Ein vollelektronisches Zeitfolge-Farbfernsehsystem mit geschlossenem Stromkreis

T. Nishimura, M. Hibi, I. Mitomo und H. Etani [21]

Ein neues Farbfernsehsystem mit geschlossenem Stromkreis, das durch geringen Aufwand, einfachen Aufbau und gutes Farbwiedergabevermögen gekennzeichnet ist, wurde entwickelt. Dabei handelt es sich um ein Zeitfolgeverfahren, bei dem nur ein Vidikon und keine mechanisch rotierenden Teile benutzt werden. Drei Farbbilder werden gleichzeitig auf die Vidikon-Oberfläche projeziert. Dann tastet der Elektronenstrahl des Vidikons auf dem Vidikon-Target ab, wodurch sog. Zeitfolge-Signale erzielt werden. Zur Farbtrennung wird ein neuentwickeltes "Triaden"-Relaislinsensystem angewendet. Ferner wird ein neues Verfahren zur vertikalen Ablenkung benutzt. Das Auflösungsvermögen bei unserem Versuchsgerät betrug im Endstadium etwa 280 Linien.

Ein neuer Gesichtspunkt zur Planung von Regieräumen in Fernsehstudios

S. Glover [25]

Die übliche Regie-Anlage wird umgekehrt, so dass das Regiepersonal mit dem Rücken zu den Studiofenstern und dem Gesicht zu den, in einer Leuchtwand eingebauten, Bildmonitoren sitzt. In der Planung wurden die Standpunkte der physischen Anlage, Sitzanordnung und Beleuchtung für eine kontrollierte Arbeitsumgebung in Betracht gezogen.

Übertragungsverfahren bei den 18. Olympischen Spielen in Tokyo

Yoshio Iguchi [28]

Um die Übertragungen bei den Olympischen Spielen in Tokyo zu einem Erfolg zu machen, haben die Techniker der Japanischen Rundfunkgesellschaft, NHK, soweit wie möglich von den Anlagen des Rundfunkzentrums in Yoyogi, einem neuentwickelten Fernaufnahmeverfahren und einer grossen Anzahl von Übertragungswagen Gebrauch gemacht. Zu der Ausrüstung gehörten Farbkameras mit Lichttrennung, wendige Fernseh-Aufnahmewagen zur Verfolgung des Marathonlaufs und Fernseh-Bandaufnahmegeräte für Wiedergabe im Zeitlupentempo.

standards and recommended practices

Proposed USA Standards

Five Proposed USA Standards are published here for a trial period and public review. Comments should be addressed to Alex E. Alden, Staff Engineer, at Society Headquarters prior to February 21.

The proposals are new standards dealing with various segments of the super 8 system. They will be submitted to Sectional Committee PH22 of the USA Standards Institute. Comments received from Journal publication will be reviewed prior to conclusion of action by that committee. If no adverse criticism is received, the documents will be submitted to the Standards Institute for approval as USA Standards.—*A.E.A.*

Proposed USA Standard Location of

Printed Area in Super 8 Optical Reduction Printing on 16mm Film

PH22.153

1. Scope

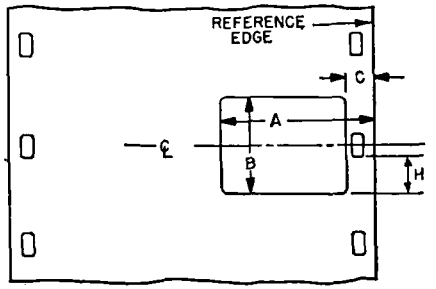
This standard specifies the location and size of the super 8 printed picture area for negative/positive and reversal optical reduction-printing operations onto 16mm motion-picture film perforated super 8, 2R-1667 or 2R-1664 (1-4).

2. Dimensions

2.1 The dimensions shall be as given in the figure and table.

2.2 Two images may be printed on this film. The image on the left side, not shown in the figure, is symmetrical to that shown. The dimensions for this image, however, are taken from the non-reference (left) edge of the film.

NOTE 1: The approximate reduction ratio of prints made from 16mm negatives or reversal originals is 1.8:1. The correct reduction ratio is controlled by Dimensions A and C.



