

REPORT OF STANDARDS AND NOMENCLATURE COMMITTEE

May, 1929

TWO meetings of the committee as a whole have been held since the semi-annual meeting of the Society at Lake Placid. The first of these was held on February 20, 1929, in New York. Those present were: Messrs. Sponable, Spence, Sease, Rayton, MacKenzie, Dreyer, Chanier, Burnap, Brown, and Jones, Chairman. This meeting may be regarded as an organization meeting at which the entire field of the committee's activities was discussed in a general way and an attempt was made to outline the work which it seemed desirable that the committee should undertake. The extent of the field requiring the attention of this committee has become so broad it is practically impossible for one individual to successfully initiate and follow up all the work that should be done. Moreover, the personnel of the Standards Committee at present is very large. It is difficult to get all of the members together frequently and it was felt that small committees of only two or three members each could, in the initial stages at least, deal more efficiently with various problems. The following subdivisions of the field were made and the subcommittees appointed:

1. Sound film practice:

E. I. Sponable

H. W. Dreyer

Donald MacKenzie, *Chairman*

This committee was requested to study the standardization of the dimensional characteristics of positive sound film. This includes width and position of the sound track on the film, the dimensions and position of the picture area, distance between the picture gate and the sound slit, and all other dimensional characteristics relating to positive sound film and its use.

2. 35 mm. film and equipment, including 35 mm. sprocket, projector, and camera practice:

H. N. Griffin

A. S. Howell

G. L. Chanier

J. L. Spence, Jr.

V. B. Sease, *Chairman*

The scope of this committee's activities is rather wide, including particularly the sprockets used in handling 35 mm. film in projectors, cameras, and processing machinery. It has come to the attention of the committee that some equipment is now being manufactured which does not conform to the standards officially adopted by this organization. The subcommittee was therefore requested to look into this situation and to attempt to reconcile any differences between our standards and existing practice. If conclusive evidence can be produced indicating that our present standards are unsatisfactory, revision should be made. This subcommittee was charged with the responsibility of attempting to clear this matter up at the earliest date possible.

It was suggested that charts similar to those already adopted for 16 mm. sprockets be prepared for 35 mm. sprockets and that these charts should show standard dimensions for sprockets differing in number of teeth and angle of film contact. This subcommittee was requested to deal with this matter.

The subcommittee was also assigned the subject of standardization of cores on which manufacturers are to supply negative film, as suggested by the Seventh International Congress of Photography. The sample core submitted by the Congress was turned over to the subcommittee for analysis.

Certain other matters, such as the position and size of printer notches on negative, were also assigned to this subcommittee.

3. 16 mm. dimensions and practice:

A. S. Howell
A. N. Goldsmith
L. A. Jones, *Chairman*

While this Society may not be as vitally interested in the substandard films as in the standard 35 mm. film, it seems desirable to give some attention to this field. The standards already adopted seem to be quite satisfactory, but there may be a few minor points requiring attention.

4. Nomenclature:

A. N. Goldsmith
F. L. Brown
W. R. G. Baker
W. B. Rayton, *Chairman*

In the early years of this Society's life considerable time was spent by the Standards and Nomenclature Committee in defining specialized terms used in the industry. At that time definitions were written and submitted to the Society and officially approved, or, more usually, rejected. This practice excited an enormous amount of discussion and the results achieved do not seem to be of sufficient importance to warrant the continuance of this procedure. There are, however, many words and phrases used with a highly specialized meaning in the motion picture industry, and the committee has had frequent suggestions submitted relative to the establishment of definitions of these terms. After discussing this matter it was the general consensus of the committee that no attempt should be made to write and adopt official definitions. The committee feels, however, that a rather complete glossary of specialized terms used in the industry may be of considerable value. This subcommittee was therefore requested to prepare a list of definitions of this kind.

The second meeting of the committee was held March 25 at which the subcommittees reported progress of work to date. On this occasion the various problems were discussed at considerable length and some definite recommendations made. Many of the points brought up were referred back to the committees with request that the chairman report formally by correspondence as soon as possible.

Following is a summary of the work of the committee up to the present time.

Sound Film Practice

There are so many factors and divergent opinions involved in this subject that it has been very difficult to obtain complete agreement as to a proposal for dimensional standards relative to practice in making sound film positive. There seems to be fair agreement relative to certain points, however, and the following proposal is drawn and presented for your consideration.

