121st SMPTE Technical Conference and Equipment Exhibit

21–26 October 1979, Century Plaza Hotel, Los Angeles, California

SMPTE/Our International Society will be the theme of the papers program at the 121st SMPTE Technical Conference. **John Lakotas**, Eastman Kodak Co., Program Chairman, has announced that this theme will be carried throughout the papers sessions. **Lakotas** has also reported a number of additions to his program committee, as well as several changes in topics. A complete listing of all topics and chairmen follows.

Consumer Video Technology
Richard Stumpf
Universal City Studios
100 Universal City Plaza
Universal City, CA 91608

TV Post Production
Richard R. Green
American Broadcasting Co.
4151 Prospect Ave.
Hollywood, CA 90027

Rex Bagwell
National Broadcasting Co.
3000 W. Alameda Ave.
Burbank, CA 91505

TV Sound Technology
Joe Kelly
Glen Glenn Sound
6624 Romaine St.
Hollywood, CA 90038

Ed Greene
4014 Cresthaven Drive
Westlake Village, CA 91361

Microprocessor Systems Control
Don McCroskey
American Broadcasting Co.
4151 Prospect Ave.
Hollywood, CA 90027

Television Production
Lee Pardee
Metromedia Inc.
5746 W. Sunset Blvd.
Los Angeles, CA 90028

Laboratory Practices
Sidney P. Solow
Consolidated Film Industries
959 N. Seward St.
Hollywood, CA 90038

Ecology and Effluent Management
John L. Baptista
Technicolor, Inc.
4050 Lankershim Blvd.
No. Hollywood, CA 91608

New Equipment and Processes
Michael V. Chewey
MGM Laboratories Inc.
10202 W. Washington Blvd.
Culver City, CA 90230

Scientific/Industrial Film and Video Systems
Lincoln L. Endelman
Aerospace Systems
c/o Perkin-Elmer
411 Clyde Ave.
Mountain View, CA 94040

Motion Picture Sound Technology
Robert G. Hufford
Eastman Kodak Co.
6706 Santa Monica Blvd.
Hollywood, CA 90038

International Image Distribution
Robert Ringer
Image Transform Inc.
4142 Lankershim Blvd.
No. Hollywood, CA 91608

Production and Special Effects
Howard A. Anderson, Jr.
Howard A. Anderson Co.
5451 Marathon St.
Los Angeles, CA 90038

International Liaison
Julian D. Hopkinson
Agfa-Gevaert, Inc.
1801 Century Park E, Suite 110
Los Angeles, CA 90067

Co-Chairman for Television
Gustavo Dato
ABC Television Center
4151 Prospect Ave.
Hollywood, CA 90027

Co-Chairman for Motion Pictures
Howard T. LaZare
Consolidated Film Industries
959 Seward St.
Hollywood, CA 90038

For additional program information, please contact the Papers Program Chairman, **John C. Lakotas**, Eastman Kodak Co., 6706 Santa Monica Blvd., Hollywood, CA 90038, or any of the above.

Prospective authors wishing to present papers on one of the topics within the SMPTE's scope, should obtain the appropriate author forms from the Conference Programs Secretary: **Lynne Robinson**, SMPTE Headquarters, 862 Scarsdale Ave., Scarsdale, NY 10583, (914) 472-6606.

Forms and synopses are due at Headquarters by 1 June and manuscripts by 15 August 1979.

Standards & Recommended Practices

Proposed American National Standards

Proposed revisions of two American National Standards are published here for a trial period and public review: PH22.159.2, Dimensions and Characteristics of 8-mm Type S (Super 8) Motion-Picture Camera Cartridge Aperture, Camera Aperture Profile, Film Position, Pressure Pad and Pressure Pad Flatness; and PH22.179, Location of 8-mm Type S (Super 8) Printed Areas on 35-mm Motion-Picture Film.

Comments should be addressed to Alex E. Alden, Manager of Engineering Services, at Society Headquarters before 1 July 1979. The proposals have been submitted to American National Standards Committee PH22. All comments received through *Journal* publication will be reviewed prior to conclusion of action by that committee.

