

Reports of the Engineering and Standardization Committees Activities

The brief reports published, 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, Staff Engineer of the SMPTE at headquarters. The Society welcomes participation by specialists from industry in the work of its Engineering Committee and all those who may be interested in exploring the possibility of active membership on any of the committees should contact A. E. Alden or W. T. Wintringham, 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 through its Engineering Committee members by industry.

Standards Committee

The Committee meeting held on 11 November 1974 in Toronto, Canada was chaired by F. M. Remley, Jr., in the absence of C. E. Anderson, Chairman of the Committee.

The main topic discussed was the approved extension by the Board of Governors of the experimental reorganization of Engineering Committees for one year. Engineering Vice-President W. T. Wintringham asked the advice of the Standards Committee of the inclusion of the VTR Committee as a Broadcast TV Application Working Group, noting that the Chairman of the VTR Committee, N. C. Ritter expressed concern for the following reasons:

(1) The VTR Committee functions well as a systems committee, and subcommittees work benefits from the opportunity for discussion before the full committee.

(2) Helical Recording Subcommittee as well as other subcommittees draw membership from the main committee.

(3) Frequent meetings are held every three months at which time subcommittees meet as well.

(4) Committee has the benefit of counsel of the Staff Engineer at meetings, and this might not be the case if it were to become a Technology Committee of Experts.

It was agreed that the Ad Hoc Committee on Engineering Committees Reorganization would be reactivated to discuss the points raised and to recommend a course of action to the Engineering Vice-President.

Other subjects discussed were as follows:

(1) Safety Standard for slide projectors for application to 16-mm and 8-mm projectors;

(2) Color terms;

(3) 16-mm and 8-mm Test Film Standards and Recommended Practices; and

(4) Five-Year Review of Standards.

F. M. REMLEY, JR.
Chairman Pro Tem

Video Tape Recording Committee

At its 9 November 1973 meeting in Toronto, Canada, the Chairman noted that most of the work of the Committee is accomplished by subcommittees, each headed by a Chairman reporting to the VTR Committee. A brief description of current assignments of active subcommittees is as follows:

(1) Helical recording — prepare for publication a description of each of the current helical formats and in the case of those formats being made by more than one manufacturer write appropriate Standards and Recommended Practices to achieve interchange;

(2) Leaders — update C98.2 and C98.8 on quadruplex leader formats;

(3) Tapes and reels — update C98.1 on quadruplex tape dimensions and tolerances; generate a tutorial paper on the care and handling of videotape; propose standards for 1-in reels; and recommend a standard method for measuring signal/noise on videotape;

(4) Transport geometry — finalize physical dimensions and tolerances of a quadruplex transport necessary for good interchange;

(5) New quadruplex formats — propose the recommended track configuration to achieve stereo audio in the quadruplex format;

(6) Time and control code — propose waveshape dimensions and tolerances necessary for proper use of the proposed time and control code standard;

(7) Quadruplex cartridge/cassette — propose cue track signal that will enable prerecorded interchange of the quad format;

(8) Videodiscs — a newly formed study group to assess the status of the various videodisc developments and ascertain if standards work should be started in this area; and

(9) Editing practices — arrive at possible standardization of decision list format for computer-assisted editing systems.

The main accomplishments and discussions at the meeting were as follows:

(1) discussion on trial reorganization of the SMPTE on the Video Tape Recording Committee;

(2) a status report on each of the subcommittees activities was presented with good progress noted in some areas and in others, little or no progress realized;

(3) finalized the changes desired in RP 16 for the tracking control record on quadruplex video magnetic tape recording;

(4) finalized the redraft of C98.8 and C98.11 audio test tapes which will specify correct operating levels for the cue track on quadruplex recorders;

(5) finalized the redraft of RP 43 and RP 44 video test tapes to reflect the change to the use of a 12½ T pulse;

(6) finalized the proposed 1/2-in reel standard for helical;

(7) liaison between this committee and the IEEE committee studying signal-to-noise measuring techniques is reported in a state of organization; and

(8) organizing a delegation to represent the U.S. at the IEC meeting in Europe in March 1975.

