

# Reports of Engineering and Standardization Committee Activities

*The brief reports published here are intended to reflect the large volume of work being carried on through the SMPTE Engineering Dept. and its committees. For more detailed information on the activities or the individual projects, one should contact Alex E. Alden, Manager of Engineering Services of the SMPTE, at headquarters. The Society welcomes participation by specialists from industry in the work of its Engineering Committees, and all those who may be interested in exploring the possibility of active membership on any of the committees should contact Alex E. Alden or Roland J. Zavada, Engineering Vice-President of the Society. While the Society is in a position to provide the mechanics for the development of National Standards, it relies heavily on the input made available from industry through its engineering committee members.*

## Standards Committee

The committee chairman, C. E. Anderson, whose term expires at the end of this year, held his last official meeting and introduced his successor, Jack Hall, of the Filmline Corporation.

Topics discussed included:

- (1) The introduction of new engineering committee chairmen for the 1978–1979 period.
- (2) Steering Committees — particular emphasis was placed upon the formation and use of Steering Committees and the chairmen of the engineering technology committees were urged to form such committees to make better use of their individual technology to secure timely and appropriate formation of standards and direction for engineering effort.  
It was agreed that all committee chairmen might meet with their Steering Committees on a selected day in the April/May period of 1978 to be followed by a Plenary Meeting of the full Standards Committee. This joint meeting will permit planning as well as a review of the progress of the work in the engineering technology committees.
- (3) The Engineering Vice-President, R. J. Zavada, explained the new guidelines for a more rapid completion of engineering agenda items and commended Alex E. Alden, the Manager of Engineering Services, for the development and implementation of a complete status report.
- (4) Letter balloting — it was agreed to extend the time allowed for letter balloting to three weeks, as the two-week period proved to be too short for appropriate review.
- (5) User needs — the Engineering Vice-President expressed concern over the fact that little progress is being shown in generating “user” test tools and methods to evaluate product performance and possible safety standards, and urged that the subject be given more consideration.
- (6) Metric dimensioning — the Manager of Engineering Services, A. E. Alden, called the committee's attention to the fact that many new standards being developed specify metric dimensioning as primary units. In keeping with national and international conversion practices, when millimeters are converted to inches the value will be carried to two more decimal places in the derived inch dimension so that the required degree of precision will be retained.

17 October 1977

CHARLES E. ANDERSON  
Chairman

## Educational, Industrial and Consumer Film Technology Committee

The committee met on 17 October 1977 in Los Angeles, California. The traditional introduction of committee members and guests which consisted of 18 people took place prior to the opening of formal committee business. The Manager of Engineering Services, A. E. Alden, reviewed the status on RP 18 (E11.12), known as the “Jiffy” film. He noted that, because of the various sound and film formats, the standard is being rewritten and will be completed by the next SMPTE Technical Conference to be held in New York City.

In the absence of L. Bunting, D. W. McConnell reported on the subject, “Super 8 Projector Cassettes” (E11.57). The committee was asked if a tutorial report correlating the various systems is necessary. Pursuant discussions proved that little interest is being shown and the members present voted that the subject be deleted from further consideration (taken off the agenda).

The chairman noted the interest shown by this committee on the subject “16-mm Projector Testing,” which is under the jurisdiction of the PH22 Committee but being reviewed and pursued for formal documentation by ANSI PH7-Audio Visual. Recognizing PH7's intensive interest and activity, it was decided to assign two observers to the PH7 sub-committee from the Educational, Industrial and Consumer Film Technology Committee to assist in preparing a document. Upon completion, it will be concurrently balloted by the full committee.

Documents PH159.2, “Super 8 Camera Cartridge Film Location,” and PH159.3, “Cartridge Pressure Pads,” will be reviewed by a Working Group chaired by D. W. McConnell with a view to combine both documents as one standard to conform to international practices.

The meeting was adjourned at 5:00 P.M., with the next meeting to be held concurrently with the 120th SMPTE Technical Conference.