Reaffirmed SMPTE Recommended Practices

The Executive Committee for Standards Approval, acting on behalf of the Board of Governors, approved reaffirmation of two SMPTE Recommended Practices on 10 January 1979: RP 48-1973, Lubrication of 16- and 8-mm Motion-Picture Prints; and RP 49-1973, Leaders for Preprint Material Used in the Manufacture of 8-mm Prints Intended Solely for 8-mm Type R (Regular 8) or S (Super 8) Cassettes and Cartridges for Nontelevision Use.

SMPTE Recommended Practices are available from Society Headquarters for $1.50 each. — Alex E. Alden, *Manager of Engineering Services*

Proposed American National Standard

Dimensions and Characteristics of 8-mm Type S (Super-8) Motion-Picture Camera Cartridge Aperture, Camera Aperture Profile, Film Position, Pressure Pad and Pressure Pad Flatness

PH22.159.2

Revision and Consolidation of PH22.159.2-1968 and PH22.159.3-1975

1. Scope

This standard specifies the dimensions and location of the cartridge aperture, pressure pad, and characteristics essential to the appropriate flatness of the cartridge pressure pad. Also specified are the position of the 8-mm Type S motion-picture film and its required clearances in the cartridge aperture.

2. Dimensions

2.1 The dimensions shown in Fig. 2 and Table 2 shall apply to an assembled cartridge with a film load at the time of manufacture. The dimensions shown in Figs. 1 and 3 and Tables 1 and 3 shall apply to a cartridge that is fully assembled, but does not contain film.

2.2 The datum planes and datum features used for dimensioning shall be as defined in Secs. 2.3, 2.3.1, 2.4, 2.4.1, and 2.4.2 of Proposed American National Standard Specifications for 8-mm Type S (Super 8) Model I Motion-Picture Film Camera Cartridge, Cartridge-Camera Interface and Take-Up Core Drive, PH22.159.1 (Revision and Consolidation of PH22.159.1-1968 and PH22.159.4-1968).

2.3 Dimensions T and U denote the lateral location of the film in the cartridge before insertion in the camera. After insertion, Dimension T becomes 0.060 in (1.52 mm) minimum and Dimension U becomes 0.050 in (1.27 mm) minimum.

2.4 All dimensions in Table 1, except Dimensions A and C, apply at the front surface of the pressure pad. A draft of 5 degrees to the recess area shall be permitted as well as an inside or outside radius of 0.005 in (0.13 mm) at all corners to provide satisfactory mold release.

2.5 Dimension A denotes the maximum penetration, from Datum Plane C, of the camera film alignment guide wings or the camera claw into the recessed area of the cartridge pressure pad.