It was agreed that the next meeting of the VTR Committee will be held on 26 January 1975 in San Francisco, Calif. concurrently with the SMPTE Winter Conference.

N. C. RITTER
Chairman

Photo-Instrumentation Committee

The Committee met on 12 November 1974 in Toronto, Canada. A number of points pertinent to the timing systems were discussed, and the Chairman expressed his desire to have more information readily available by the next meeting of the Committee.

A. Earl Quinn made an appeal to the members present to obtain more footage for updating and expanding the film, *Man's Control Over Time*. He stated that to date no slides have been received to add to his collection of about 30 slides for presentation to schools, section meetings, etc.

R. PAINTER
Chairman

Film Dimensions Committee

At its 13 November 1974 meeting in Toronto, Canada, Dr. Frank Brackett noted that further investigation is needed on the study of perforation pitch. He noted that it has been determined that the greater area of concern is related to continuous printer operations wherein intermediate films were used first in the "print on" and later in "print from" position. Dr. Brackett indicated that he would contact various equipment manufacturers to determine the present printing sprocket designs in this area, and report his findings to the committee.

The problem of the ever increasing importance of the lack of uniformity for a reference point for the photographic image that is carried through all operations was discussed. A suggestion made by R. J. Zavada to write a tutorial paper on the subject was not thought to be a Film Dimensions problem, and the Chairman of the committee recommended that the subject be brought to the attention of the 16-mm and 8-mm Engineering Committee.

R. DUPREE
Chairman

K. B. BENSON
Chairman

Color Technology Committee

The Committee met 14 November 1974 to hear and discuss the status of the efforts of Working Groups chaired by its members and to consider other possible areas of service to the Society.

A. D. Bruno reported that his Group has completed its specification of a color control negative for insertion in leaders and is distributing samples to laboratories for trial. This Group reports to the Laboratory Practice Committee.

Daan Zwick reported that his Group, under the Television Application Chairman, is preparing a storyboard for a new color reference film for telecine checking.

Other items for general discussion were as follows:

(1) the need for better specification of and means for measuring the color of illumination as reflected by the theater screens;

(2) adoption of an exposure index for color negative films; and

(3) an inquiry into the need for color correcting filters for CS1 and RMI luminances to enable mixed light source application.

F. DETMERS
Chairman

Laboratory Practice Committee

The Committee met on 12 November 1974 in Toronto, Canada. The Chairman reported that editorial changes will be made on both LP 6.31, Step Reduction Printing 35-mm Images to 16-mm Prints and Duplicate Negatives, 6.32, Optical Step Printing 35-mm Images from Regular 16-mm Images, LP 6.34, Edge Identification of Motion-Picture Raw Stock Containers is to be circulated to the Committee shortly.

A. D. Bruno reported that work on materials and procedures for laboratory exchange of color material has been completed; however, he did note that the initial tests made in Hollywood have proven successful.

Dr. Brackett called attention to the Corning 9780 filter material used in densitometers and several of the "status" filters used in sensitometric evaluation of color films exhibits a tendency to "chalk" or whiten with age effluence thus changing the transmission characteristic markedly. This is mentioned in the manufacturers documentation, but often it is overlooked and users should examine their filters periodically to determine their condition.

J. HALL
Chairman

G. GORDON
Chairman

JCIC Ad Hoc Committee on Color Television Study (AHCCTS)

Since 1968, this Committee has been actively engaged in studying causes of variability in the color television signal as viewed on the home receiver, and is recommending appropriate corrective actions by the JCIC (Joint Committee for Inter-Society Coordination) member organizations.

At its meeting on 12 November 1974, progress was reviewed in the study of television colorimetry as regards characteristics of standard display devices, and specifications of reference cameras for both live and telecine applications. Regarding the first item, more detailed background may be found in the January 1974 *Journal of the SMPTE* and in Paper No. 19 presented at the 116th SMPTE Technical Conference. This paper by L. E. DeMarsh and C. B. Neal reflects on joint studies by Eastman Kodak and the Sylvania Corp. In addition, future activities of the Committee relative to expediting action on recommendations made by the AHCCTS were discussed.

