REPORT OF STANDARDS AND NOMENCLATURE COMMITTEE

A VERY careful review of all of the standardization work done by the Society up to Jan. 1, 1928, has been made. The dimensional standards officially adopted by the Society prior to this date have been summarized, and together with the officially approved recommended practice, have been presented to the American Engineering Standards Committee for incorporation in the body of their recognized standards. In presenting this material to the American Engineering Standards Committee, all dimensional standards relating to film, sprocket dimensions, *etc.*, were shown, in so far as possible, in the form of dimensioned charts. These were printed in the form required by the Committee and the requisite number of copies submitted to that organization. On April 9 we were informed that all of the proposed dimensional standards, together with the recommended practice, had received the official approval of the American Engineering Standards Committee. This material has been printed in the form of a booklet, and is now ready for distribution.

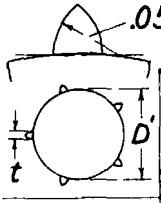
The current work of the Committee has dealt largely with two general classes of work: (a) Standardization of practice in the 16 mm. field; (b) the standardization of practice in the field of sound reproduction.

In accordance with the practice adopted in presenting our dimensional standards to the American Engineering Standards Committee, the dimensional standards which the Committee wishes to place before the Society for consideration at this time are shown in the form of dimensioned graphic charts. This method seems to be very much more satisfactory than an attempt to incorporate dimensional standards in the body of the report without drawings indicating their significance.

In Chart No. 8 are shown the proposed standard dimensions for 16 mm. feed sprockets. It will be noted in the table, which is an integral part of Chart No. 8, that dimensions are shown for sprockets of 5, 6, 7, and 8 teeth, and also the dimensions which should be used in each case when 2, 3, and 4 teeth are to be in contact with the film.

16 M/M FILM
STANDARDIZED SPROCKET SIZES

FEED SPROCKETS



No. Sprocket Teeth	Number Of Teeth In Contact With Film. 2 D' Inches	2 t Inches	2 Range 0 To Max. Shrinkage	3 D' Inches	3 t Inches	3 Range 0 To Max. Shrinkage	4 D' Inches	4 t Inches	4 Range 0 To Max. Shrinkage
5	.4714	.039 / .040	0 / 1.54%	.4714	.034 / .035	0 / 1.57%			
6	.5669	.039 / .040	0 / 1.54%	.5669	.034 / .035	0 / 1.57%	.5669	.030 / .031	0 / 1.52%
7	.6624	.039 / .040	0 / 1.54%	.6624	.034 / .035	0 / 1.57%	.6624	.030 / .031	0 / 1.52%
8	.7579	.039 / .040	0 / 1.54%	.7579	.034 / .035	0 / 1.57%	.7579	.030 / .031	0 / 1.52%

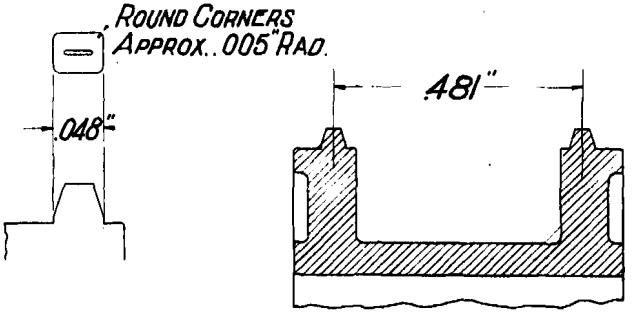
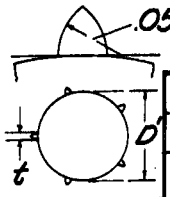


CHART 8. Proposed standard dimensions for 16 mm. feed sprockets.

In Chart No. 9 similar dimensions are given for the take-up (hold-back) sprocket for 16 mm. film.