2.6 Dimension B is measured from Datum Plane C and is the operating position of the cartridge pressure pad.

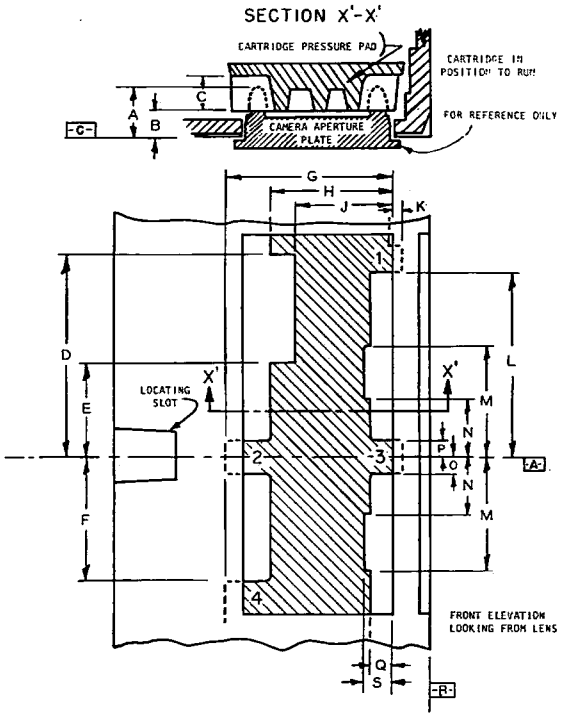


Fig. 1
Cartridge Pressure Pad

Table 1

Dimensions	Inches	Millimeters
A	0.150 max	3.81 max
B	0.077 ± 0.005	1.96 ± 0.13
C	0.090 min	2.29 min
D	0.540 min	13.72 min
E	0.260 max	6.60 max
F	0.360 ± 0.020	9.14 ± 0.51
G	0.455 min	11.56 min
H	0.365 max	9.27 max
J	0.300 max	7.62 max
K	0.000 min	0.00 min
L	0.540 ± 0.020	13.72 ± 0.51
M	0.300 min	7.62 min
N	0.140 max	3.56 max
O	0.058 ± 0.022	1.47 ± 0.56
P	0.038 ± 0.022	0.97 ± 0.56
Q	0.055 min	1.40 min
S	0.090 min	2.29 min

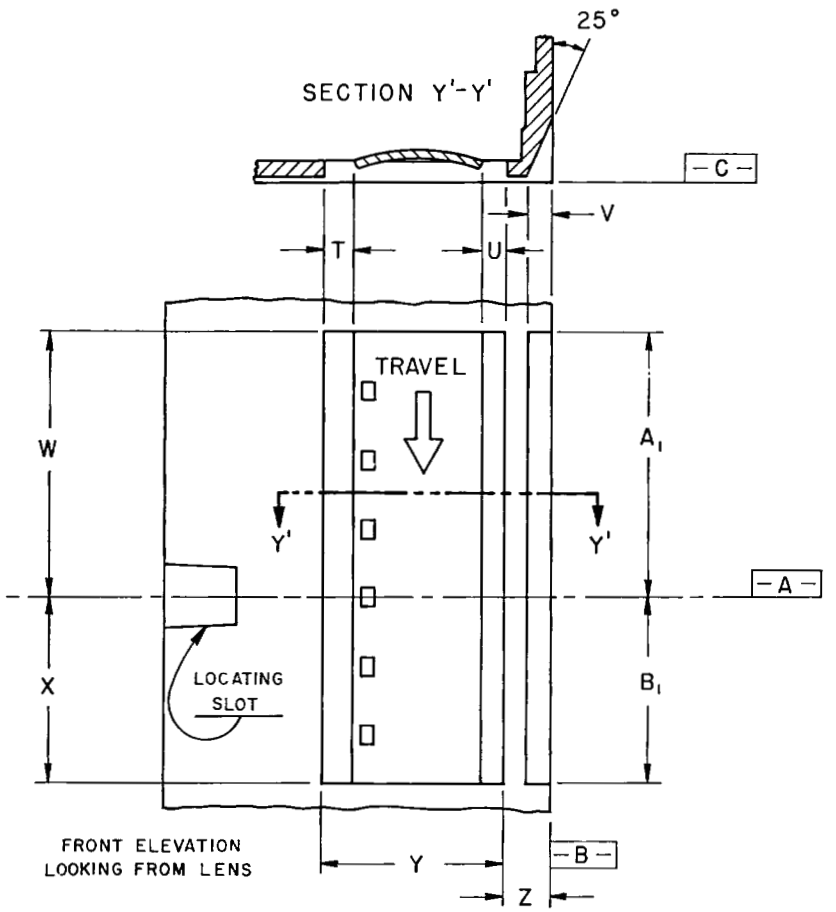


Fig. 2
Cartridge Aperture Opening and Film Position

Table 2

Dimensions	Inches	Millimeters
T	0.050 min	1.27 min
U	0.040 min	1.02 min
V	0.061 ± 0.006	1.55 ± 0.15
W	0.648 ± 0.006	16.46 ± 0.15
X	0.451 ± 0.006	11.46 ± 0.15
Y	0.451 ± 0.004	11.46 ± 0.10
Z	0.111 ± 0.003	2.82 ± 0.08
A_1	0.642 min	16.31 min
B_1	0.445 min	11.30 min