17 October 1977

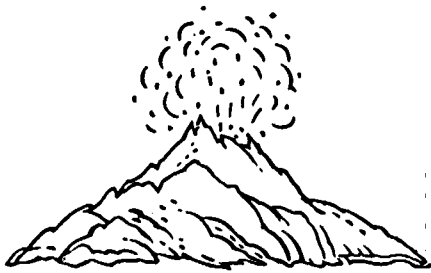
ARNOLD C. SCHIEMAN  
Chairman

## Committee on New Technology

At its 19 October 1977 meeting in Los Angeles, California, the Chairman, F. M. Remley, Jr., pointed out that the committee is charged with the responsibility of keeping abreast of the evaluation of new technologies within the purview of the SMPTE engineering interests and it has divided its concern to specific Study Groups and one Working Group.

Progress achieved since the last meeting of the committee is as follows:

- (1) Study Group on Digital Television — (Chairman, C. P. Ginsburg) — this group continues to meet on a regular basis, examining the overall implications of television systems, using digital video (and audio) signals. It has held approximately eight meetings and will submit its annual progress report for *SMPTE Journal* publication in the near future.
- (2) Working Group on Digital Video — (Chairman, R. S. Hopkins) — this group was formed at the specific request of the Study Group on Digital Television and focused its attention for more than eight months on two specific problems: the best digital video format and the most suitable digital interface configuration for CCIR



# Special Effects in Motion Pictures

(Some Methods for  
Producing Mechanical  
Special Effects)

*Frank P. Clark*

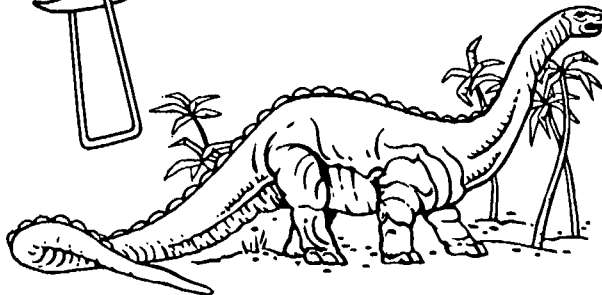
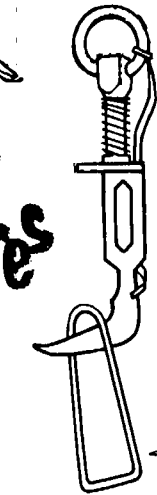
**CONTENTS:** The Development of Special Effects  
The Application of Special Effects  
Atmospheric Effects  
Special-Effects Props  
Optical Effects  
Sound Effects  
Miscellaneous Effects  
Shooting  
Pyrotechnics  
Sources of Special Effects (Appendix)  
Index  
Bibliography

**238 PAGES**

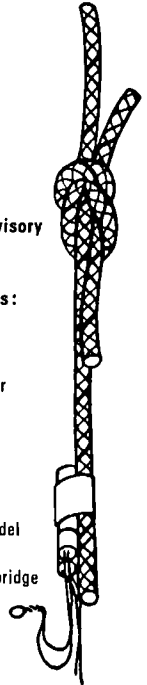
**MORE THAN 100 ILLUSTRATIONS**

**Price: \$7.50**

Discounts of 20% to SMPTE members and booksellers  
on single copies; 25% on orders of 5 through 49;  
33-1/3% on orders of 50 or more.



Reviewed by  
the SMPTE Advisory  
Committee on  
Special Effects  
Motion Pictures:  
Herbert Meyer  
*Chairman*  
Russell Brown  
Thomas G. Fisher  
Jack Froehlich  
Max Hankins  
Ub Iwerks  
Ivan Martin  
Bob Matney  
Frederic L. Ponedel  
John Roche  
J. Edward Stemberge  
Edward Stones  
Virgil Summers



Order from:

**Society of Motion Picture and Television Engineers**

862 Scarsdale Ave., Scarsdale, N.Y. 10583

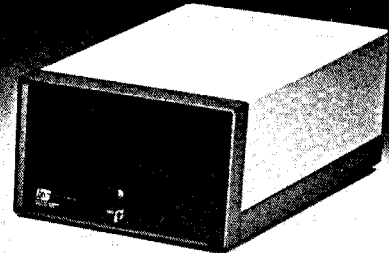
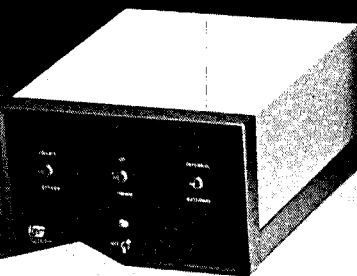
# Superior SMPTE from BTX

4300 Reader  
and Video Display  
\$1,500

4200 Reader  
and Digital Display  
\$2,850

4100 Edit Code  
Generator  
\$2,850

4400  
Decoder  
\$995



BTX guarantees superior performance from  
1.5 to 1200 IPS even at -18dBm or with any degree  
of time jitter.