16 M/M FILM
STANDARDIZED SPROCKET SIZES

TAKE UP (HOLD BACK) SPROCKETS



NO. SPROCKET TEETH	NUMBER OF TEETH IN CONTACT WITH FILM								
	2			3			4		
	D' INCHES	t INCHES	RANGE SHRINKAGE	D' INCHES	t INCHES	RANGE SHRINKAGE	D' INCHES	t INCHES	RANGE SHRINKAGE
5	.4643	.037 .038	0 1.50%	.4643	.031 .032	0 1.50%			
6	.5584	.037 .038	0 1.50%	.5584	.031 .032	0 1.50%	.5584	.030 .031	0 1.50%
7	.6524	.037 .038	0 1.50%	.6524	.031 .032	0 1.50%	.6524	.030 .031	0 1.50%
8	.7464	.037 .038	0 1.50%	.7464	.031 .032	0 1.50%	.7464	.030 .031	0 1.50%

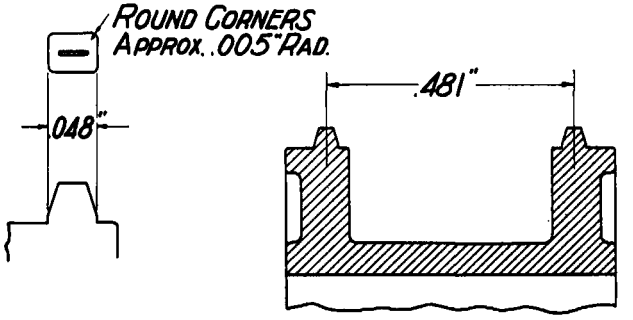
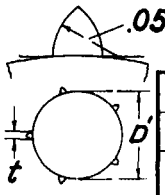


CHART 9. Proposed standard dimensions for 16 mm. take up (hold back) sprockets

In Chart No. 10 are given the dimensions which should be used when a single sprocket is to be employed as a combination feed and take-up (hold-back) sprocket. It is common practice, in the design and construction of 16 mm. equipment, to use a single sprocket which serves both as a feed and take-up sprocket. Under these conditions the dimensions as shown in Chart No. 10 should be used.

16 M/M FILM
STANDARDIZED SPROCKET SIZES

COMBINATION SPROCKETS



No. Sprocket Teeth	Number of Teeth in Contact with Film. 2 D' Inches	2 t Inches	2 Range Shrinkage	3 D' Inches	3 t Inches	3 Range Shrinkage	4 D' Inches	4 t Inches	4 Range Shrinkage
5	.4691	.042 / .043	0 / 1.53%	.4691	.039 / .040	0 / 1.52%			
6	.5641	.042 / .043	0 / 1.53%	.5641	.039 / .040	0 / 1.52%	.5641	.036 / .037	0 / 1.52%
7	.6591	.042 / .043	0 / 1.53%	.6591	.039 / .040	0 / 1.52%	.6591	.036 / .037	0 / 1.52%
8	.7541	.042 / .043	0 / 1.53%	.7541	.039 / .040	0 / 1.52%	.7541	.036 / .037	0 / 1.52%

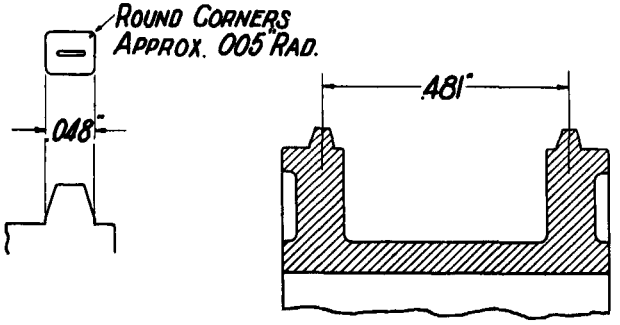


CHART 10. Proposed dimensions for single sprocket to be used as a combination feed and take-up (hold-back) sprocket.

In Chart No. 11 are given the proposed dimensions pertaining to camera and projector apertures. It is desirable that the film track in a camera should be slightly wider than the film for which it is designed. It is proposed that a value of 0.005 inch be adopted as standard clearance in the design of 16 mm. cameras. The di-

mension already adopted (see chart No. 4, in booklet of adopted standards) as standard cutting size for 16 mm. film is 0.62992 inch, with a tolerance of 0.00197 inch. The adoption of 0.005 inch as