For combined sound and picture on 35 mm. film. It is proposed that a space 0.121 inch inward from the inside edge of the perforations on the right facing the emulsion with image inverted shall be set aside as a total space in which to print the sound record. This space provides for a clearance of 0.004 inch between the inside edge of the perforation and the outside edge of the sound track proper,

The number of teeth in contact with the film shall be the number of teeth in the arc of contact of the film with the drum, the pulling face of one tooth being at the origin of the arc.

This is illustrated in Fig. 2.

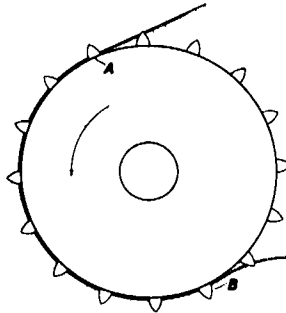


FIG. 2.

35 mm. Film and Equipment

Light change notches on negative film. This question has been discussed at length by the committee but no definite recommendation has been formulated. It does not appear that we can agree

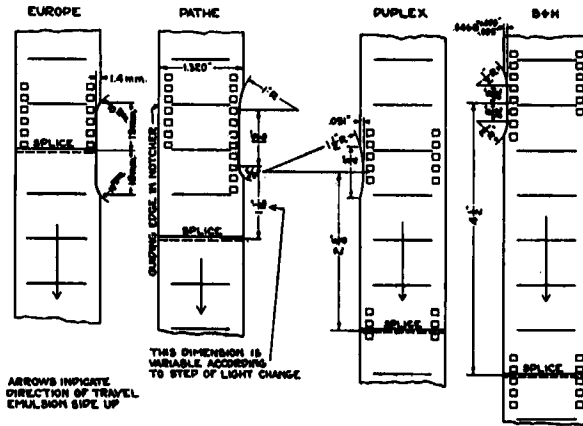


FIG. 3.

to the recommendations made by the International Congress of Photography since the practice in this country is widely divergent from those recommendations. The situation as it exists at the pres-

ent time is shown in Fig. 3 in which the notching practice of Bell and Howell, Duplex, Pathé, and the International Congress recommendation are shown together for the sake of comparison. There are in existence at present large quantities of negative which have been notched by three of these methods. The settlement of this question involves many considerations, not only the existing negative which is already notched, but also printer design, method of light control, etc. The committee feels that it is highly desirable to reach some definite agreement on this subject and a continued effort will be made to find some solution.

Rings for negative raw stock. This matter has been considered from different angles but no definite agreement has been reached. The matter is at the present time under discussion by various film and camera manufacturers. It seems quite probable that some definite agreement can be reached and it is therefore held open for further work.

35 mm. sprockets. An effort has been made to obtain from those manufacturers who are making sprockets not in conformity with our standards, a definite statement of their objections to our standards together with proposals for modification. Thus far, the committee has not been able to obtain this.

16 mm. Dimensions and Practice

Safety film. It seems desirable that the Society formulate a definition of this term. The terms "noninflammable," "slow burning," and "safety" have been used in referring to the film base used in the manufacture of some 35 mm. and all substandard widths of motion picture film. The committee recommends that the term "safety film" be adopted in reference to this material. It does not seem possible to formulate a definition of this material in terms of its chemical constitution since widely different materials and combinations may be used for its manufacture. It does seem possible, however, to define the degree of inflammability in a way which should be very satisfactory as a practical test for differentiating between safety and non safety supports. The following definition is proposed:

The term "safety film" may be applied to any material, either uncoated support, support coated with emulsion, or the exposed and processed product, which has a *burning time* greater than fifteen

(15) seconds; the burning time being determined with a sample of standard size and according to the procedure of the Underwriter's Laboratories.

Dimension of Test Sample

Length: 36 inches, 914.4 mm.

Thickness: 0.005 to 0.006 inch, 0.122 to 0.152 mm.

Width: 0.630 to 1.378 inches, 16 to 35 mm.

This definition was formulated after a consideration of the data on burning time of various samples of film base and newsprint paper shown in Tables I, II, III, IV, and V. These data were obtained by using samples from various sources, both domestic and foreign, and represent fairly well the materials now commercially available. The tests were run according to the procedure of the Underwriter's Laboratories, as follows:

"Strips of the product and ordinary newsprint 1" wide and 10" long, and 1" wide and 36" long, were suspended vertically by a small wire through a pin hole at one end of the strips. A gas test flame $\frac{3}{4}$ " long and $\frac{1}{4}$ " in diameter was applied at the lower end of the suspended strips. The relative ease of ignition, height of flame and time required for complete combustion were observed."