Dimensions	Inches	Millimeters
A	0.282 min	7.16 min
B	0.166 $^{+\ 0.000}_{-\ 0.003}$	4.22 $^{+\ 0.00}_{-\ 0.08}$
C	0.058 max	1.47 max
H	0.060 ± 0.002	1.52 ± 0.05

NOTE 2: The aperture corners may be rounded with a radius of 0.005 in. (0.13mm) or less.

Appendix

(This Appendix is not a part of Proposed USA Standard Location of Printed Area in Super 8 Optical Reduction Printing on 16mm Film, PH22.153, but is included to facilitate its use.)

A1. In the use of super 8 film, the same perforation is used to position the film (minus two [—2] from the perforation adjacent to the image) at the aperture. This was intentionally developed to improve steadiness through cancellation of perforation variables. A motion-picture processing laboratory should take this factor into account in the preparation of release prints. Pertinent information is given in Proposed USA Standard Specifications for Camera Usage of Super 8 Motion-Picture Film Perforated 1R-1667, PH22.156, and Proposed USA Standard Specifications for Projector Usage of Super 8 Motion-Picture Film, PH22.155.

A2. If an optical sound record is to be included in a print, Dimension A should be limited to prevent intrusion into the sound record area.

NOT APPROVED

Proposed USA Standard Specifications for

Camera Usage of Super 8 Motion-Picture Film Perforated 1R-1667

PH22.156

1. Scope

This standard specifies the position of the emulsion, the rate of exposure, and the orientation of the area being exposed for super 8 motion-picture film perforated 1R-1667.

2. Position of Film for Exposure

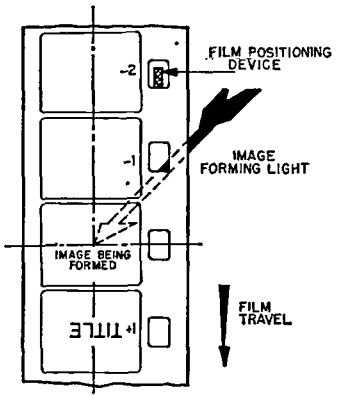
2.1 Except for special processes, the emulsion shall be toward the camera lens.

2.2 The perforation used for the film-positioning device should be two perforations above the perforation adjacent to the image being formed when a positioning device is at the bottom of its stroke (the –2 position). This location coincides with the vertical positioning device location required for the projected image and thereby improves steadiness through cancellation.

2.3 The dimensions of the camera aperture image relative to the film-positioning perforation shall be as specified in Proposed USA Standard Dimensions of Camera Aperture Image on Super 8 Motion-Picture Film, PH22.157.

3. Rate of Exposure

The usual rate of exposure shall be 18 frames per second for silent film and 24 frames per second for sound film.



Film as seen from inside camera looking toward lens.

Appendix

(This Appendix is not a part of Proposed USA Standard Specifications for Camera Usage of Super 8 Motion-Picture Film Perforated 1R-1667, PH22.156, but is included to facilitate its use.)

A1. The usual rate of 18 frames per second for silent film specified in Section 3 conforms to the projection rate of 18 frames per second specified in Proposed USA Standard Specifications for Projector Usage of Super 8 Motion-Picture Film, PH22.155.

A2. The sound speed recommendation of 24 frames per second (Section 3) is primarily intended for professional application of super 8 sound motion-picture photography. It is expected that the nonprofessional, in using single-system sound or in using post-processed magnetically striped film, will record his sound at 18 frames per second, as limited by the speed of his original photography or his desire to conserve film stock.

NOT APPROVED

Proposed USA Standard Dimensions of

Maximum Projectable Film Image Area on Super 8 Motion-Picture Film

PH22.154

1. Scope

This standard specifies the dimensions of the maximum film image area intended for projection from a super 8 motion-picture film, and the placement of this area relative to the perforations and the reference edge of the film.

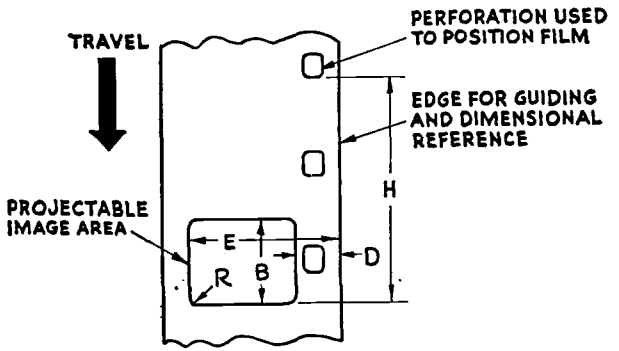
2. Dimensions

2.1 The dimensions shall be as given in the figure and table.

2.2 The angle of the vertical edges of the image area shall be 0° ± ½° to the reference edge of the film.

2.3 The angle between the horizontal edges of the image area and the reference edge of the film shall be 90° ± ½°.

2.4 Dimension H is measured lengthwise along the path of the film from the bottom of the maximum image area projected by the aperture to the bottom of the frame positioning perforation (two perforations above the perforation adjacent to the projected image).



