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## standards and recommended practices

### Proposed Withdrawal of American Standard

The Film Projection Practice and Standards Committees have proposed the withdrawal of American Standard Screen Brightness for 35mm Motion-Pictures, PH22.39-1953 (published in the May 1953 *Journal*).

If no objections are received, ASA Sectional Committee PH22 will be requested to approve termination of this inaccurate and outdated document on the basis that American Standard Screen Luminance for Indoor Theaters, PH22.124-1962, covers the same information and is more inclusive.—*A.E.A.*

### Proposed American Standards and Recommended Practice

Three Proposed American Standards and a Recommended Practice are published here for a trial period and public approval. Comments should be addressed to Alex E. Alden, Staff Engineer, at Society Headquarters prior to July 1. If no adverse criticism is received by that date, the proposed standards will be submitted to ASA Sectional Committee PH22 or C98 for further processing. The Proposed Recommended Practice, on the other hand, will be submitted directly to the SMPTE Board of Governors for final approval.

Two proposals are being processed as revisions of 1955 issues: Specifications for Camera Usage of 16mm Motion-Picture Film, Perforated 1R-2994, PH22.15, and Specifications for Projector Usage of 16mm Motion-Picture Film, Perforated 1R-3000, PH22.16. However, it should be noted that the proposals are, in fact, reaffirmations of the earlier versions differing only in editorial content to ensure clarity with additional information reflecting the current usage of magnetic sound.

Proposed American Standard Dimensions of 2-In. Video Magnetic Tape Reels, C98.5, is one of the Video-Tape Recording Standards that will be handled by the new ASA Sectional Committee C98. The proposal has had quite a lengthy history but the initial specifications have been retained. The proposal is in close agreement with EIA (Electrical Industries Association) Standard RS-254, Precision Reel for Instrumentation Use, that was issued in December 1961 and approved by the NAB (National Association of Broadcasters).

Prior to formation of the C98 Committee, the proposal, designated as PH22.116, was published in the November 1959 *Journal*. It was also identified for a short time by its committee file number, VTR 16.1.

Proposed SMPTE Recommended Practice Safe Action Area for TV Transmission, RP 13, is a companion document to RP

8, Recommended Practice on Safe Title Area for TV Transmission, which was approved by the SMPTE in May 1961 and published in the July 1961 *Journal*. Upon completion of a thorough study of electrical circuits and present-day television practices, the Society's Television Committee concluded that there are two possible safe areas for the presentation of material over a television system. Due to the many variables in a television circuit, such as voltage regulation, peculiarities of picture adjustment, ageing of component parts, etc., various degrees of masking result in loss of picture information.

The more restricted area, called the Safe Title Area, within which essential information should be placed to ensure visibility on a majority of home receivers is recommended in RP 8. RP 13 specifies a larger area within which all significant action, not as important as titles, call letters and sponsor identification, should take place.

In the past, many organizations have issued similar but slightly different proposals. In suggesting the areas covered by RP 8 and RP 13, it is not intended to dictate specific measurements but to guide cameramen and film-producing organizations in composing pictorial information and to provide an indication of the possible size of the areas that the average, properly-adjusted home receiver may be expected to show.—A.E.A.

## PROPOSED SMPTE RECOMMENDED PRACTICE RP 13

# Safe Action Area for TV Transmission

### 1. Scope

- 1.1 Existing standards define the camera aperture, projector aperture and scanned area for each of the media commonly used as sources of photographic material for television transmission.
- 1.2 This recommended practice suggests a specific area within which all significant action should take place, with the intent of insuring visibility of the action on a properly adjusted home receiver.

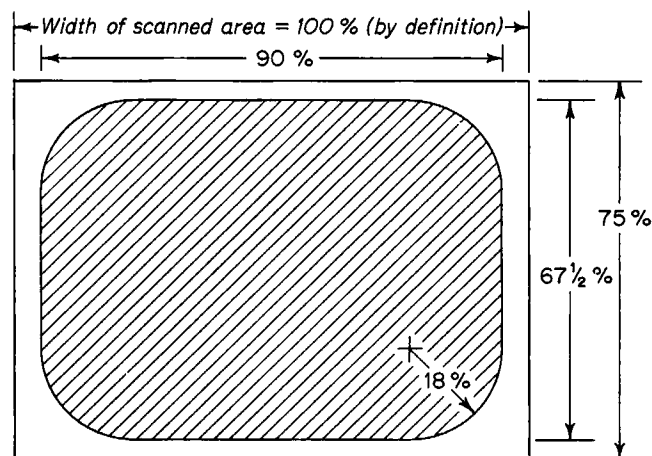
### 2. Recommended Practice

- 2.1 For any form of motion picture or slide material, significant action should be kept within the shaded portion of the drawing.
- 2.2 The dimensions are stated in terms of the nominal scanned area transmitted by the television system. 100% is, by definition, equal to the width of the scanned area and 75% is then the height of the scanned area.
- 2.3 For operating convenience, it is suggested the outline of the shaded area be indicated in all camera viewfinders.
- 2.4 Review room projectors used for production evaluation should be equipped with special apertures having the dimensions of the safe action area.
- 2.5 Projectors used for print inspection should have apertures at least as large as the scanned area. The dimensions of the safe action area should be indicated at the projection screen.