The tests were made in a place protected as far as possible from drafts, although no hoods or shields were used.

The column designations are as follows:

L—length of test sample (inches)

T—thickness of test sample (thousandths of inches)

W—width of test sample (mm.)

T_i—time of ignition (seconds)

L_f—length of flame (inches)

T_c—combustion time (seconds)

No statement has been made as to the temperature and relative humidity of the samples or the atmosphere in which the tests should be made. This factor will have relatively little effect on the test of film base. It is quite possible that the relative humidity of the newsprint sample will affect the burning time. The tests quoted in Table III were made at room temperature (70°F) and the samples were in equilibrium with an atmosphere of approximately 40 per cent relative humidity.

TABLE I
Safety Film Base (uncoated)

<i>Test No.</i>	<i>L</i>	<i>T</i>	<i>W</i>	<i>T₁</i>	<i>L_t</i>	<i>T_e</i>
1	36"	5.25	25.4	1	3	60
2	"	"	"	1 to 2	6	43
3	"	"	"	1	5	53
4	"	"	"	1	4	90
5	"	"	"	2	5	70
6	"	"	"	1	3	60
7	"	"	"	1.5	4	64
8	"	"	"	1	5	20
9	"	"	"	1	8	30

TABLE II
Safety Film Base (emulsion coated)

10	36"	6.0	25.4	4	7	40
11	"	"	"	3	9	67
12	"	"	16.0	3	4	68
13	"	5.25	"	2	4	46

TABLE III
Safety Film Base (coated, flushed, processed)

14	36	6.0	25.4	2.	12	26
15	"	"	"	1.5	12	44
16	"	"	16.0	3.	6	58
17	"	5.25	"	2	3	64

TABLE IV
Newsprint Samples

<i>Test No.</i>	<i>L</i>	<i>T</i>	<i>W</i>	<i>T₁</i>	<i>L_t</i>	<i>T_e</i>
18	36"	2.5	25.4	√1	18	14
19	"	"	"	√1	24	12
20	"	"	"	0+	18	11
21	"	3.0	"	0+	20	10

TABLE V
Nitrate Film (coated)

22	36"	5.75	25.4	0	30	4
23	"	6.0	"	0	"	3
24	"	6.0	16.0	0	"	3
25*	"	5.75	25.4	0	"	4
26*	"	6.0	25.4	0	"	3
27*	"	6.0	16.0	0	"	3

* Flashed and processed.

The definition as stated, therefore, in effect, defines "safety film" as any material having a burning time greater than ordinary newsprint.

Nomenclature

The subcommittee on nomenclature has been very active and has prepared an excellent and comprehensive list of terms with definitions. It is not proposed to submit this to the Society for official approval. Having received the careful consideration and approval of this committee, it is proposed to publish the list in the Transactions as a part of the committee report and it is hoped that it will be found useful and not excite too much criticism.

The items which the committee wishes to present now for initial acceptance by the Society are:

1. Taking speed.
Standard taking speed shall be 24 pictures per second.
2. Projection speed.
Standard projection speed shall be 24 pictures per second.
3. The scanning slit (for combined sound and pictures on 35 mm. film) shall be located 14.5 inches below the picture gate.
4. Location and width of the sound track on combined sound and picture positives.

The location and dimensions of the sound track area as recommended by the committee for standardization is shown in Fig. 4. These dimensions are identical with those applying to the same distances in Fig. 1. In Fig. 4, however, only those dimensions pertinent to this particular item of standardization are given. If the Society sees fit to adopt these dimensions as a standard Fig. 4 will then be placed and incorporated in the body of our standards as a chart similar to those already adopted showing film and sprocket dimensions.