BTX guarantees superior reliability and assures  
it with a 100-hour operational burn-in prior to shipment.

BTX guarantees time-code system compatibility  
with its complete line of cost-effective modular building blocks.  
For complete information, call:

The BTX Corporation • 438 Boston Post Road  
Weston, Massachusetts 02193 • 617-891-1239



system "M," NTSC television studios and plants. Satisfactory progress is evident and reports will be published as conclusions are agreed upon.

- (3) Study Group on Digital Audio — (Chairman to be announced) — this group is in its formative stage and its initial function will be directed to the problems of digital audio signals, which may accompany digital video signals within the television studios and production plan environment. Some specific boundaries for its efforts will be achieved through consultation with other technical societies making up the JCIC (Joint Council on Inter-society Coordination), which will be defined in the future.
- (4) Study Group on Time Codes for Motion Picture Films — (Chairman, R. Leonard) — a preliminary report has been received and it was suggested that close examination by users and equipment manufacturers alike of the implications of adopting, for motion-picture use, the SMPTE Time and Control Code together with a visually readable explanation of the code for motion-picture use. A concentrated examination of the several requirements for such a system will be made in the future.
- (5) Study Group on Video Disc Systems — (Chairman, C. R. Paulson) — this newly constituted group held its first meeting during this conference. The session, which was well attended, concurred that additional studies are needed to identify (a) the scope of manufacturing video disc and development efforts on the systems and (b) attributes of the several potential systems which might be ultimately standardized. Further meetings are planned.
- (6) Study Group on High-Definition Television Systems — (Chairman, D. Fink) — this newly formed group has held two meetings. They have undertaken the examination of questions concerning optimum utilization of the present 525-line NTSC television system together with theoretical and practical studies of other television systems, using more scanning lines, wider video bandwidths and different aspect ratios. Studies encompass systems devised to be useful for both broadcast and for theatrical applications.

19 October 1977

FREDERICK M. REMLEY, JR.  
*Chairman*

## Committee on Laboratory Services Technology

After the customary introduction of those present, the meeting was called to order at 3:10 P.M. on 19 October 1977 at the Century Plaza Hotel in Los Angeles, California. The Manager of Engineering Services, A. E. Alden, reported that documents PH22.178, 35-mm Splices; RP 23, Reinforcement of 70-mm Splices; and RP 25, Sound/Picture Sync, were completed and referred for subsequent steps.

Items under review produced the following:

- (1) W. Discher reported that the Working Group on Film Storage (L6.D) reviewed the existing documents and asked for further direction on procedure. It was recommended that the Manager of Engineering Services request expansion of the existing standard, ANSI PH1.73, to include motion-picture film within its scope and that the working group continue to develop a more comprehensive document specifically directed to motion-picture film, which can be submitted as an Engineering Committee Recommendation.
- (2) Immediately following the report given by D. Carter on Evaluation Prints (L6.2), it was decided that the work be continued to include a more clearly defined scope and direction.

- (3) J. Ehrenberg, reporting on the action of his Working Group on Laboratory Definition Test Films (L6.E), was directed to work in conjunction with the Working Group on Practice for Evaluating Prints (L6.2) to complete the document.
- (4) J. Baptista reported on the status of the longstanding project, Laboratory Exchange of Colored Materials (L6.A), and noted that, due to the lack of a continuing need for such materials, the subject warranted no further study. He recommended that it be dropped. The members present unanimously agreed and the working group was discharged.

The Manager of Engineering Services announced that documents PH22.117, Sound Track Density; PH22.179, Super 8 Print on 35-mm (2R); and PH22.180, Super 8 Print on 35-mm (5R), are the subjects for the prescribed five-year review during the coming year, and he asked the members as well as others who are interested to begin their personal reviews pending presentation.

On behalf of the committee, the Engineering Vice-President, R. J. Zavada, expressed his thanks to the Chairman, J. Hall, for his four years of diligent service and the Chairman, in turn, thanked the committee for faithfully discharging its numerous tasks. Subsequent to further discussions, John Ehrenberg accepted the chairmanship of the Committee.

