of the future has hardly penetrated the fog of corporate apathy. However, it is just possible that until now a well-integrated plan for international standardization has not been presented for consideration by industry and government. Are the goals suggested earlier valid and does the brain of the primitive U.S. standards complex comprehend its real environment? Can an inspiring plan come from those who should father it? Any plan should assume that:

1. USASI must be able to place one of its own staff as Secretary of each technical committee for which the U.S. holds the Secretariat, which means that the USNC needs at least two more engineers immediately.

2. The USNC must be able to operate on a businesslike basis with regard to long-range planning, which means broadening the base of financial and technical support in industry. Every company that benefits from exports and imports must be convinced of the value of funding its own future prosperity.

3. Each technical committee must be staffed with qualified U.S. delegates so that continuity of participation can be maintained over at least five-year periods since it sometimes takes three years to develop a good delegate.

4. The United States must offer to take over more Chairmanships and Secretariats as they become available. The U.S. National Committee often loses these opportunities because it cannot be sure that industry will support its efforts.

The final plan will be a bold one that assumes the probable, embraces the possible, and reaches for the impossible. It will be predicated on solid data furnished by all those who will benefit from its operation. It will invite the participation of those professionals who can still experience a sense of excitement when they realize its potential for economic good. Perhaps best of all, such a plan will, for the first time, appear lucid enough to motivate the support of the business community. After all, history is on its side. The industry of the United States has never rejected an opportunity for economic growth. American management will support innovative international standardization because it can be proved that this, like research and development, is a profit-generating center and that the payoff is not only evident on the corporate financial report but in more and better paying jobs at home, in more effective foreign aid to those nations that can use it, and in a more peaceful and prosperous world.[5] . . .

References

1. W. A. McAdams, "Worldwide electrical standardization — a status report," presented at 1956 IEEE International Convention, p. 1.
3. "The problem of data collection to support the thesis of trade loss from the barrier of international standards," U.S. Dept. of Commerce memorandum, Jan. 28, 1966.
4. "Trade by commodities statistical bulletins," Organization for Economic Cooperation and Development, Paris, France, series C, Jan.–June 1964, pp. 507–531.
5. A. C. Grove, "Management payoffs from international standardization," presented at 1966 IEEE International Convention.

standards and recommended practices

Proposed USA Standards

Three 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 before December 20. These proposals are currently under review by USASI Sectional Committee PH22; consequently, all comments received through this publication will be resolved by that Committee prior to further processing.

Each of these documents gives the proposed USA standard dimensions of maximum projectable film image area on motion-picture film. PH22.8, which covers 16mm film, and PH22.20, dealing with 8mm film, are substantially reaffirmations of earlier issues, modified editorially to facilitate their use. PH-22.152 is a new standard proposing the dimensions of this area on 70mm film. —*A.E.A.*

Proposed USA Standard Dimensions of

Maximum Projectable Film Image Area on 16mm Motion-Picture Film

PH22.8

Revision of
PH22.8-1957

1. Scope

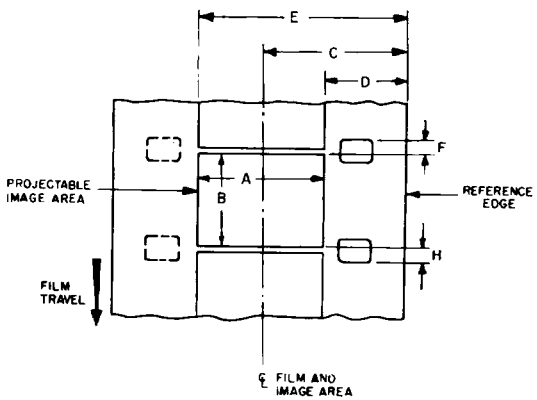
1.1 This standard specifies the dimensions of the maximum film image area intended for projection from a 16mm motion-picture film, and the placement of this area relative to the perforations and the reference edge of the film.

1.2 The standard also specifies that the film image area defined is the minimum area to be provided during the printing or preparation of prints for projection.

2. Dimensions

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

2.2 The nominal image area and its centerlines are given for convenience in interpreting the standard and in facilitating such applications as the optical design of equipment.



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

Dimensions	Inches	Millimeters
A	0.382 nom	9.70 nom
B	0.286 max	7.26 max
C	0.314 ± 0.002	7.98 ± 0.05
D	0.122 min	3.10 min
E	0.508 max	12.90 max
F = H	± 0.002	± 0.05

NOT APPROVED

3. Application

3.1 It is recognized that, in many cases, the actual film image area projected may not be a perfect rectangle, but may be an irregular four-sided figure and may be bounded by straight or curved lines. These departures result from the screen surface being at an angle other than 90° from the projection axis, or being nonplanar, or both.

3.2 For aesthetic purposes, it is sometimes preferable to have the corners of the projected film area rounded rather than angular.

3.3 When the film image area projected is not rectangular, it is intended that the actual projected film image area be the largest appropriately shaped area that can be inscribed within the specified dimensions.

