engineering activities

This report presents a résumé of the major aspects of the engineering committee meetings held during the Society's 79th Convention in New York City, April 29–May 4, 1956.

Film Dimensions

Three proposed standards had been under consideration and ballot by this committee prior to the meeting:

Dimensions for 32mm on 35mm Negative Motion-Picture Film (Revision of PH22.73-1951)

Dimensions for 16mm Short-Pitch Film With Perforations Along Two Edges

Dimensions for 16mm Short-Pitch Film With Perforations Along One Edge

Much time was spent reviewing questions raised in the course of the balloting. In the end, these questions were resolved and the three proposals were approved for further processing as American Standards.

Action was taken to bring Z22.31-1946 up to date. This standard specifies that all 8mm, 16mm, 32mm film shall be safety film and comply with Z38.3.1-1943, American Standard Definition of Safety Photographic Film. The proposed revision adds 35mm film to the previous list and substitutes PH1.25-1956, Definition of Safety Photographic Film, for Z38.3.1-1943.

The last few years have witnessed the introduction of new motion-picture film differing from existing film in perforation and pitch. In developing standards for these films a vexing problem has arisen with respect to the titles. This problem was compounded by the inadequacy of many of the titles of existing film standards where film titled as positive or negative was not restricted to either one or the other use. At the previous meeting, Mr. Brandsma had been assigned the task of preparing a consistent set of titles for all film dimension standards. He presented such a set of titles at this meeting and this was approved, with minor modifications, for ballot of the entire committee.

Film Projection Practice

The three proposed aperture standards for anamorphic prints were reviewed. It was noted that production of Superscope prints for the square aperture have been discontinued. The committee therefore voted to discontinue the processing of the related standard, PH22.105, Projector Aperture for 35mm Superscope Prints With Photographic Sound.

Consideration was given to the possibility of revising the two standards on screens and mounting frames: Z22.29-1948, Theater Projection Screens; and Z22.78-1950, Mounting Frames for Theater Projection Screens. However, this was considered neither feasible nor desirable at this time and steps were taken to initiate the withdrawal of these two outdated standards.

Probably of greatest interest was the discussion on the question of reducing the temperature of the film at the projector aperture. The existing subcommittee on temperature control was reorganized with H. E. Behrens as chairman and with its scope expanded to cover all aspects of the question.

Laboratory Practice

Revision of the laboratory nomenclature standard, Z22.56-1947, has been under committee consideration for several years. At this meeting, a brief report was presented which indicated that distinct progress has been made in efforts to improve this standard and bring it up to date.

Most of the committee's time was spent in reviewing Proposed American Standard PH22.89, Printer Light Change Cueing of 16mm Negatives, and the comments resulting from the letter ballot on the second draft of this proposal. The details of the third draft were spelled out, specification by specification, in an effort to work out an acceptable industry-wide standard and a new draft was approved for letter ballot of the entire committee.

Screen Brightness

The Motion Picture Research Council submitted a proposal specifying the bright-

ness of directional screens which merited appreciable discussion and which is to be submitted to the entire committee for more detailed study.

Several months prior to the meeting, the committee had been canvassed as to their views on the Draft ISO Proposal, Screen Luminance of White Matte Screens, and whether American Standard PH22.39, Screen Brightness for 35mm Motion Pictures, should be revised to be in accord with the ISO proposal. The replies, for the most part affirmative, were analyzed at the meeting and a decision was taken to proceed with a revision of PH22.39-1953 to bring it in line with the international proposal.

The chairman initiated a discussion on the philosophy of screen brightness standardization to develop a needed long-range program of work. The aim was to outline the areas requiring industry-wide standardization and to determine whether standards should be set for the review room, for the theater or possibly separate standards for each. A task force is to be appointed to propose as many drafts as can be established now and to outline which specific problems must be solved by further engineering work and research.

16 & 8 mm

This meeting opened with a review of the status of the active projects:

PH22.7, 16mm Motion-Picture Camera Image

PH22.19, 8mm Motion-Picture Camera Image

Comments on the last draft of these two standards had indicated the need for new drafts. These were submitted by the chairman, reviewed and approved with modifications for letter ballot of the entire committee.

PH22.8, Projected Image Area of 16mm Motion-Picture Film

PH22.20, Projected Image Area of 8mm Motion-Picture Film

PH22.107, Film Spools for 8mm Motion-Picture Cameras

These three standards were published in the *Journal* for trial and comment, the first two in May 1956 and the third in January 1956. A question was raised respecting the values of A_1 and B_1 of PH22.107, whether they should be $38\frac{1}{2}°$ instead of $39\frac{1}{2}°$ as published. This question is now under study and should be resolved shortly.

PH22.79-1950, 16mm Sound Projector Test Film

The reaffirmation of this standard is now being considered by ASA Sectional Committee PH22.

The two 16mm snake-track test film standards, Z22.80-1950 and Z22.81-1950, had been assigned about a year ago to a subcommittee for study and preparation of new drafts. In view of the reorganization of the Sound Committee (reported below) it was decided to shift this project to the Sound Committee.

Two standards and a Recommended Practice came up for review in accord with the periodic five-year review procedure:

PH22.74-1951, Zero Point for Focusing Scales on 16mm and 8mm Motion-Picture Cameras

PH22.76-1951, Mounting Threads and Flange Focal Distances for Lenses on 16mm and 8mm Motion-Picture Cameras

Recommendations for 16mm and 8mm Sprocket Design

It was decided to reaffirm the first, revise the second in form and content and to revise the last in form only.

