

The 123rd SMPTE Technical Conference and Equipment Exhibit

October 25-30, 1981

Century Plaza Hotel, Los Angeles, Calif.

Seventy-three companies have signed up for exhibit space within a month after the space became available.

The SMPTE exhibit is set for the Century Plaza Hotel in Los Angeles, October 27-29, in conjunction with the SMPTE Technical Conference that runs from October 25-30.

The rate at which exhibit reservations were received is faster than any previous SMPTE conference. Last year's New York exhibit was completely sold out shortly after the cutoff date. A sellout is expected this year as well.

In addition to the exhibit, the conference will feature five days of technical sessions on the technical aspects of motion pictures and television. There will also be an awards luncheon, banquet, a daily coffee club and a complete program for spouses.

Information about the conference and exhibit will be mailed to members during the summer. Additional information on the conference and exhibit will appear in the August *JOURNAL*. Don't miss the September *JOURNAL* for the complete advance program and directory of exhibitors.

STANDARDS AND RECOMMENDED PRACTICES

Approved American National Standards

Revisions of three American National Standards were recently approved by the American National Standards Institute: ANSI PH22.10-1980, Specifications for Projector Usage of 16-mm Motion-Picture Film; ANSI PH22.31M-1980, Specifications for Motion-Picture Safety Film; and ANSI V98.3-1980, Frequency Response and Operating Level of Recorders and Reproducers for Audio 1 Record for 2-in Quadruplex Video Magnetic Tape Operating at 15 and 7.5 in/s. Copies of the standards may be obtained for a nominal fee from the American National Standards Institute, 1430 Broadway, New York, NY 10018.

Reaffirmed American National Standards

The American National Standards Institute approved reaffirmation of two American National Standards on April 9, 1981: ANSI PH22.37-1975 (R1981), Dimensions of Raw Stock Cores for Motion-Picture Films; and ANSI PH22.59-1974 (R1981), Dimensions of 35-mm Motion-Picture Camera Aperture Images.

Proposed SMPTE Engineering Guidelines

Two Proposed SMPTE Engineering Guidelines are published here for a trial period: EG 5, Projected Image Quality of 70-

mm, 35-mm and 16-mm Motion-Picture Projection Systems; and EG 6, Use of 2-in Tape on Cartridge/Cassette Spools for Quadruplex Video Tape Recorders. Comments should be addressed to Alex E. Alden at Society Headquarters prior to September 1, 1981. If no adverse criticism is received, the proposals will be submitted to the Society's Board of Governors for approval.

Approved International Standard

The International Organization for Standardization (ISO) recently approved an International Standard, the technical content of which is published here for your information. ISO 6027-1980, Cinematography — Projection Reels for 8-mm Type S Motion-Picture Film for Use with Projection Cassettes — Dimensions and Specifications, has no comparable American National Standard although reels are manufactured to the specifications in the U.S.

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Alex E. Alden, Manager of Engineering Services

American National Standard specifications for projector usage of 16-mm motion-picture film

Approved December 22, 1980
Secretariat: Society of Motion Picture and Television Engineers

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1. Scope

This standard specifies the position of the emulsion and the rate of projection for 16-mm motion-picture film perforated one or two edges, and the projector thread-up distance between sound and picture for 16-mm motion-picture film with sound.

2. Emulsion Position

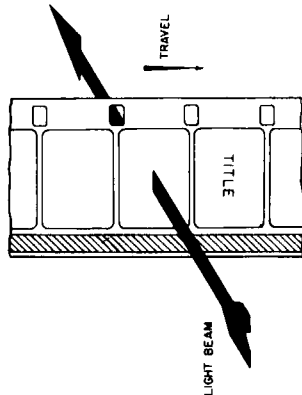
For original reversal film, the emulsion side shall be toward the projection lens. For prints, the emulsion position is dependent upon the process of preparation and either emulsion to light source or emulsion to projection lens orientation may be encountered. (See Note.) The actual emulsion position should be indicated on the leader and film container by notation or diagram.

3. Projection Rate

3.1 The rate of projection for film perforated two edges not used for sound shall normally be 18 or 24 frames per second, depending upon its intended use. Amateur films are usually photographed at 18 frames per second and should be projected at that rate. Professional films may be photographed at any rate from time lapse to high speed but are generally intended for projection at 24 frames per second, except when special study is desired.

3.2 The rate of projection for film containing a sound record shall be 24 frames per second for both photographic and magnetic sound, except for films photographed at 18 frames per second

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Film as Seen from Projector
Light Source Looking toward Lens

having post-process recorded magnetic sound which should be projected at 18 frames per second.

4. Relationship Between Sound and Picture

The projection thread-up path for motion-picture films containing a sound record, regardless of projection rate, shall place the sound-scanning point ahead (in the direction of film travel) of the center of the picture being projected. Counting the frame in the projector picture aperture as zero, the sound-scanning point shall be opposite the center of the 26th frame for photographic sound or the 28th frame for magnetic sound to accommodate film with sound, as specified in

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American National Standard Dimensions of Photographic Sound Records on 16-mm Motion-Picture Prints, ANSI PH22.41-1975; and American National Standard Position, Dimensions and Reproducing Speed of 100-Mil Magnetic Sound Record on 16-mm Motion-Picture Film, ANSI PH22.112-1977. If there is a significant distance between the average observer and the loudspeaker when the sound record is reproduced, the distance from the center of the projected aperture to the sound-scanning point may need to be shortened in the projector thread-up to bring the picture and sound into synchronization for the average observer (because of the slower rate of travel of sound compared to that of light). If the average loudspeaker-to-audience distance is

greater than 50 ft (15 m), the projector thread-up distance between projected picture and sound scan should be shortened by one frame for each nominal 50 ft of distance from loudspeaker to average audience.