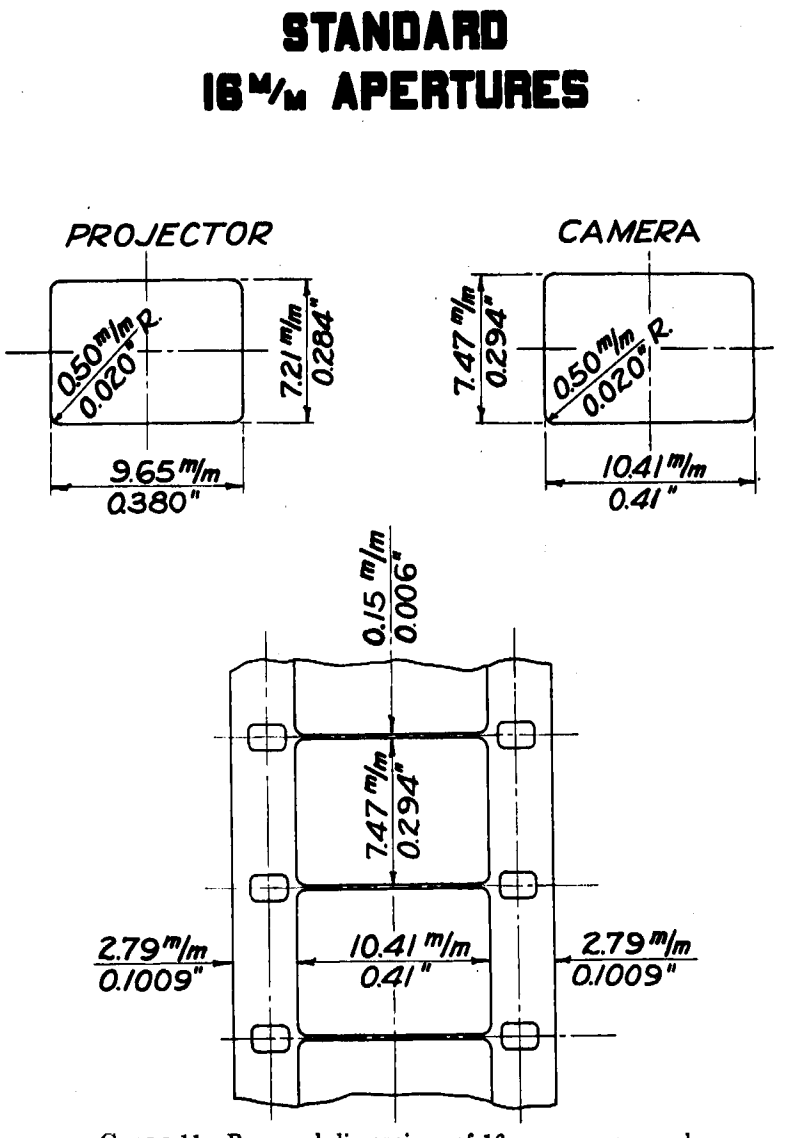


CHART 11. Proposed dimensions of 16 mm. camera and projector apertures.