The time and place of the next meeting is tentatively set for the 120th SMPTE Technical Conference, unless previously called by the incoming chairman.

19 October 1977

J. P. HALL  
*Chairman*

## Committee on Video Recording and Reproduction Technology

This extremely active committee met in New York City on 31 August 1977, at the Sony Corporation. For the past year this committee has been engaged in areas associated with quadruplex and helical standards and recommended practices.

Worthy of special mention is the completion of documents for a proposed standard on the quadruplex SHBP format and documents on a proposed standard for Type B 1-in helical format. Nearing completion are proposed standards for Type A and Type C 1-in helical formats.

The Chairman, N. C. Ritter, reported that through the "Working Groups" progress is being made on the following:

(1) time and control code waveform characteristics; (2) video recording glossary of terms; (3) quadruplex cartridge/cassette formats; (4) 1-in tapes and reels; (5) leader formats; (6) editing decision list formats; and (7) quadruplex transport geometry.

The next meeting of this committee will be held in New York City at CBS on 7 December 1977.

31 August 1977

N. C. RITTER  
*Chairman*

## Study Group on High-Definition Television

In the absence of the Chairman, D. Fink, the Chairman Pro Tem, F. M. Remley, Jr., noted that the group met on two previous occasions. He pointed out that they have been actively engaged in: (1) defining the need for high-definition television; (2) identifying utilization areas requiring different levels of definition; (3) questioning the potential and degree of utilization of existing NTSC; (4) comparing quality of references of film projection with television displays; (5) examining the bandwidth needs and availability for broadcast television; and (6) seeking knowledge of means of generating pictures and recording higher line rate.

The group indicated that there is a need for considerably dif-

**If you produce or record on videotape,  
and want to distribute on color film...**



## **How's this for a tape-to-film transfer?**

You're looking at an actual, unretouched photo taken from a 16mm frame produced\* from videotape on our new CTR-3 Tri-Optical Telefilm Recorder.

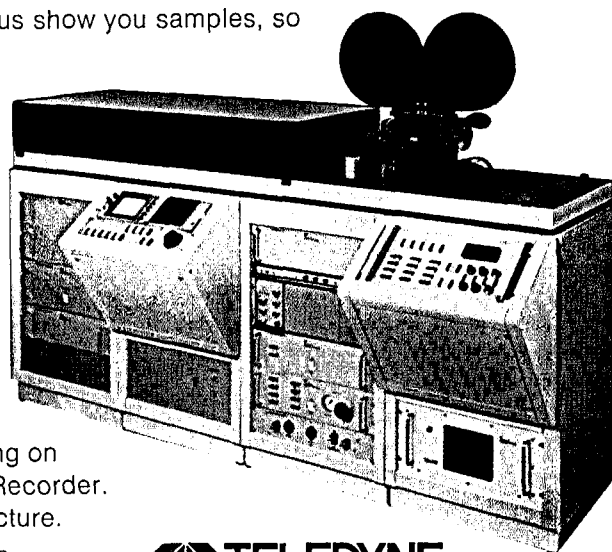
But don't just take our word for its quality. Why not let us show you samples, so you can see the results for yourself?

Already the standard of the industry, our CTR-3 lets you transfer from tape to film — quickly and easily — without losing the image quality you captured on tape.

How is it done? By using the famous Teledyne DBM-74 high-speed camera. By putting all the video signal that's on your videotape onto your 16mm or 35mm film. By eliminating scanning lines without sacrificing resolution. And by offering a new measure of operating ease in matching color, brightness and contrast quality to the film type.

If you're producing or recording broadcast, industrial, business or educational material on videotape and distributing on film, consider the purchase of a CTR-3 Tri-Optical Telefilm Recorder. You'll see the difference Teledyne can make in your profit picture.

Write Teledyne Camera Systems, 131 North Fifth Avenue, Arcadia, CA 91006. Or call us at (213) 359-6691. Telex: 675423.



 **TELEDYNE  
CAMERA SYSTEMS**

\*Transfer of Torbjorn Axelman Production made by AB FILM-TEKNIK Solna, Sweden.

ferent line rates for broadcast vs the needs for large-screen displays. It was also intimated that there is a need for a wider screen (aspect ratio 1.85:1 or similar, rather than 1.33:1 of NTSC).