Projectable area on film as seen from inside the projector looking toward the lens.

Dimensions	Inches		Millimeters	
B	0.158	max	4.01	max
D	0.063	min	1.60	min
E	0.278	max	7.06	max
H	0.389	nom	9.88	nom
R	0.010	max	0.25	max

NOT APPROVED

Notes

1. The dimensions of the image area placed on the film conforming to this standard may be obtained from Proposed USA Standards Dimensions of Camera Aperture Image on Super 8 Motion-Picture Film, PH22.157; Location of Printed Area in Super 8 Optical Reduction Printing on 16mm Film, PH22.153, and other proposed standards for super 8 printing systems.

2. The film used is perforated in accordance with Proposed USA Standard Dimensions for 8mm Motion-Picture Film, Perforated Super 8, 1R-1667, PH22.149.

3. Dimensions B, E, and R define the maximum image area on the film that can be considered reliably available for projection. They do not define the opening in the aperture plate of a super 8 projector. This opening will usually be smaller than the area to be projected when, as is typical, the projector aperture plate lies between the film and the projector lamp. This size difference exists because of the physical separation necessary between the aperture plate and the film (to avoid scratching the film) and the slant of the marginal rays passing to the lens. The area of the actual picture image on the film produced by the camera or printer will usually be larger than the maximum area required for projection.

Appendix

(This Appendix is not a part of Proposed USA Standard Dimensions of Maximum Projectable Film Image Area on Super 8 Motion-Picture Film, PH22.154, but is included to facilitate its use.)

It is proposed that the claw pull-down be located at the –2 perforation with respect to the projected aperture. The reason for selecting the –2 perforation for positioning is to locate the positioning perforation as close as possible to the image being projected without interfering with the optical system and gate structure. Locating the positioning perforation above the aperture may facilitate the design of self-threading projectors. Also, placing the claw above the aperture will make it easier to design a magnetic sound system which incorporates the relatively close sound separation of plus 18 frames for magnetic sound.

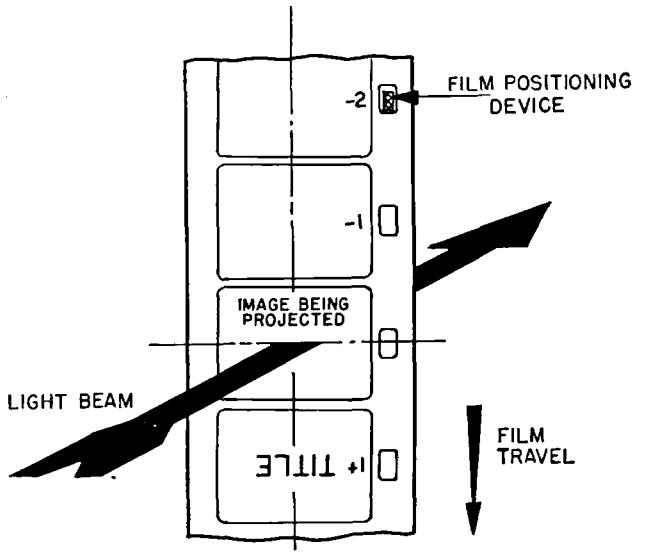
Proposed USA Standard Specifications for

Projector Usage of Super 8 Motion-Picture Film

PH22.155

1. Scope

This standard specifies the rate of projection and the orientation of the image area for super 8 film as used in a super 8 projector.



Film as seen from the light source in the projector.

2. Position of Film for Projection

2.1 Most 8mm films are projected with the emulsion toward the projection lens. There are, however, several processes producing prints in which the base side faces the projection lens.