16-mm and 8-mm Committee

The Committee met on 13 November 1974 in Toronto. Two items of more than routine interest were discussed. The first, concerned the desirability of pursuing the study of industry needs for standards concerning so-called super 16. Mr. Zavada, Chairman of the PH22 Committee pointed out that there is a need for action to establish a U.S. position as a guide for discussions on international proposals. It was agreed to complete the work on Dimensions and Location of the Camera Aperture Image. It was also agreed that the report of the subcommittee studying other aspects of super 16 be submitted to the Engineering Vice-President with the recommendation that it be published in the *SMPTE Journal* as a status report and guide for those interested in this format.

The second topic, which evoked prolonged discussions was the policy or philosophy appropriate to handling the several proposals for enclosures for 8-mm film for projection. Mr. McConnell, Chairman of ISO/TC 36 Preparatory Working Group-5, Spools, Shafts and Magazines reported that this Group was delaying, if not postponing indefinitely, work on this subject. After some discussion, it was decided that the 16-mm and 8-mm Committee recommend to the Standards Committee that the present proposals covering the super-8 projection cassettes as proposed by Eastman Kodak, Bell & Howell, Fairchild and Philips be held in abeyance. An ad hoc committee is to be appointed to explore other possible means of meeting the needs of the whole industry, particularly the users. International cooperation via Preparatory Working Group-5 is to be solicited. Mr. Gordon, the Chairman of the 16-mm 8-mm Committee will welcome suggestions and comments concerning the membership and the items of interest for this ad hoc committee.

Eleven existing standards were reaffirmed or revised slightly and forwarded for further processing. Messrs. Farmer and Wyman reported on PH7 activities urging that the long delayed revision of the Non-Theatrical Equipment report be broken down into a number of sections so that each can be handled more easily. H. Farmer agreed to prepare a proposed breakdown and suggested scope for the individual sections which will be circulated to the Committee for approval.

Television Technology Committee

Taking advantage of 116th SMPTE Technical Conference, J. Flaherty, Chairman of the Committee called its first meeting since the beginning of the trial reorganization of the SMPTE Engineering Program was put into effect in January 1974. This Committee was one of two which was reorganized, the Color Committee being the second, with all of its subcommittees now functioning as Working Groups. A complete report on the reorganization by C. E. Anderson was published in the August 1974 *Journal of the SMPTE*.

Mr. Flaherty opened the meeting with a thorough review of the new procedures, an area which has proven to present problems. He reported that due to these questions and the very short trial period, the initial one year trial has been extended to a second year with an additional plan to bring the Video Tape Recording Committee into the experiment.

It was noted that as the Technology Committee, the group no longer functioned as a "live" committee, having a "Standards" responsibility, but rather as a "Staff" committee comprised of a roster of television experts who are assigned to the various Working Groups as required. In addition to Working Groups, several Study Groups have been formed to study the developments in new technologies such as digital television and video disc recording.

Mr. Wintringham, the SMPTE Engineering Vice-President, reviewed the current membership in the Television Technology Committee, indicating the need to expand the base of the membership to include many more qualified experts so that the work of the Working Groups can be spread more appropriately.

C. Ginsberg, Chairman of the Study Group on Video Disc, reported that an appropriate charge such as, "Scope-of-Work" and a roster of membership is being developed, and hopefully, active work could be underway by the end of 1974. Mr. Ginsberg plans to hold a meeting of the Study Group in San Francisco, Calif. concurrently with the SMPTE Winter Television Conference in January 1975.

Mr. Remley, the Broadcast Television Application Chairman reviewed the work of the four Working Groups under his jurisdiction.