Future meetings will be held during the early part of 1978 at — (1) CBS Technology Center — at which time the best attainable NTSC broadcast television quality will be demonstrated; and (2) General Electric Company — where the state of large-screen displays will be demonstrated.

20 October 1977

FREDERICK M. REMLEY, JR.  
*Chairman Pro Tem*

## Committee on Audio Recording and Reproduction Technology

A heavily attended session of the committee and guests was held on 18 October 1977 at the 119th SMPTE Technical Conference and was opened with the introduction of those present. The committee accepted for balloting the first draft of a standard for the method of measurement of signal-to-noise ratio of 35-mm and 16-mm variable-area photographic sound records.

It was agreed by the committee members present that it was not necessary at this time to initiate a change of magnetic sound record standards related to release prints with CS perforations, nor to recommend withdrawal of any CS perforation related standards. The Chairman, R. C. Lovick, asked that the committee review the developing needs for photographic sound standards for multiple channel reproduction.

The lengthy agenda included proposed cross-modulation standards for both 35- and 16-mm. The committee agreed that the 16-mm test frequency should be increased from 4kHz to 6kHz and that the 35-mm test frequency should be increased to 8kHz.

The recommendation for the development of an audio program level measuring instrument received full support from those present and the chairman will establish liaisons with the Audio Engineering Society and the NAB. Full width records will continue to be the objective on magnetic test films, but the committees agreed that, as it is difficult to assure uniform distribution across the entire recording gap width, certification should be provided only for one specified format.

J. Leahy reported that regrettably little progress has been made on the ASTR Subjective Test Film, but stated that initial steps are being taken to complete the project by the end of this year.

The Manager of Engineering Services, A. E. Alden, pointed out that the following documents will be reviewed in 1978 and asked to be revised: (1) PH22.161, Dimensions of Magnetic Striping of Super 8 Motion-Picture Film Perforated 1R-1667; (2) PH22.162, Dimensions of Magnetic Striping of 16-mm Motion-Picture Film Perforated Super 8, 2R-1667 (1-4); and (3) PH22.163, Dimensions of Magnetic Striping of 35-mm Motion-Picture Film Perforated Super 8, 5R-1667.

The Engineering Vice-President, R. J. Zavada, expressing the gratitude of the committee, thanked the Chairman, R. C. Lovick, for the time and effort he devoted to committee work for the past four years and introduced I. R. Allen, who graciously accepted the Chairmanship of the Committee for the 1978-1979 period.

18 October 1977

R. C. LOVICK  
*Chairman*

## Committee on Film Technology

The committee met on 18 October 1977 concurrently with the 119th SMPTE Technical Conference in Los Angeles, California. A comprehensive report on film dimensioning prepared by Messrs. J. Hester and L. Thomas was presented to the committee. The Engineering Vice-President, R. J. Zavada, commended them for the quality of the report and recommended that the report, with questions and comments by the Film Technology Committee, be

circulated to other interested SMPTE Engineering Technology Committees.

It was agreed that there is no need to establish a standard for 110 of 16mm films with 1-in pitch perforations since there are so few manufacturers using this format for slides or strip film systems.

Accepting the recommendation by R. J. Zavada that J. Robertson be asked to assume the chairmanship of the Working Group on Image Steadiness, the chairman so ordered. The group had been asked to assess the possibility of providing a camera placement or positioning identification mark onto the film area, thus allowing laboratories to reposition the film accurately during blowup or optical effects procedures and thereby providing maximum image placement cancellation.

The status of current use of CS perforated stock was discussed with the general consensus being that the standard should be retained since there is sufficient use of the stock in release prints in the U.S.A., even though it was acknowledged that there is a greater use of the KS perforations for release prints.

On behalf of the committee, the Engineering Vice-President, R. J. Zavada, thanked C. R. Dupree for a job well done and introduced E. V. Knutsen, who will assume the position for the 1978-1979 period.

18 October 1977

C. R. DUPREE  
*Chairman*

## Committee on Television Video Technology

A well attended session of this committee was held on 20 October 1977 in Los Angeles, California, concurrently with the 119th SMPTE Technical Conference and included guests, some of whom reflected international interests. Since A. Chismark was absent, the Committee Chairman, C. E. Anderson, acted as the Chairman Pro Tem.