Note: The safe action area should not be confused with either the safe title area or the scanned area.

### 3. Reference Standards

- 3.1 The dimensions of the various scanned areas will be found in the following American Standards:



Television Picture Area — 16 mm Motion-Picture Film, PH22.96-1954

Television Picture Area — 35 mm Motion-Picture Film, PH22.95-1954

Slides and Opaques for Television Film Camera Chains, PH22.94-1954

- 3.2 The current values in the reference standards result in the following dimensions:

	Scanned Width (100%)	Dimensions of Safe Action Area		
		Width (90%)	Height (67 1/2%)	Radius (18%)
16 mm Film	0.368 in.	0.331 in.	0.248 in.	0.066 in.
35 mm Film	0.792 in.	0.713 in.	0.535 in.	0.143 in.
2" x 2" Slide	1.125 in.	1.013 in.	0.759 in.	0.203 in.

Proposed American Standard Specifications for  
**Camera Usage of 16mm Motion-Picture  
 Film, Perforated IR-2994**

PH22.15  
 Revision of  
 PH22.15-1955

**1. Scope**

This standard specifies the position of the emulsion, the rate of exposure and the relationship between sound and picture of 16mm motion-picture film, perforated one edge.

**2. Position of Emulsion**

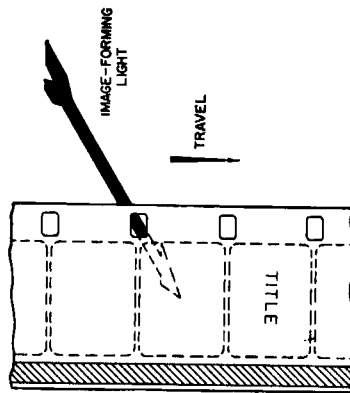
Except for special processes, the emulsion shall be toward the camera lens.

**3. Rate of Exposure**

The rate of exposure shall be 24 frames per second for both photographic and magnetic sound.

**4. Relationship Between Sound and Picture**

The apparatus and film shall be so arranged that the sound is placed on the film ahead



Film as Seen From Inside the Camera Looking Toward the Camera Lens

of the horizontal centerline through the corresponding picture by 26 frames  $\pm$  1/2 frame for photographic recording or 28 frames  $\pm$  1/2 frame for magnetic recording. Thus a given point on the film shall pass the sound head after it has passed the picture aperture.

NOT APPROVED

Proposed American Standard Specifications for  
**Projector Usage of 16mm Motion-Picture  
 Film, Perforated IR-3000**

PH22.16  
 Revision of  
 PH22.16-1955

**1. Scope**

This standard specifies the position of the emulsion, the rate of projection and the relationship between sound and picture of 16mm motion-picture film, perforated one edge.

**2. Position of Emulsion**

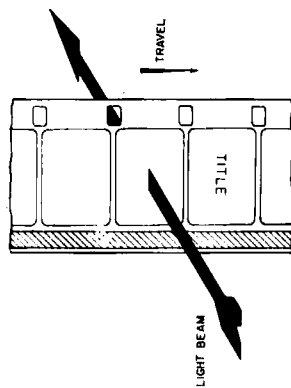
With reversal original film, the emulsion shall be toward the projection lens. This is the preferred orientation. With some prints or special processes, it may not be possible to use this orientation.

**3. Rate of Projection**

The rate of projection shall be 24 frames per second for both photographic and magnetic sound.

**4. Relationship Between Sound and Picture**

When the sound record is reproduced, the distance from the center of the projector



Film as Seen From the Light Source in the Projector

aperture to the sound scanning point should be adjusted to bring picture and sound into synchronism for the average observer. For very short speaker-to-audience distance, this separation will be 26 frames in the case of photographic sound or 28 frames for magnetic sound. This distance should be shortened by one frame for each 50 feet of distance from loudspeaker to audience.