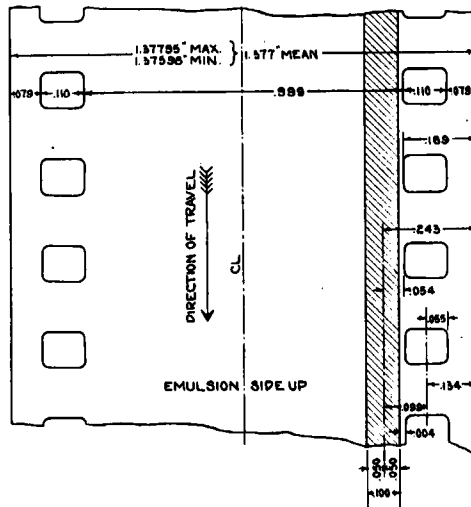
5. Number of teeth in contact with the film shall be the number of teeth in the arc of contact of the film with the drum of the sprocket, the pulling face of one tooth being at the origin of the arc.
6. The term *Safety film* may be applied to any material, either uncoated support, support coated with emulsion, or the exposed and processed product, which has a burning

time greater than fifteen (15) seconds; the burning time being defined as the total time (in seconds) required for the combustion (of a sample of standard dimensions) as determined according to the procedure of the Underwriter's Laboratories. Size of standard sample for determination of burning time:

Length—36 inches, 914.4 mm.

Thickness—0.005 to 0.006 inch, 0.122 to 0.152 mm.

Width—0.63 to 1.378 inches, 16 to 35 mm.



DIMENSION AND POSITION
OF
SOUND TRACK AREA
35 mm. COMBINED SOUND AND
PICTURE POSITIVE.

FIG. 4.

*Summary of Action taken on the report of the
Standards and Nomenclature Committee*

The following items as proposed by the Standards and Nomenclature Committee and modified during the discussion of the report received the initial approval of the Society. These must now stand for six months, after which they will again be presented to the Society for final adoption.

1. Taking speed for standard 35 mm. sound pictures shall be 24 pictures per second.

2. Projection speed for standard 35 mm. sound pictures shall be 24 pictures per second.
3. The scanning line shall be located 14.5 inches below the picture gate.
4. Location and width of sound track for combined picture and sound positives. The dimensions and position of a sound track area shall be as shown in Fig. 4, that is on the left side of the picture.
5. The number of teeth in mesh with the film (commonly referred to as "teeth in contact") shall be the number of teeth in the arc of contact of the film with the drum of the sprocket, the pulling face of one tooth being at the origin of the arc. (see fig. 2).
6. The term *Safety film* may be applied to any material, either uncoated support, support coated with emulsion, or the exposed and processed product, which has a burning time greater than fifteen (15) seconds; the burning time being defined as the total time (in seconds) required for the combustion (of a sample of standard dimensions) as determined according to the procedure of the Underwriter's Laboratories. Size of standard sample for determination of burning time:
 - Length—36 inches, 914.4 mm.
 - Thickness—0.005 to 0.006 inch, 0.122 to 0.152 mm.
 - Width—0.63 to 1.378 inches, 16 to 35 mm.

DISCUSSION

PRES. PORTER: Standardization is one of the major reasons for the existence of our society. I cannot emphasize too strongly the importance of it, and I feel we are exceedingly fortunate in having Mr. Jones head of the committee and having the personnel on the committee we have. They are doing far-reaching work for us.

Before taking up the actions on their recommendations, I should like to ask the active members to hold up their hands, so that the action may be official.

(Count made of active members present)

This report is open for discussion and action, and I suggest that we take up the six items one at a time.

MR. JONES: The first item is relative to taking speed. The committee rather felt that in view of the present situation it would

be satisfactory to adopt 24 pictures a second as standard taking speed. The fact remains there are silent pictures, and whether or not it is advisable to supersede that definition or merely to specify the speed for sound pictures is the point on which I should like to have discussion.

DR. MEES: I think it should be made clear that it applies only to 35 mm. film.

MR. R. C. HUBBARD: I don't quite see how we can change our standard completely without mentioning that it has reference to sound film. Certainly, camera men making occasional silent pictures are not turning at the rate of 24 pictures a second.

MR. W. C. COOK: I should like to point out that there is still and likely to continue to be a considerable amount of industrial, educational, and other film taken for silent projection, and I think we should state specifically in the new standard that it is for sound film.

MR. TAYLOR: If that is followed, what is thought about the other?

MR. JONES: The fact that that standard is in a group adopted previous to the beginning of sound technique would indicate that it doesn't refer to sound pictures. It may be desirable in future reprints of our standards to specifically indicate that the 16 pictures per second refers to non-sound film. As a matter of fact, that speed of 16 pictures a second was not very rigidly in practice—it was departed from under certain conditions. In sound film, 24 pictures is rigidly definite and susceptible of standardization.