The following Working Groups reported on their activities:

J. Baptista, reporting on the Working Group on Gray-Scale for Cameras, urged that the current RP 27.6 be modified to reflect the scale currently distributed by The Electrical Industrial Association as a reflection chart. Since there is no chart available from manufacturers which conforms to RP 27.6, C. E. Anderson asked the Working Group Chairman to make the modifications for committee consideration.

D. Zwick, reporting for L. DeMarsh on the task of the Working Group on Television Color Cameras, urged that immediate action be taken by the Working Group on Broadcast Color Monitors in order to determine the colorimetry of picture monitors so that the "taking characteristic" of color cameras can also be defined.

No report was available on the Working Group on Camera Lens Mounts for Television in the absence of the Chairman, R. Putman; however, the committee agreed on the continuing need for a Working Group and recommended that the chairman direct the committee's efforts to the study of lens mounts for portable cameras.

The Chairman, D. Zwick, reporting on the tasks of the Working Groups on Telecine Systems and Color Films for Television, reviewed the problems of producing a color reference test film for telecine. He found that there was no support for originating the selected scenes for the test film and recommended that the project be dropped if sustenance is not found.

C. B. B. Wood, the Chairman of the European Broadcasting Union/Group-3, reiterated the need for a color reference test film, and urged that the Working Group continue to prepare an updated version of the current film.

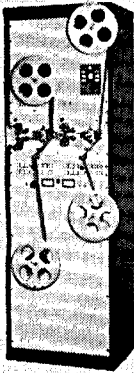
The Engineering Vice-President, R. J. Zavada, requested that the Working Group prepare a "working script" of the required scenes so that the Society can take under consideration the cost in order to accomplish the production of the film.

20 October 1977

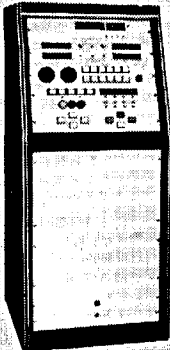
CHARLES E. ANDERSON  
*Chairman Pro Tem*



# MAGNA-TECH ELECTRONIC



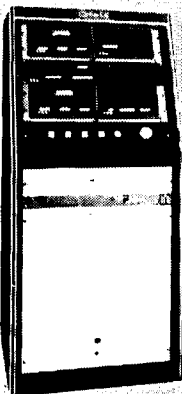
High-Speed Reproducers



EL Console



Prism Projectors



Multi-Lok Console

**MTE, The Leader,** is the world's finest manufacturer of post-production sound recording and projection equipment for:

- Motion picture sound studios
- Advertising agencies
- Educational and instructional film sound facilities
- Video sound sweetening
- Screening rooms

**MTE, The Leader,** was the *first* to introduce:

- Noiseless pick-up insert recording (rock and roll)
- Combination 16, 35, 17.5mm Recorders and Reproducers
- Electronic Looping Systems for dialogue replacement
- High Speed Re-recording Systems
- High Speed Projectors
- "Multi-Lok", the Videotape, Film and ATR Interlock System
- Crystal controlled electronic drive Recorders and Reproducers

**MTE, The Leader,** is winner of two "Academy of Motion Picture Arts and Sciences" awards for Technical Achievement.

**MTE, The Leader,** provides complete studio engineering services and operating personnel training. Our systems engineers have over 30 years experience in all areas of film production and post-production.

**MTE, The Leader,** is *ready* to fulfill your needs in sound and projection equipment from a single transfer recorder to a complete re-recording facility.

The next time you have any film or video needs, discuss them with Magna-Tech first. It pays to come to

**THE LEADER!**

**MAGNA-TECH ELECTRONIC CO., INC.**

630 Ninth Avenue / New York, N.Y. 10036  
Tel. (212) 586-7240 / Telex 126191 / Cables "Magtech"

**Quad-Eight Electronics**  
11929 Vose Street  
North Hollywood, California 91605  
Tel. (213) 764-1516 / Telex 662446

**Magna-Techtronics (Aust.) Pty. Ltd.**  
P.O. Box 150, Crows Nest, NSW 2064, Australia  
Tel. 439-1651/3013  
Telex 24655 / Cables "Magna" Sydney

# Committee on Theatrical Projection Technology

The committee met on 19 October 1977 in Los Angeles, California concurrently with the 119th SMPTE Technical Conference. Within the four years that G. M. Berggren held the Chairmanship of this committee, changes experienced in theater practices included larger reels, xenon illumination, platter systems, mini-theaters and unattended equipment of semi-automatic operation.