PH22.159.2

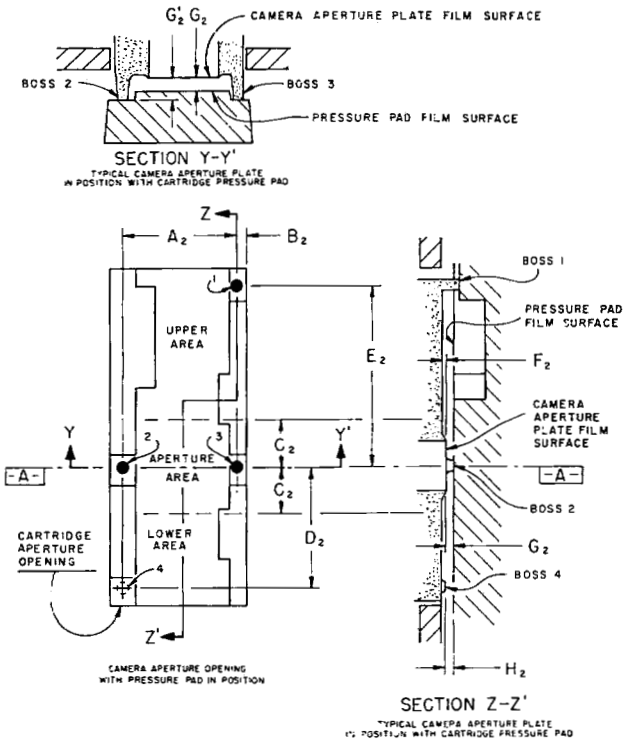


Fig. 3
Pressure Pad Flatness Reference Surfaces

Table 3

Dimensions*	Inches	Millimeters
A_2	0.378 ± 0.001	9.60 ± 0.03
B_2	0.030 + 0.002 — 0.000	0.76 + 0.05 — 0.00
C_2	0.153 nom	3.89 nom
D_2	0.393 ± 0.001	9.98 ± 0.03
E_2	0.590 ± 0.001	14.99 ± 0.03
F_2	0.005 min	0.13 min
G_2	T_2 + 0.0007 min T_2 + 0.0012 max	T_2 + 0.018 min T_2 + 0.030 max
G'_2	0.0065 min 0.0070 max	0.165 min 0.178 max
H_2	0.004 min	0.10 min

*Dimensions are measured from the zero plane defined by Surfaces 1, 2, and 3. (See Sec. 2.7, Fig. 3, and Note 2.)

PH22.159.2

Table 4
Flatness Tolerances on Pressure Pad Film Surface

Areas*	Inches	Millimeters
Aperture Area	+ 0.0058 — T_2	+ 0.147 — T_2
(within dimension C_2)	+ 0.0048 — T_2	+ 0.122 — T_2
Upper Area	+ 0.0078 — T_2	+ 0.198 — T_2
	+ 0.0038 — T_2	+ 0.097 — T_2
Lower Area	+ 0.0078 — T_2	+ 0.198 — T_2
	+ 0.0018 — T_2	+ 0.046 — T_2

*Dimensions are measured from the zero plane defined by Surfaces 1, 2, and 3. (See Sec. 2.7, Fig. 3, and Note 2.)

2.7 Dimensions relative to the surface of the pressure pad are measured from a plane established through Surfaces 1, 2, and 3, as defined by 0.060-in (1.52-mm) diameter circles dimensionally centered. (See Fig. 3.) The actual camera aperture bosses may deviate from this shape.

2.8 Dimension G_2 specifies the clearance for film in the camera aperture area based on T_2, the thickness of the film in the center of the picture area. (See Note 1.)

2.9 Dimension G'_2 specifies the extension of the camera aperture plate boss points (corresponding to 1, 2, and 3) beyond the aperture plate plane at the aperture opening.