The Working Group, Studio/Field Camera Colorimetry, chaired by L. E. DeMarsh, held several meetings and dealt primarily with the problem of defining optimum television monitor color picture display of characteristics, considered a prerequisite to reaching conclusions on camera colorimetry. An Interim Draft RP is in process calling for studio color monitors to be adjusted using standard NTSC color bars with no compensating matrices used to accommodate kinescope phosphor differences between present-day phosphors and FCC-specified NTSC phosphors. Work is continuing on the study of the possible use of corrective phosphor-compensating matrices. However, the Proposed RP is felt to be necessary to avoid confusion in the industry during the time that the studies are being carried out.

The Working Group on Telecine Colorimetry, chaired by Mr. Zwick has prepared a test pattern intended to produce an approximation of a color-bar vector display when televised in a telecine camera.

The Working Group on Television Reference Film, chaired by Mr. Zwick is continuing to study the need for an interest in a telecine test film. This film, if developed, would complement the present SMPTE Color Reference Film.

A Draft Recommended Practice which has been forwarded to the SMPTE Standards Committee deals with setting chromaticity and luminance of color television picture monitors using shadow-mask kinescopes.

Mr. Benson, the Cable Television Application Chairman, reviewing the work currently under the Helical Recording Subcommittee reported that the group is collecting factual data on the various helical formats and intends to publish a status re-

port on the various systems in use. The Subcommittee is scheduled to meet on 4 December 1974.

At the close of the meeting, Mr. Flaherty reiterated the need for new members and requested that the current members make every effort to enlist qualified television engineers for the Committee.

The next meeting of the Committee is scheduled to be held in San Francisco, Calif. concurrently with the SMPTE Winter Television Conference in January 1975.

12 November 1974

J. FLAHERTY
Chairman

Sound Committee

The Sound Engineering Committee met in two sessions and discussed 26 items. Magnetic test film standards related to 8-mm Type R will be discontinued. No test films have been available in this format and there appears to be no need for such films.

All existing test film standards will be converted to recommended practices.

The Committee deliberated at length concerning the long standing practice of displacing sound and pictures by 20 frames rather than 21 frames as specified in ANSI standards. It was decided to retain the 21-frame standard because existing projections do not allow loop lengths of 19 frames which results in out-of-sync sound within the central portion of the average theater.

The perforation pitch of 35-mm full coat magnetic films will not be standardized, but recommended practices will retain the pitch specification as standards are converted to recommended practices.

A number of soundtrack standards have been referenced to the perforated edge to reflect actual practice. Practical sound test films may require the low shrinkage characteristic of polyester-base films. Four 35-mm buzz track films and four flutter test films will be made and evaluated to ensure that the performance of such films is adequate to permit this desirable dimensional specification.

The Ad Hoc Committee for 8-mm Type S Photographic Sound Receptor Response was asked to determine the advantages and disadvantages of specifying this response and to report at the next meeting of the Committee.

R. LOVICK
Chairman

Film Projection Practice Committee

The rapid change of projection equipment of the past few years has increased the work load of the FPPC in areas of reels, reel spindles, film damage, and sprocket/perforation studies. This has been entirely confined to 35-mm use. The continuing revisions of the 35-mm sprocket standard has now reached compatibility with the ISO documents, and minor comments are leading to the final document, which should be complete before the end of 1974.

Illumination standards are being reviewed as a group, with the 16-mm review room spec completed after earlier revision, to be released for publication. The 35-mm specs, both theater and review room, are being considered for revision together and release in 1975, probably as a consolidated standard. Other screen illumination specs will be combined into these as soon as possible. The color measurement of the "white" light is being investigated, in joint effort with the Color Technology Committee. A study of the projected contrast factors is being started.

Conference guidelines; lens mounts, 70-mm test patterns and

leaders were further refined. A thorough review of the 35-mm film reels and the immediate revision of PH22.4 are planned, with the creation of two or three new standards for special purpose shipping or large-capacity reels. A revision to the larger reel spinning is incorporated in this program. Revision of the 35/70 reels standard has been balloted, and final modifications are underway.