NOTE: When a relatively small number of prints is required, contact prints are often made from 16-mm original materials, resulting in the emulsion position toward the light source. The majority of 16-mm release prints are printed by contact from a 16-mm intermediate or by reduction from a 35-mm intermediate in order to protect the originals. The resulting prints generally have the emulsion side toward the projection lens. This permits intercutting of prints and originals without requiring a change of focus during projection.

PH22.10-1980

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American National Standard specifications for motion-picture safety film

Approved December 22, 1980
Secretariat: Society of Motion Picture and Television Engineers

1. Scope

This standard defines and specifies safety film for motion-picture use.

2. Definition

The term safety film as used in this standard includes all perforated film used in the motion-picture industry. Specifically included are leaders, including unperforated leaders; sensitized stock based on the silver halide, dye transfer, vesicular, or other image-producing systems; raw and processed stock; and magnetically coated perforated film.

3. Specification

3.1 Safety film, as applied to the motion-picture industry, shall comply with American National Standard Specifications for Safety Photographic Film, ANSI PH1.25-1976.

3.2 All films intended for the motion-picture industry shall be manufactured in compliance with ANSI PH1.25-1976.

3.3 ANSI PH1.25-1976 includes in the nitrogen analysis not only the support film but also the emulsion and any other applied coating or treatment such as protective lacquers.

NOTE: 35-mm nitrate motion-picture film is no longer manufactured in the United States. However, there are existing nitrate films still in use or in storage and there are others existing or of future manufacture which may be imported. There is no intent in this standard to limit the use of such 35-mm nitrate films but, by designating them as nonstandard, it is intended to emphasize that the hazard involved in their handling requires the observance of adequate precautions and safeguards. (See National Fire Protection Association Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film, NFPA 40-1974.)

Appendix

(The Appendix is not a part of this American National Standard, but is included for information purposes only.)

Because of its attendant fire hazards, nitrate film has never been manufactured in the United States in 16-mm and 8-mm widths since these are traditionally for amateur and nontheatrical use. However, small quantities of nitrate film may be in existence as a result of foreign import or from slitting operations of certain intermediate laboratory processing films.

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American National Standard frequency response and operating level of recorders and reproducers for audio 1 record for 2-in quadruplex video magnetic tape operating at 15 and 7.5 in/s

Approved December 5, 1980
Secretariat: Society of Motion Picture and Television Engineers

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1. Scope

This standard specifies the frequency response and operating level for recorders and reproducers for audio 1 record for 2-in quadruplex video magnetic tape recording at 15 and 7.5 in/s (381 and 190.5 mm/s), as defined in American National Standard Dimensions of Video, Audio and Tracking Control Records on 2-in Video Magnetic Tape Quadruplex Recorded at 15 and 7.5 in/s, ANSI V98.6-1981. It also specifies the field method of calibration of recorders and reproducers, utilizing the test tapes, as defined in American National Standard Specifications for an Audio Operating Level and Multifrequency Test Tape for Quadruplex Video Magnetic Tape Recorders Operating at 15 in/s (381 mm/s), ANSIC98.8-1977; and American National Standard Specifications for an Audio Operating Level and Multifrequency Test Tape for Quadruplex Video Magnetic Tape Recorders Operating at 7.5 in/s (190.5 mm/s), ANSIC98.11-1977.

2. Operating Level

2.1 Recording and Reproducing Level Indicator. The audio recording and reproducing levels of a video magnetic tape recorder shall be monitored and adjusted with a standard volume indicator (vu meter), as specified in American National Standard Volume Measurements of Electrical

Speech and Program Waves, ANSI/IEEE Std 152-1953 (R1976).

2.2 Recorder Operating Level. When a tape record is recorded from a sinusoidal voltage having a frequency of 1000 Hz, such that the rms short circuit tape flux per unit track width on the record is 110 ± 3 nanowebers per meter of track width, the recording volume indicator shall be adjusted to deflect to its reference level (0 db) scale mark.

2.3 Reproducer Operating Level. When a tape record having an rms sinusoidal flux per width of 110 nWb/m and a frequency of 1000 Hz is reproduced, the reproducing volume indicator shall deflect to its reference level (0 db) scale mark.

3. Frequency Response

3.1 Recorder Flux/Frequency Response. When a tape record is recorded from a constant voltage level applied to the input terminals of the recording system, the short circuit tape flux level on the record versus frequency, $L_v(f)$, shall be as given by the following equation:

$$L_v(f) \text{ re } 110 \text{ nWb/m} = 0.2 + 10 \log_{10} \left\{ \frac{1 + (F_1/f)^2}{1 + (f/F_2)^2} \right\} \text{ [dB]}$$

where f is the frequency at which the response is being computed; F_1 is the low-frequency transition frequency, 80 Hz; and F_2 is the high-frequency transition frequency, 4500 Hz. A graph of this equation is shown in the figure.

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