2.10 The upper and lower pad areas extend from Dimension C_2 to the top and bottom of the cartridge pressure pad within the area described by Dimension H minus Dimension Q.

2.11 Dimension H_2 is intended to apply from a plane as described by Sec. 2.7.

2.12 The plus values given for the pressure pad film surface flatness tolerances shall be directed toward the lens. (See Note 2.)

2.13 Surface 4 of the cartridge pressure pad and Boss 4 of the camera aperture are delineated to aid in seating the cartridge pressure pad to the camera aperture plate. They serve no function when the pressure pad is in operating position. (See Note 3.)

NOTE 1: It is considered good practice to relieve the camera aperture plate above and below the picture area to allow a clearance for film transport and minimize the possibility of film pinching. Dimension F_2 specifies the amount of recess for this purpose.

NOTE 2: It is intended that the film surface of the cartridge pressure pad be flat, or molded as a flat plane. Pits or depressions, however, which do not interfere with the film flatness are acceptable. Tolerances for the flatness on the 8-mm Type S cartridge pressure pad film surface are specified to account for slight warpage in molding if the pressure pad is made from a plastic material. (See Appendix A3.)

NOTE 3: Three lugs, Nos. 1, 2, and 3, on the pressure pad are intended to touch the camera aperture plate and thereby establish both the film plane alignment and the clearance allowed for film thickness. Lug 4 should not touch the camera aperture plate.

NOTE 4: In addition to this standard, there are available the following American National Standards relating to 8-mm Type S film camera cartridges:

Specifications for 8-mm Type S (Super 8) Model 1 Motion-Picture Film Camera Cartridge, Cartridge-Camera Interface and Take-Up Core Drive, PH22.159.1

Specifications for Camera Run Length, Perforation Cut-Out and End-of-Run Notches in 8-mm Type S (Super 8) Motion-Picture Film Model 1 Camera Cartridges (50-Ft, 15-m Capacity), PH22.159.5-1974

Specifications for 8-mm Type S (Super 8) Motion-Picture Film Camera Cartridge Notches for Exposure Control and Stock Identification, PH22.166-1977

Appendix

(The Appendix is not a part of this American National Standard, but is included for information purposes only.)

A1. A force of 8 to 14 oz (2.2 to 3.9 N) must be exerted on the pressure pad for proper seating against the camera aperture plate.

A2. The two cut-out areas in the pressure pad permit the use of fingers for side-guiding. A force of 1.5 to 2.5 oz (0.42 to 0.70 N) per finger is adequate to ensure picture steadiness if proper take-up torque is applied to the cartridge.

A3. Although sufficient recess from the front surface of the pressure pad to allow for camera claw and camera aperture guide finger penetration, as defined by Dimension C and Sec. 2.5, must be provided, additional portions of the pad surface may be recessed also.

A4. The cartridge pressure pad recess, defined by Dimensions D, E, and J, is available for camera claw film transport engagement. The perforation used for the film vertical registration at its stopping position is specified in American National Standard Specifications for Camera Usage of 8-mm Type S (Super 8) Motion-Picture Film, PH22.156-1976, as minus 2 from the perforation adjacent to the image formed by the camera aperture. The horizontal centerline of the camera aperture should nominally coincide with Datum Plane A.

A5. To provide a consistent method of measurement, it is recommended that a cartridge gauging fixture be used which incorporates datum surfaces, a locating pin, and means for exerting locating forces on appropriate surfaces of the cartridge. For pressure pad measurements, a second fixture, incorporating three 0.060-in (1.52-mm) diameter bosses and a means for exerting the appropriate pressure pad seating force, is recommended.