Notes

1. Dimensions and locations are shown relative to unshrunk raw stock. For films in current use, the shrinkage has been found to be sufficiently low so that the dimensions shown in this standard are normally used without correction for film shrinkage.

2. Film intended for projection with this image area is normally perforated as specified in USA Standard Dimensions for 16mm Motion-Picture Film, 2R-3000, PH22.5-1964, and USA Standard Dimensions for 16mm Motion-Picture Film, 1R-3000, PH22.12-1964.

3. Prints conforming to this standard are prepared as specified in USA Standard Specifications for Projector Usage of 16mm Motion-Picture Film Perforated Two Edges, PH22.10-1964, and USA Standard Specifications for Projector Usage of 16mm Motion-Picture Film Perforated One Edge, PH22.16-1965.

4. The centerline shown in this standard is the same as that given in USA Standard Dimensions of 16mm Motion-Picture Camera Aperture Image, PH22.7-1964.

Appendix

(This Appendix is not a part of Proposed USA Standard Dimensions of Maximum Projectable Film Image Area on 16mm Motion-Picture Film, PH22.8, but is included to facilitate its use.)

A1. Terminology

The dimensions specified in this standard have previously been defined in standards titled "projection aperture." The change in terminology has been made to show clearly that the primary reference is to the film rather than to the equipment, and that the dimensions are those of the image area on the film rather than those of a component of the projection apparatus.

A2. Projector Aperture

Dimensions B, D, and E define the maximum image area on the film that can be considered available for projection. They do not define the opening in the aperture plate of a projector. The size of this opening may differ from Dimensions A and B, for example, because of the physical separation necessary between the aperture plate and the film to avoid scratching the film, the slant of the marginal rays accepted by the projection lens, etc.

A3. Camera and Printer Apertures

Normally the actual picture image on the film is significantly larger than the maximum area intended for projection so that the tolerance in placement of the images throughout the sequence of films is not restrictive of commercial practice. Upper limits for the size of the picture image are imposed by good practice in avoiding frame overlap, encroachment into areas reserved for optical sound tracks, flare from perforation edges, etc. Dependent standards that describe camera apertures, printer apertures, reduction ratios, etc., are consistent with these objectives.

Proposed USA Standard Dimensions of

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

PH22.20

Revision of
PH22.20-1957

1. Scope

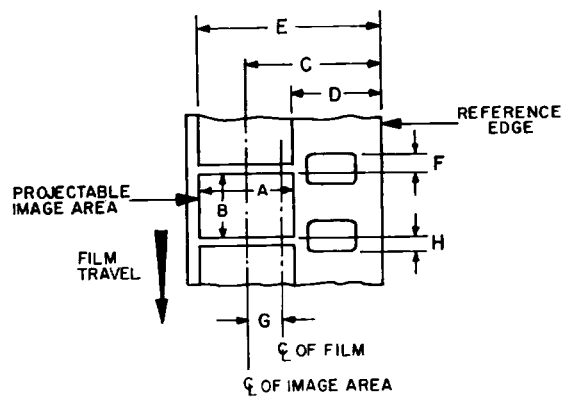
1.1 This standard specifies the dimensions of the maximum film image area intended for projection from an 8mm motion-picture film, and the placement of this area relative to the perforations and the reference edge of the film.

1.2 The standard also specifies that the film image area defined is the minimum area to be provided during the printing or preparation of prints for projection.

2. Dimensions

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

2.2 The nominal image area and its centerlines are given for convenience in interpreting the standard and in facilitating such applications as the optical design of equipment.



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

Dimensions	Inches	Millimeters
A	0.173 nom	4.39 nom
B	0.130 max	3.30 max
C	0.205 ± 0.002	5.21 ± 0.05
D	0.117 min	2.97 min
E	0.294 max	7.47 max
F = H	± 0.002	± 0.05
G	0.109 nom	2.77 nom

3. Application

3.1 It is recognized that, in many cases, the actual film image area projected may not be a perfect rectangle, but may be an irregular four-sided figure and may be bounded by straight or curved lines. These departures result from the screen surface being at an angle other than 90° from the projection axis, or being nonplanar, or both.

3.2 For aesthetic purposes, it is sometimes preferable to have the corners of the projected film area rounded rather than angular.

3.3 When the film image area projected is not rectangular, it is intended that the actual projected film image area be the largest appropriately shaped area that can be inscribed within the specified dimensions.

Notes

1. Dimensions and locations are shown relative to unshrunk raw stock. For films in current use, the shrinkage has been found to be sufficiently low so that the dimensions shown in this standard are normally used without correction for film shrinkage.

2. Film intended for projection with this image area is normally perforated as specified in USA Standard Dimensions for 16mm Motion-Picture Film, Perforated 8mm, 2R-1500, PH22.17-1965.

3. Prints conforming to this standard are prepared as specified in USA Standard Specifications for Projector Usage of 8mm Motion-Picture Film Perforated One Edge, PH22.22-1964.

4. The centerline shown in this standard is the same as that given in USA Standard Dimensions of 8mm Motion-Picture Camera Aperture Image, PH22.19-1964.