MR. ROSS: Is it not possible that in the future educational pictures will be accompanied by speech and in which case, they will be recorded at 24 frames a second and that for this reason, eventually all other pictures will come into this class?

MR. CRABTREE: Apparently, in the case of silent films a little speeding up of the action is often necessary, so that taking at 16 and projecting at a higher speed is satisfactory. In the case of the talkies any attempt to hurry along the dialogue is at once perceptible and objectionable.

MR. WALLER: I beg to contradict Mr. Crabtree. I have been in dramatic studios most of my life, and it has been part of my job to watch the camera man. Directors have speeded up the

camera men in order to bring the action back to normal when projected fast, and in the majority of studios the cameras are cranked at 85 to 90 feet per minute, though they thought they were taking at 16 pictures a second.

PRESIDENT PORTER: I should like to point out that according to our rules, any action today is not final; they rest until the fall convention. Are you ready to act on the recommendation of the committee that the taking speed be 24 per second for sound pictures?

(Motion seconded and carried)

MR. JONES: Projection speed to be 24 pictures a second for 35 mm. film.

(Motion seconded and carried)

May I have the first slide again? The third item relates to the position and width of the sound track area on positive film as specified by this dimension drawing (indicating). Before you consider this, I want to point out this thing: The majority of the committee are in favor of adopting this as a temporary expedient, and there are members who object to it. Some do not agree to the adoption of these particular dimensions. In discussing this and voting on it, you should keep this in mind: it is a majority recommendation but not a unanimous one.

MR. R. C. HUBBARD: I think this is too indefinite. I take it that this portion (indicating) should be black, and it doesn't state that. This is the position of the aperture in the projector, which is clearly stated. What is the picture; what is the black portion?

MR. JONES: Item 4 relates specifically to the location and width of the sound track. We are not proposing any standard dimensions for picture area. If I am not correct in that, I should like Dr. MacKenzie to refer to this.

DR. MACKENZIE: Mr. Jones is correct, and the question raised was left open by the sub-committee because certain people feel that the space should be black and others think it is not necessary. In such printers as the Western Electric Company uses one part is light and the other is dark, and it is generally accepted that the sound track itself should be 100 mils wide. For the variable area, as made by the RCA, to accommodate their sound track, it should be a track narrower than 100 mils, bordered by

black on each side. I don't think it is a function of this committee to state whether they should be clear or black.

MR. JONES: We are simply defining dimensions; we are not standardizing whether it should be black or white.

MR. TAYLOR: Mr. Jones has stated that this relates to the sound track, and yet the title relates to the aperture. That was not my principal point. As I recall the wording, it speaks of the emulsion to face and looking at it in a certain way. I have heard a group of men discussing these matters for hours, and I think you can definitely and simply state this so that there will be better understanding if you say the sound track is at the left of the picture. This tells the camera man he will lose from the left and not from the right, which is very important. In special camera work, it tells the man where to put in an aperture, and in designing printers and everything you tie to a particular side of the picture. I think that while this may appear trivial in the use of words, it is very important. Who knows whether you will have emulsion on both sides or a reversal process with the emulsion on the other side. The simple thing is to say that the sound track is on the left side of the picture. The picture is the negative when you look at it, so that you see a picture and not a reversal picture. On the screen you look at the picture and the sound track is on the left side, and the man putting up the screen and everyone else is interested in it, and a great deal of money has been spent on this.

DR. MACKENZIE: I think that is exactly pertinent. I think Mr. Taylor is stating the rules he has to remember. This is for the guidance of the people who are printing it.

MR. TAYLOR: I am not making a recommendation for one man alone. It is for everybody, and I think I have shown you have not defined this fully. When you talk about the emulsion side, suppose some one wants to make 35 mm. negative and develop it to a positive; it isn't a picture, it is a negative.

DR. MEES: Would the committee insert after their statement the words "that is, on the left side of the picture?"

MR. TAYLOR: Is this for the benefit of one particular group or for the whole industry?

MR. JONES: The Chairman has no objection to that phrase, is there any member of the committee present who objects? Apparently, the committee accepts.

DR. MACKENZIE: I am very much in favor of putting in anything which will avoid ambiguity.