NOT APPROVED

Proposed American Standard Dimensions of  
2-In. Video Magnetic Tape Reels

C98.5

Page 1 of 2 pages

1. Scope

This standard specifies the dimensions of reels in maximum capacities of 750, 1650, 3600, 5540, and 7230 ft designed to accommodate the maximum thickness of 2-in. wide magnetic tape for television recording, as speci-

fied in Proposed American Standard Dimensions of 2-In. Video Magnetic Tape, C98.1.

2. Reel Dimensions

2.1 The dimensions of the reels shall be as specified in the figure and tables.

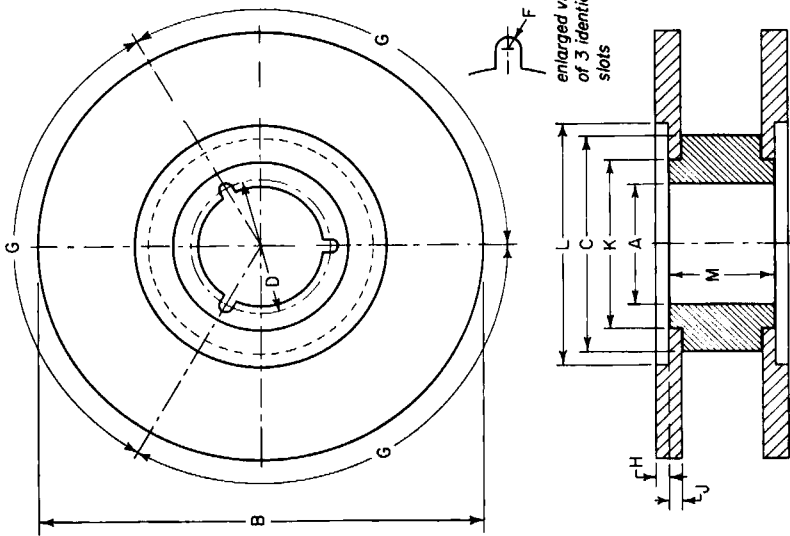


Table 1. Reel Dimensions.

Dimensions	Inches	Millimeters	Degrees
A	3.000 ± 0.004	76.20 ± 0.10	
B	See Table 2	See Table 2	
C	4.500 ± 0.100	114.30 ± 2.54	
D	3.250 ± 0.002	82.55 ± 0.05	
F	0.109 ± 0.003	2.77 ± 0.08	
G	— 0.000	— 0.00	
H	0.025 max†	0.64 max†	120 ± 0.1
J	0.099 max†	2.51 max†	
K	3.600 min‡	91.44 min‡	
L	6.000 min‡	152.40 min‡	
M*	2.212 ± 0.003	56.18 ± 0.08	

\* The hub surfaces defined by M shall be parallel within 0.0002 in. (0.005mm) per inch and square with the hub outside diameter C within 0.001 in. (0.025mm) at maximum diameter.

† The surface of the flanges from B to L shall lie between the planes defined by H and J.

‡ Outside surfaces of reel flanges between diameters K and L shall not extend beyond the surfaces defined by Dimension M.

Table 2. Reel Capacities.

Maximum Capacity, Feet	Meters	Maximum Playing Time in Min at Per Second		Dimensions	
		7.5 In. (19.05 Cm)	15 In. (38.1 Cm)	Inches	Millimeters
750	228	20	10	B	6.50 ± 0.010 165.1 ± 0.25
1650	503	44	22	B	8.00 ± 0.010 203.2 ± 0.25
3600	1097	96	48	B	10.50 ± 0.010 266.7 ± 0.25
5540	1689	148	74	B	12.50 ± 0.010 317.5 ± 0.25
7230	2203	192	96	B	14.00 ± 0.010 355.6 ± 0.25

\* Maximum capacity is based on a minimum distance of 0.2 in. (5mm) from the reel periphery to the tape stack, utilizing maximum thickness tape.

Appendix

This Appendix is not a part of Proposed American Standard Dimensions of 2-In. Video Magnetic Tape Reels, C98.5, but is included to facilitate its use.

The outside diameters of the flanges, B, will give reels the capacities suggested in Table 2. These capacities should be regarded as maximum.

It is recommended that both flanges have air escape holes. If provided, these holes should extend to the hub periphery and be of such size at this point as to facilitate easy threading.

NOT APPROVED

C98.5—NOT APPROVED

2.2 Flange-fastening members shall be flush or below the outer surface of the flanges.

2.3 The outside cylindrical surface of the hub (C diameter) shall be concentric with the center bore (A diameter) within 0.002 in. (0.5mm).

2.4 The outside diameter of the flanges (B diameter) shall be concentric to the center bore of the hub (A diameter) within 0.02 in. (0.5mm).