Appendix

(This Appendix is not a part of Proposed USA Standard Dimensions of Maximum Projectable Film Image Area on 8mm Motion-Picture Film, PH22.20, but is included to facilitate its use.)

A1. Terminology

The dimensions specified in this standard have previously been defined in standards titled "projection aperture." The change in terminology has been made to show clearly that the primary reference is to the film rather than to the equipment, and that the dimensions are those of the image area on the film rather than those of a component of the projection apparatus.

A2. Projector Aperture

Dimensions B, D, and E define the maximum image area on the film that can be considered available for projection. They do not define the opening in the aperture plate of a projector. The size of this opening may differ from Dimensions A and B, for example, because of the physical separation necessary between the aperture plate and the film to avoid scratching the film, the slant of the marginal rays accepted by the projection lens, etc.

A3. Camera and Printer Apertures

Normally the actual picture image on the film is significantly larger than the maximum area intended for projection so that the tolerance in placement of the images throughout the sequence of films is not restrictive of commercial practice. Upper limits for the size of the picture image are imposed by good practice in avoiding frame overlap, encroachment into areas reserved for optical sound tracks, flare from perforation edges, etc. Dependent standards that describe camera apertures, printer apertures, reduction ratios, etc., are consistent with these objectives.

Proposed USA Standard Dimensions of

Maximum Projectable Film Image Area on 70mm Motion-Picture Film

PH22.152

1. Scope

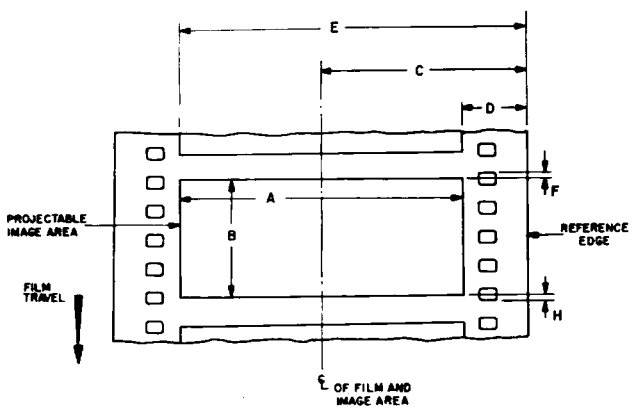
1.1 This standard specifies the dimensions of the maximum film image area intended for projection from a 70mm motion-picture film, and the placement of this area relative to the perforations and the reference edge of the film.

1.2 The standard also specifies that the film image area defined is the minimum area to be provided during the printing or preparation of prints for projection.

2. Dimensions

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

2.2 The nominal image area and its centerlines are given for convenience in interpreting the standard and in facilitating such applications as the optical design of equipment.



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

Dimensions	Inches		Millimeters	
A	1.913	nom	48.59	nom
B	0.870	max	22.10	max
C	1.377	± 0.002	34.98	± 0.05
D	0.421	min	10.69	min
E	2.331	max	59.21	max
F = H		± 0.002		± 0.05

NOT APPROVED

3. Application

3.1 It is recognized that, in many cases, the actual film image area projected may not be a perfect rectangle, but may be an irregular four-sided figure and may be bounded by straight or curved lines. These departures result from the screen surface being at an angle other than 90° from the projection axis, or being nonplanar, or both.

3.2 For aesthetic purposes, it is sometimes preferable to have the corners of the projected film area rounded rather than angular.

3.3 When the film image area projected is not rectangular, it is intended that the actual projected film image area be the largest appropriately shaped area that can be inscribed within the specified dimensions.

Notes

1. Dimensions and locations are shown relative to unshrunk raw stock. For films in current use, the shrinkage has been found to be sufficiently low so that the dimensions shown in this standard are normally used without correction for film shrinkage.

2. Film intended for projection with this image area is normally perforated as specified in USA Standard Dimensions for 70mm Motion-Picture Film, Perforated 65mm, KS-1870, PH22.119-1961.

Appendix

(This Appendix is not a part of Proposed USA Standard Dimensions of Maximum Projectable Film Image Area on 70mm Motion-Picture Film, PH22.152, but is included to facilitate its use.)

A1. Terminology

The dimensions specified in this standard have previously been defined in standards titled "projection aperture." The change in terminology has been made to show clearly that the primary reference is to the film rather than to the equipment, and that the dimensions are those of the image area on the film rather than those of a component of the projection apparatus.

A2. Projector Aperture

Dimensions B, D, and E define the maximum image area on the film that can be considered available for projection. They do not define the opening in the aperture plate of a projector. The size of this opening may differ from Dimensions A and B, for example, because of the physical separation necessary between the aperture plate and the film to avoid scratching the film, the slant of the marginal rays accepted by the projection lens, etc.

A3. Camera and Printer Apertures

Normally the actual picture image on the film is significantly larger than the maximum area intended for projection so that the tolerance in placement of the images throughout the sequence of films is not restrictive of commercial practice. Upper limits for the size of the picture image are imposed by good practice in avoiding frame overlap, encroachment into areas reserved for optical sound tracks, flare from perforation edges, etc. Dependent standards that describe camera apertures, printer apertures, reduction ratios, etc., are consistent with these objectives.