MR. EDWARDS: In making provision for a 100 mil track is it necessary that the width between the outer edge and the sprocket hole is only 4 mils? The average theatre finds with that edge of the sound track only 4 mils—our experience shows that the edge of the sprocket hole is fractured and leads into track and the music cuts in on the picture. If there is not some other good reason why can't we have 17 mils clearance on the inside and only 4 on the outside where the source of damage is more prevalent.

DR. MACKENZIE: The 4 mils on the outside was to avoid danger of light striking the sprocket teeth and being reflected and giving a sound of frequency 96 cycles from the perforation. The 17 mils on the other side was what was left over after the present practice of projectors and printers was considered. We know of no reason for recording this 17 as sacred. Considering the practice and the pictures as produced, we thought this the most judicious use of the space if you print on the left side of the 35 mm. film.

MR. EDWARDS: I don't think Dr. MacKenzie quite understood my object. I can't see why instead of having 4 thousandths clearance between the edge and the sprocket hole the track couldn't be moved over, because you have an adjustment for the scanning slit that would permit it.

DR. MACKENZIE: There is an adjustment for the scanning slit located so that it is 54-55 mils from the inside line of the perforations.

MR. EDWARDS: In my Movietone I can move it off the track.

DR. MACKENZIE: Those in the theatres are not that way.

MR. EDWARDS: I can bring my sprocket to make any adjustment on the track; this is standard Movietone apparatus. When the engineers first put it in, they made a mistake and we centered the track and had no further trouble.

DR. MACKENZIE: I should like to see that. Unless I was misinformed, the standard machine is not expected to be so adjusted.

MR. CRABTREE: I see another objection to this small separation between the sound track and the edge of the perforation. During development you can get a flow of developer through the perforations and when developing to low gammas you would be apt

to get a greater degree of development of that part of the sound track, adjacent to the perforations so that gamma would vary across the sound track.

DR. MACKENZIE: That involves an arrangement for widening the whole film, and the committee is not prepared to recommend wider film.

MR. CRABTREE: Under the existing conditions, the flow of developer through the perforations would be worse than the effect of the reaction products of development on the picture.

(An unrecorded remark)

DR. MACKENZIE: What you mean is the guide roller above the sprocket. If the roller is so adjusted that the film comes down vertically, then this diagram applies strictly. If there is a mistake in the adjustment, it will come down askew and adjustment will be closer to the drawing than it was before when the film travelled vertically past the scanning line.

MR. ROSS: If we remember Dr. MacKenzie's paper correctly last fall, he stated that longitudinal lines, white or black, didn't affect the sound record. Why not reduce the width of the sound track, say .010", making the space between the track and the holes .015"? Would the exposing of one side of the track and the photo-electric cell cause interference with proper reproducing?

DR. MACKENZIE: We thought it would be better located symmetrically. It is not absolutely necessary, but it is desirable to avoid the weave of the film. With a sound track this size there is little clearance on each side. If you had a black edge of the sound track coming to the edge of the scanning line, it would be cutting off the variation.

PRESIDENT PORTER: Are you ready for the question? We are voting on the position of the sound track. Does someone make the motion to accept the recommendation?

(Motion duly seconded and carried)

As I understand it, you skipped the third.

MR. JONES: The scanning line for combined sound and picture shall be 14.5 inches below the picture gate.

PRESIDENT PORTER: Any discussion?

MR. TAYLOR: I think that is another case where you are defining a relative location of the picture and sound on film. The picture exists on film in any position you put it, and I think a better choice of words could be made although I have no objection to 14.5 inches.

MR. JONES: We might consider re-wording that; will you do it?

MR. TAYLOR: I shouldn't attempt to re-phrase it without consideration.

MR. JONES: I will call on the sub-committee then. Have you any suggestion for re-wording this?

DR. MACKENZIE: I haven't studied the objection and couldn't frame an answer.

MR. R. C. HUBBARD: Are you describing relative location of sound and picture on the film, or the location of the scanning frame and picture aperture in the projector?

MR. JONES: We are defining the distance between the point where the sound is being reproduced and where the picture is being reproduced.

PRESIDENT PORTER: The committee recommends that the scanning line be located $14\frac{1}{2}$ inches below the picture gate.

(Motion for adoption made, seconded, and carried)

MR. JONES: The fifth proposition is shown by this slide.

MR. TAYLOR: In spite of the fact that I know some of you are unsympathetic with me, I will run true to form. Mr. Jones explained what I think anybody who has studied this will understand. Since one tooth is in contact, why talk about the number of teeth in contact? My footnote suggestion is that you say "number of teeth in mesh with the film."