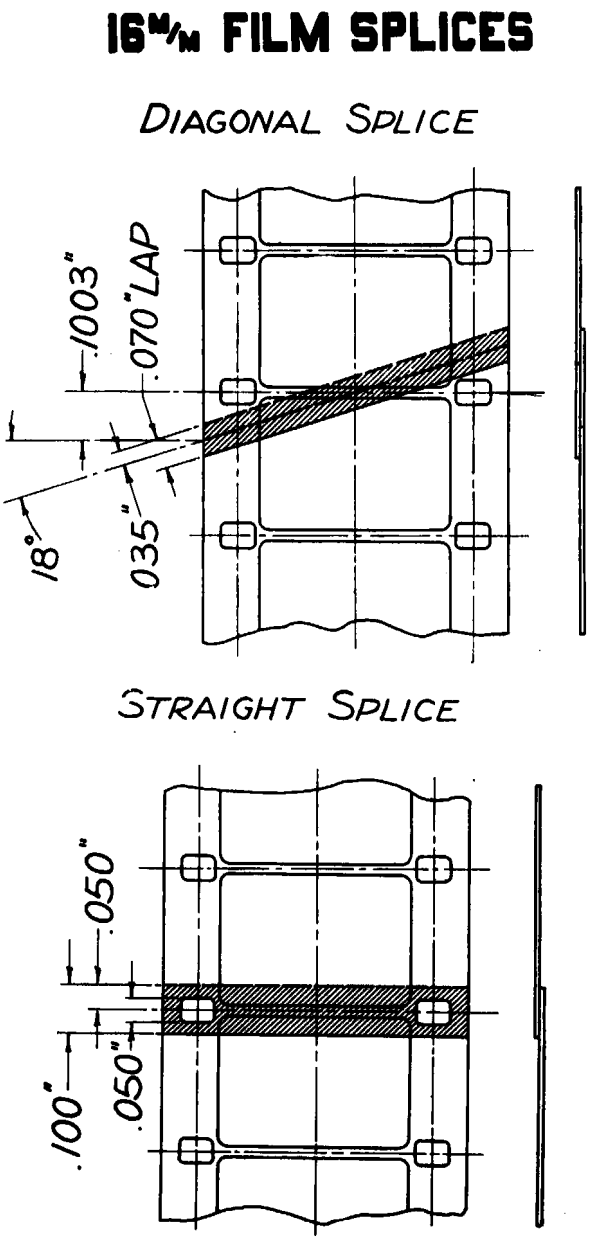


CHART 12. Dimensions of proposed 16 mm. splices.

standard clearance, therefore, gives a value for width of the film track of 0.63142 inch.

In considering the question of 16 mm. splice dimensions, the Committee has found that at the present time two forms of splice are in use; one of these is a straight splice, and the other of diagonal form. The dimensions of these two forms of splice which are at the present time in use, are shown in Chart No. 12. It is probable that both types of splice will be used extensively for some time. It is the opinion of the majority of the Committee that the Society should recognize both forms as standard. It is recommended, therefore, that the dimensions shown in Chart No. 12 be adopted as standard for the 16 mm. splices.

The Committee is not, at the present time, in a position to propose any definite dimensional standards pertaining to practice in the field of sound reproduction by photographic methods. This matter has been discussed at great length by the Committee as a whole, and work is at present under way which will probably lead to the proposal of dimensional standards at the next meeting of the Society. Various organizations working in this field have submitted blue prints showing their present practice. These blue prints could be published with this report, but the Chairman of the Committee feels that it is rather undesirable to do this, especially since it is probable that agreement will be reached in the near future, and that at the next meeting we will be able to present definite proposals for dimensional standards in this field. Some of the items for which it seems desirable to establish dimensional standards as soon as possible are: Width of sound track, position of sound track on the positive film, size of picture area, taking speed and projection speed, position of reproducing slit relative to projector aperture, *etc.*

The question of viewing angle in motion picture theaters has again been brought to the attention of the Committee. Recommended practice has already been proposed relative to *projection angle.* It has been recommended that the projection angle should not exceed 12°. No recommendations, however, have ever been made by this Society as to the limiting viewing angle in the horizontal plane which may be tolerated as good practice. Distortion produced by an excessive viewing angle in the horizontal plane is probably as serious as excessive distortion due to an excessive projection angle. It seems highly desirable, therefore, that

we should make some recommendation of maximum viewing angle which may be considered as good practice. The Committee feels that the entire question of viewing and projecting angles should be considered as a single problem, and during the next half year an attempt will be made to draw definite proposals for presentation at the next meeting.

Respectfully submitted
L. A. JONES, *Chairman*

H. GRIFFIN	D. MACKENZIE	J. H. MCNABB
E. I. SPONABLE	L. T. ROBINSON	R. S. BURNAP
	R. J. POMEROY	

DISCUSSION

PRESIDENT COOK: It is necessary for us to have a quorum (25 active members) in order to take action on the adoption of any dimensional standards. I have requested that all active members come into this session, so that we may act on this report. I think it would be highly desirable for us to make the initial approval of the Committee's recommendations. While we usually have a good deal of discussion on the question of standards, it is not necessary at the time of initial approval, since ample opportunity will be given for further discussion before the final adoption of the standard at a subsequent meeting. I would suggest that the charts be again shown separately; then we can act on all of them at one time.

MR. JONES: I will show the charts again rapidly, so that you will know exactly what standards are being proposed. The standards which we are presenting to you for initial approval today are shown in charts Nos. 8, 9, 10, 11, and 12; and in addition, in cameras designed to use 16 mm. film (See chart No. 4) width of film track = 0.63142 inch.

MR. CUFFE: May I ask why you have the combination sprocket?

MR. JONES: This sprocket is used in case the same sprocket must serve as a feed and take-up sprocket.

MR. CUFFE: On the standard machines they cut an upper or a lower and use an intermediate sprocket.

DR. MEES: On the amateur machines most of them use combination sprockets, that is only one type.

MR. ROSS: The variation for two teeth is 1.54; for three, 1.57; and for four it drops to 1.52. Why is there a rise and then a fall?

MR. JONES: It is a result of dropping out the figures which are not significant.

(*Motion made and duly seconded giving the initial approval to the standards proposed.*)