2.2 The perforation used for the film-positioning device shall be two perforations above the perforation adjacent to the projected aperture when the positioning device is at the bottom of its stroke (the –2 position). This location coincides with the vertical positioning device location required for super 8 camera original films and thereby improves steadiness through cancellation.

2.3 The dimensions of the projectable image area relative to the film-positioning perforation shall be as specified in Proposed USA Standard Dimensions of Maximum Projectable Film Image Area on Super 8 Motion-Picture Film, PH22.154. It is customary to provide a framing movement of approximately 0.015 in. (0.38mm) above and below this position.

3. Rate of Projection

The usual rate of projection shall be 18 frames per second for silent use and 24 frames per second for sound use. In silent projectors having a fixed rate of projection, the rate shall be 18 frames per second with a tolerance appropriate for the intended use. Silent projectors having manually-adjustable speed shall be capable of reaching a projection rate of at least 18 frames per second.

Appendix

(This Appendix is not a part of Proposed USA Standard Specifications for Projector Usage of Super 8 Motion-Picture Film, PH22.155, but is included to facilitate its use.)

A.1 Because of the increased intensity of illumination available in modern 8mm projection systems, the industry has found it desirable to extend the flicker threshold by choosing as high a projection rate (and, therefore, as high a flicker frequency) as practicable. A projection rate of 18 frames per second and a corresponding flicker frequency of 54 Hz (obtained with a three-blade shutter) has been found by experience to be an acceptable compromise.

A2. The sound speed recommendation of 24 frames per second (Section 3) is primarily intended for professional application of super 8 sound motion-picture photography. It is expected that the nonprofessional, in using single-system sound or in using post-processed magnetically striped film, will record his sound at 18 frames per second, as limited by the speed of his original photography or his desire to conserve film stock.

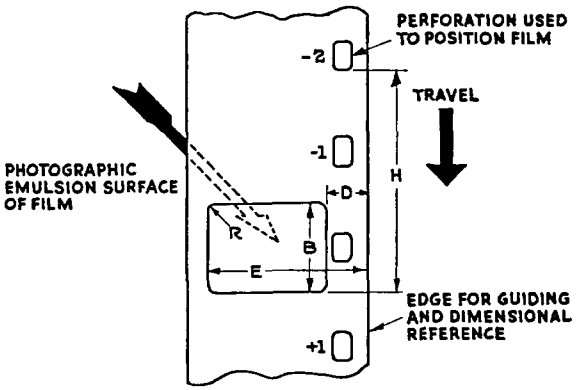
Proposed USA Standard Dimensions of

Camera Aperture Image on Super 8 Motion-Picture Film

PH22.157

1. Scope

This standard specifies the dimensions of the image area produced by the camera aperture on super 8 motion-picture film. It also specifies the position of the image relative to the reference edge of the film and the perforation used to position the film.



Film as seen from inside camera looking toward lens.

Dimensions	Inches	Millimeters
A	0.245 nom	1.14 nom
B	0.166 $^{+\ 0.000}_{-\ 0.003}$	4.22 $^{+\ 0.00}_{-\ 0.08}$
C	0.170 ± 0.002	4.32 ± 0.05
D	0.037 min 0.058 max	0.94 min 1.47 max
E	0.282 min	7.16 min
H	0.393 ± 0.005	9.98 ± 0.13
R	0.005 max	0.13 max

NOT APPROVED

2. Dimensions

2.1 The dimensions shall be as given in the figure and table and shall apply to measurements of the image as formed on freshly exposed and processed film.

2.2 The angle between the horizontal edges of the image and the reference edge shall be 90° ± ½°.

2.3 Dimension H is the distance from the bottom edge of the picture frame to the bottom of the perforation which is two pitches above the perforation adjacent to that picture frame.

Appendix

(This Appendix is not a part of Proposed USA Standard Dimensions of Camera Aperture Image on Super 8 Motion-Picture Film, PH22.157, but is included to facilitate its use.)

A1. If the aperture plate is not in the plane of the emulsion, the physical dimensions of the aperture in the camera will be slightly different from the dimensions given in the figure. The exact amount of this difference will depend upon the f/ value and focal length of the camera lenses used and upon the distance between the emulsion and the physical aperture. This separation should be no greater than is necessary to prevent scratching of the film.

A2. It is the intent of this standard to provide a camera image such that the exposed area will always be larger than the area of the projector aperture. Observance of the dimensions given in the standard meets this objective without causing double exposure of the area between the frames.