Work had been initiated in 1948 on a standard for 16mm camera spools but this had been tabled due to the press of more urgent standards activity. This project was now placed in an active status and the basis for a new draft was outlined.

Preparation of a 16mm projection practice booklet for the layman has been a long standing committee objective. The difficulties in advancing this project were reviewed and new plans were made to produce this valuable booklet.

In addition, the committee reviewed questions on special 16mm reels, 16mm screen brightness, a 16mm CinemaScope test film and international standards activities.

Sound

Announcement was made of a new organizational structure for all Society sound activities. Heretofore, the responsibility for different sound projects had been divided among several committees: 16 & 8mm photographic sound — 16 & 8mm Committee, 16mm and 8mm magnetic sound — Magnetic Recording Subcommittee, 35mm photographic sound — Sound Committee, 35 mm magnetic sound — either the Sound Committee or the Magnetic Subcommitee. Review of this chaotic condition by the Engineering Vice-President and chairmen of the Sound, Magnetic Recording and 16 & 8mm Committees led to the decision to dissolve the Magnetic Recording Subcommittee and to make the Sound Committee responsible for all sound activity regardless of associated film width or nature of recording and reproducing media. The committee has been enlarged so that it will have the forces to handle its expanded program.

PH22.51, Intermodulation Tests, 16mm Variable-Density Photographic Sound, was published in the January 1956 *Journal* for trial and comment. The committee reviewed a criticism that had been received and deemed it of sufficient validity to warrant referring this standard back to the Sound Committee for resolution of the questions raised.

A new proposal for four magnetic sound records on fully-coated 35mm film, akin to an international proposal in process, was reviewed and approved for letter ballot of the entire committee.

A proposed standard for four magnetic sound records on anamorphic prints has been under consideration for over a year. The only question holding up further processing of this standard was the width of the #4 track, 41 mils vs. the initial proposal of 29 mils. At this point, it was decided to go ahead with the 41 mils and to circulate a new draft for letter ballot of the entire committee.

Lastly, questions relating to international standardization were reviewed. The U.S. delegate on Working Group G of ISO/TC

36 presented his reasons for wishing to cast a negative vote on a proposal for 35 mm prints with one optical and two magnetic sound tracks. His position was supported fully by the committee.

Magnetic Recording

The major question facing the subcommittee was the picture-sound separation in 16mm magnetic sound projectors. At an open forum prior to this meeting RCA had announced their acceptance of the 28-frame separation proposal. This position was reaffirmed at the meeting and it was unanimously voted to submit this proposal to the Sound Committee for further processing as an American Standard.

American Standard PH22.87-1953, 100-Mil Magnetic Coating on 16mm Film, Perforated One Edge, was reviewed and it was decided to further revise this standard by adding a balance stripe to the diagram with a notation that use of a balance stripe is optional.

Note was taken of the development and production of a magnetic signal level test film. The discussion centered on the establishment of a shorthand term for simplifying reference to the level of the recorded signal.

There was a very lengthy discussion concerning the value of a standard magnetic sound reproduce characteristic. This was questioned on the ground that this characteristic refers to an idealized magnetic head and thus omits the major variable, the differences resulting from the reproduce head itself. In the end, it was concluded that a standard reproduce characteristic would have significance only if used in conjunction with a standard multifrequency test film. It was felt that inasmuch as the Society has such a test film as well as a magnetic level test film, it is now possible to produce magnetic sound records which are completely interchangeable in differing equipments.

A 16mm magnetic flutter test film and a proposed standard for this test film had been under consideration for some time but had been held in abeyance because of questions concerning the effect of shrinkage and film compliance. At this point, the committee recommended that the Society proceed with the production of a sample test film which it was felt would provide the most effective tool for determining the significance of these factors.

The chairman reported the reorganization of the Sound Committee as noted above, that the subcommittee was being dissolved and that therefore this was its last meeting. The many accomplishments were reviewed and appreciation was expressed for the fine cooperative spirit of all the members manifested through the life of the subcommittee. In turn, the members applauded the leadership supplied by their chairman, E. W. D'Arcy.

Television

At the previous meeting work had been initiated on a standard for 16mm television projectors for use with the vidicon tube. Progress on this work was reviewed and plans were made for furthering this activity.

The problem of centering slides in a projector was analyzed. At this time there is no standard specifying a reference edge for indexing slides. A task force was appointed to study this question and to draft a recommended practice.

Comments invited on the Society's color television test film and slides were, in the main, very favorable. The sole problem has been adequate control of the gray scale and correction of this is now under way.

Methods of insuring proper color balance for different film sources of broadcast material were considered, including the possibility of utilizing in the leader a characteristic scene from the feature show or spot announcement. The consensus was that there is insufficient experience at this point to develop any specific proposal and a task force was appointed to study this question.

Note was taken of the developments in magnetic video recording. The early establishment of a coordinating center was considered advisable and it was felt that this committee would be admirably suited for this role. This question has to be decided at a higher level and in consultation with the other organizations in the field.—*Henry Kogel*, Staff Engineer.

Membership Certificates (Active and Associate members only). Attractive hand-engrossed certificates, suitable for framing for display in offices or homes, may be obtained by writing to Society headquarters, at 55 West 42d St., New York 36, Price: $2.50.