The committee was especially concerned with subjects such as carbon arc and xenon illumination sources, English and metric lens specifications, eye adaptation factors in standards, widescreen aspect ratios and other parameters which may insure better projection of our motion pictures.

New standards developed by the committee included one on screen gain determination, a new 16-mm test film which followed the full acceptance of the RP 40 pattern as a valuable 35mm test film, and a low-level limit on screen illumination for theaters.

G. M. Berggren noted that new topics currently being worked on are a 70-mm film pattern, gain screen curvature, proposed

screen illumination measurement techniques for gain screens, theater design guidelines for both viewing ratios and seating/sightlines, film tension limits for projector systems, a jump and weave specification, and a proposed three-perforation frame for 35-mm release prints.

It was noted that the committee now has a membership of approximately forty, including several members outside the United States who have been extremely helpful in providing engineering input from their countries.

The Chairman noted that the latest innovation being studied by the committee is the use of green ambient light in theaters which stemmed from the review of apparent changes in screen illumination on large screens. He then thanked the committee for their cooperation during his four years in office. The Engineering Vice-President, R. J. Zavada, spoke for the committee in expressing his gratitude for the diligence and effective manner in which G. M. Berggren fulfilled his responsibilities, and took the opportunity to introduce J. G. Baer as the next Chairman of this committee.

19 October 1977

G. M. Berggren  
Chairman

# Minutes of the Annual Meeting of Voting Members of the SMPTE Century Plaza Hotel, Los Angeles, 17 October 1977

The meeting was called to order by the Chairman at 2:45 p.m. The Executive Director having in his possession 1063 signed proxies, a quorum was declared to be present in person and by proxy.

The proposed amendments to the Bylaws were read, and the meeting proceeded to vote on each. The text of the amendments and the total votes (floor votes plus proxies) follow:

## 1. REGIONAL REPRESENTATION

### Bylaws Article III, Section 2, Subsec. B. Representation

*Amend to read:* The Regions of the United States and Canada shall be represented on the basis of one Governor for each 500 members, or fraction thereof, of any grade, elected by the voting membership residing in their respective Region. Membership in the Regions shall be determined on the basis of an annual membership audit as of 31 December of each year.

To increase the number of Governors, the Regional membership must exceed the nearest multiple of 500 by at least 25 members for two consecutive years. Conversely, the number of Governors representing a Region will not be reduced unless the membership falls at least 25 members below the determining multiple of 500 for two consecutive years.

Members residing in countries other than the United States of America or Canada may vote for any two nominees for Governor, regardless of Region, who they feel will be best able to serve their interests.

For: 1079

Against: 18

## 2. STAGGERING TERMS OF OFFICE OF FINANCIAL VICE-PRESIDENT AND TREASURER

### Bylaws Article III, Section 1. Number and Term of Office

*Amend to read:* The Board of Governors shall consist of: (1) the elected officers; (2) the Past-President of the Society;

(3) individuals elected by the membership as hereinafter prescribed; (4) not more than five individuals elected by the Board of Governors for a term of one year when in the opinion of the Board such additional members will more adequately represent the interest and activities of the Society's membership.

All members of the Board of Governors shall be members of the Society in either Honorary, Life Fellow, Fellow, Life Member or Active grades.

All Officers and Governors elected by the voting members of the Society shall serve for a term of two years (or until their successors have been duly elected), defined as follows:

January 1 of each odd-numbered year shall begin a term of office for the President, Executive Vice-President, Past-President, Editorial Vice-President, Conference Vice-President, Secretary, Treasurer, and approximately one half of the Governors as specified in Article III, Sec. 2, Subsec. B.

January 1 of each even-numbered year shall begin a term of office for the Engineering Vice-President, Financial Vice-President, Sections Vice-President, Vice-President for Educational Affairs, Vice-President for Photo-instrumentation Affairs, Vice-President for Motion Picture Affairs, Vice-President for Photo-science Affairs, Vice-President for Television Affairs, and the remaining approximate one-half of the Governors as specified in Article III, Sec. 2, Subsec. B.

For: 1087

Against: 10

There being no other business, the Chairman called for a motion to adjourn. A motion was made, seconded and passed, and the Chairman declared the meeting adjourned at 3:10 p.m.

Respectfully submitted,  
DENIS A. COURTNEY  
Executive Director