm film perforated 32mm, having two rows of perforations and a perforation pitch of either 0.2994 or 0.3000 inch. PH22.109 consolidates the revision of

PH22.109-1965 and PH22.12-1964, and PH22.110 consolidates the revision of PH22.110-1965 and PH22.5-1964 for the same reasons. The proposed revisions do not reflect a change in specifications.

Comments should be addressed to Alex E. Alden, Staff Engineer, at Society Headquarters prior to 1 October 1973. The proposals have been submitted to American National Standards Committee PH22. All comments received through *Journal* publication will be reviewed before conclusion of action by that Committee.

### Approved International Standards

The International Organization for Standardization (ISO) approved during March 1973 International Standard ISO 1781-1973, Cinematography: Projector Usage of 8mm Type S Motion-Picture Film for Direct Front Projection, the technical content of which is published here. The standard is in complete agreement with the comparable American National Standard, PH22.155. Copies of all International Standards are available from the American National Standards Institute, 1430 Broadway, New York, NY 10018.

ISO is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. The International Standard published here was developed by Technical Committee 36 on Cinematography. The work of this committee is administered by the Engineering Department of the SMPTE which functions as the Secretariat in ANSI's name. The report of the last meeting of the Committee was published in the October 1971 *Journal of the SMPTE*. The next meeting is scheduled for 10-17 December 1973 at Williamsburg, Va.—Alex E. Alden, *Staff Engineer*.