Proposed American National Standard

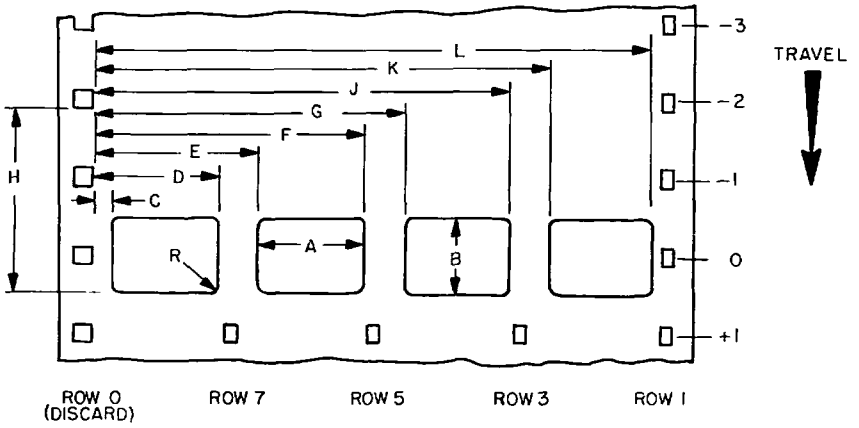
Location of 8-mm Type S (Super 8) Printed Areas on 35-mm Motion-Picture Film

PH22.179

Revision and Consolidation of PH22.179-1973 and PH22.180-1973

1. Scope

This standard specifies the location and size of the 8-mm Type S (super 8) printed picture area for negative and intermediate optical reduction printing on 35-mm motion-picture film perforated 2R-1664 in positions 1 and 0 and for print films derived by optical or contact printing on 35-mm film perforated 5R-1667 in positions 1, 3, 5, 7, and 0.



Dimensions	Inches		Millimeters	
A	0.228	ref	5.79	ref
B	0.162	min	4.11	min
C	0.047	max	1.19	max
D	0.271	min	6.88	min
E	0.361	max	9.17	max
F	0.585	min	14.86	min
G	0.675	max	17.14	max
H*	0.393 ±	0.002	9.98 ±	0.05
J	0.899	min	22.83	min
K	0.989	max	25.12	max
L	1.213	min	30.81	min
R	0.005	max	0.13	max

* See Note 2 and Appendix A1.

2. Dimensions

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

2.2 Dimensions A, B, and H apply to all images. The differences in values from the reference perforation, Dimensions C through L, establish the minimum area to be printed. For convenience, and to avoid unnecessary addition and subtraction in applying this standard, a reference dimension has been supplied for a typical width of the image area.

NOTE 1: To provide understanding in the design and use of printers, the dimensions specified in the figure and table provide an ideally centered intended image with a reference dimension of 0.311 in (7.90 mm) from the positioning perforation.

NOTE 2: The "travel" shown in the figure is to aid in illustrating the —2 perforation used to position the 8-mm print, and the direction of motion in the projector for the resulting 8-mm print if the figure is as seen from the light source in a projector used for direct front projection (See Appendix A1).

NOTE 3: If photographic sound will be applied to the print, it is necessary to restrict the value for Dimensions C, E, G, and K to avoid intrusion into the sound track area. A suggested value of 0.0015 in (0.038 mm) less than the maximum value may be used until the values are established.

Appendix

(The Appendix is not a part of this American National Standard, but is included for information purposes only.)

A1. If prints are made with a step printer, the registration device should be in the —2 perforation, or that perforation which corresponds to the —2 perforation when the final print stage is reached, to obtain maximum benefit of cancellation as films are projected in accordance with American National Standard Specifications for Projector Usage of 8-mm Type S (Super 8) Motion-Picture Film, PH22.155-1976, which specifies the —2 position for projected films.

A2. The position numbers appearing in the scope of this standard specify how the rows of perforations are placed on the film. This designation is necessary only when the film stock is wider than its end use and more than one combination of perforation rows is possible. The perforation rows are numbered starting at the reference edge, which is the edge nearest to that row of perforations which is retained in the slitting operation. The row of perforations which is discarded is given the number 0. Negative or intermediate films which are not slit may contain a 0-numbered row of perforations if that perforated row corresponds to the discard row of perforations on the subsequent print stock.