MR. CLARK: If you put that on, you have to add one more tooth in the drawing.

MR. TAYLOR: I am willing to have it defined as defined originally.

MR. JONES: The Chairman accepts the word "mesh" in substitution for "contact."

MR. BURNAP: I am not making this as an objection, but the number of teeth in contact is the usual way of speaking. If we say "in mesh" we go off at a tangent and have not defined the thing in question.

MR. TAYLOR: The balance of the definition explains what is meant, and I think in addition to being more accurate it is helpful in that many men don't understand how this works, and if you can bring home to them where the tooth is pulling, it is very helpful.

DR. MEES: Would it be possible to put it in brackets: "number of teeth in mesh (often referred to as 'in contact')." We want to refer to the previous literature to make this clear.

MR. JOHN G. JONES: I think Dr. Mees' suggestion hits the point. Take two gears for example, the number of teeth in mesh are not all in contact.

MR. JONES: Modify the definition then to read as suggested:
(Modified definition read)

MR. TAYLOR: Don't you have to go through and say "the greatest number of teeth in contact," because as the sprocket moves it is one tooth more or less?

MR. JONES: I think in reply to that we are trying to clarify the useage of the term which is proper in our literature. The number of teeth in contact is taken as the thing we have defined. If we further complicate it by saying it is the greatest, it is more ambiguous.

MR. TAYLOR: I don't agree.

PRESIDENT PORTER: Are you ready for the question as amended?

MR. CLARK: According to that drawing, if you rotate that two degrees that way, the upper tooth goes out of mesh.

MR. JONES: That is the way they want to define it.

MR. CLARK: How would it be to say "the maxium number of teeth in mesh at any one time?"

MR. FRIEDMAN: If we say at the base of the tooth?

MR. ROSS: I think the title as given is clear because it states that the tooth is in contact, so why assume that the sprocket has moved? The fact is that only one tooth is in contact with the film, the remainder are in mesh.

MR. JONES: The term we are attempting to clarify, because it has been used in the previous literature on standards is the number of teeth in contact with the film. Only one tooth is in contact with the film.

MR. ROSS: Would you please read the revised definition again?
(Definition repeated)

It seems to me that the last five words describe the whole thing and make it clear.

PRESIDENT PORTER: I have two suggestions to make here: One is that in view of the fact that only active members are allowed to vote, that the discussion be confined to active members. Also, we are not going to get anywhere by suggesting two or three different definitions, and it is practical to refer this matter back to the committees for further study if the body as a whole is not sat-

ified with the recommendations. I will ask Mr. Jones to read the proposition again.

(Definition repeated again)

(Adoption moved, seconded, and carried)

Mr. Jones will read the sixth recommendation.

DR. MEES: This particular definition was asked for at the International Congress. Ours will be only one of the different national recommendations, and it is a little unfortunate that it has been necessary to draft it in accordance with the recommendations of the underwriters' Laboratories, because the conditions of test will be different in each country. I shall support it as it is, but I think a new set of recommendations will have to be adopted for the test so that it will be in accord with other people's recommendations. I think for the moment we should adopt this definition.

MR. ROSS: I don't remember that any mention of surrounding temperature was made. Is that important?

MR. JONES: It isn't important; it is very insensitive to temperature.

MR. HUBBARD: There is no mention of the age of the film, which is quite a factor.

MR. JONES: As a matter of fact there are many factors which might be mentioned as having some influence on the burning time. We are trying now to establish some value which will distinguish between a film we wish to call Safety and one non-safety. Of the materials ordinarily referred to as safety film none have a burning time less than 20 seconds, while the nitrate film has a burning time of approximately 4 seconds. There is a very wide gap between the two. The influence of various factors, such as temperature, age, etc. is undoubtedly of a different order than the difference in burning time between the nitrate and the most rapidly burning safety film. It will be remembered that this definition cannot be formulated with the precision of that relating to the international meter. If we should attempt to take into account all possible factors that may influence burning time the definition would become so hedged around with qualifications as to be extremely complicated and difficult of interpretation. We feel that the definition proposed is a reasonable one.

PRESIDENT PORTER: I will ask Mr. Jones to read the recommendation once more.

(Adoption moved, seconded, and passed.)

That concludes the report of the Standards and Nomenclature Committee.

(Applause)

It shows they have been doing a tremendous amount of work.