The further review of compatibility between sprocket teeth and perforations, indicates that earlier tests regarding the gate alignment and the intermittent sprocket were satisfactory but incomplete. Further tests for upper and lower sprockets, in regard to a proposed film tension practice are planned. Discussion and test inputs seem to indicate that perhaps the increased film tension, and misalignment away from the gate and intermittent area, may be the main cause for film damage to the perforation area of the film. Plans to evaluate this are underway, to indicate the next area of effort in this continuing study.

Review of the non-anamorphic 35-mm format have led to a proposed modification of the existing standard, to permit use of a release print "matte," probably limited to 1.66 ratio space. Surveys are planned to determine the typical practice for the different non-anamorphic formats, as regards to existing theater equipment installations. Which ratios are most common, how near are theater formats to existing standards; how many formats can be used in various theaters?

The five-year rulings by ANSI, regarding standards which are expiring, have been given priority attention. A survey of Committee responsibility for standards, films, and RPs has been made, and distributed. Cooperation from other organizations, such as NATO, AMPTP, and TEA, is recognized, and appreciated.

Proposal for a viewing angle practice, has been made, plus review of illumination requirements on large screen situations. The Film Projection Practices Committee is considering the reorganization concept, however, the transition is not planned for 1975.

15 November 1974

G. M. BERGGREN
Chairman

ISO/TC 36 Preparatory Working Group-3

Preparatory Working Group-3, Sound Recording and Reproducing of ISO Technical Committee 36 on Cinematography held a three-session meeting concurrently with the 116th SMPTE Technical Conference in Toronto, Canada. Participating in the meeting were specialists from Canada, Denmark, the United Kingdom, the USA and the USSR.

The Working Group under the Chairmanship of the specialist from the United Kingdom, A. W. Lumkin of E. M. I. Elstree Studios, considered a nine-point agenda and arrived at agreements on the following subjects:

(1) specification for Six-Track Magnetic Sound Records on 70-mm Motion-Picture Release Prints to be circulated as a Draft International Standard; (2) specifications for picture images and photographic sound record on 35-mm motion-picture release prints to be circulated as a Draft International Standard; (3) a standard electro-acoustic response of motion-picture control rooms and indoor theaters to be circulated as a Draft International Standard; (4) dimensions for a photographic sound record on 8-mm Type S motion-picture film, to be circulated as an ISO Draft Proposal; (5) a standard method of measuring the modulation factor of photographic type sound level test films, to be circulated as an ISO Draft Proposal; (6) the preparation of proposals for specifications covering photographic sound test films; (7) the preparation of proposals for specification covering magnetic sound test films; and (8) the development for a time code for use with motion-picture sound recording.

The work noted was assigned to Preparatory Working Group-3 by Technical Committee 36 at its recent Plenary Meeting held at Colonial Williamsburg, Va. in December 1973. The next Plenary Meeting of ISO/TC 36 is being planned for the Spring of 1976 to be held in Paris, France.

A. W. LUMKIN
Chairman

standards and recommended practices

Approved American National Standards

On 19 August 1974, the American National Standards Institute approved three American National Standards.

PH22.93-1974, Dimensions for 35 mm Motion-Picture Film Perforated BH; PH22.102-1974, Dimensions for 35 mm Motion-Picture Film, CS-1870; and PH22.139-1974, Dimensions for 35 mm Motion-Picture Film Perforated KS, implement agreement to consolidate standards that are similar in format and dimensioning. PH22.93-1974 combines the specifications of PH22.93 and PH22.34 applicable to 35 mm film having a BH perforation and a perforation pitch of either 0.1870 or 0.1866

inch. PH22.139-1974 consolidates the revision of PH22.139 and PH22.36 for the same reasons. The revisions do not reflect a change in specifications.

Inasmuch as compliance with American National Standards is purely voluntary, standards will become truly effective when broad publicity is given to their existence. ANSI and SMPTE would appreciate any personal influence to promote the use of these standards where such action is appropriate. Copies of the standards may be obtained for a nominal fee from the American National Standards Institute, 1430 Broadway, New York, NY 10018. — Alex E. Alden, *Staff Engineer*