

Standards Committee Report

Under the chairmanship of A. Earl Quinn, Vice-President for Photoinstrumentation Affairs, an ad hoc committee was formed to review the terms and definitions presented in the "Photoinstrumentation Glossary" published in the June 1969 *Journal of the SMPTE*. Originally developed by the Glossary Subcommittee of the SMPTE Photoinstrumentation Engineering Committee, the glossary defined those terms generally used in the photoinstrumentation discipline for which there were no accepted definitions. This glossary reflects the addition of one new term (image-converter camera). Reprints are available free of charge. — Alex E. Alden, *Manager, Engineering Services*.

Photoinstrumentation Glossary

cinematography: (a) photography in which a series of photographs of uniform size is taken so that the motions of the subject can be recreated by rapid sequential viewing. (b) the entire complex of activities involved in the staging, direction, photography, editing and presentation of motion pictures. (c) motion-picture photography.

continuous access: a photographic system which records an image continuously during its exposure cycle with no blind periods.

continuous writing: describing a photographic system which, when running, is always able to accept light and to make an exposure; usually used in reference to rotating-mirror cameras with this capability, to distinguish them from those with a significant blind period during some part of a mirror revolution.

direct shadowgraph: a shadowgraph wherein no image-forming optical elements are employed, and a silhouette image of the view field is cast directly upon either a photosensitive material or a viewing screen. (See shadowgraph.)

drum camera: a photographic device utilizing the inside or outside of a rotating drum to support and move the photosensitive recording medium through the focal plane of a lens.

electronic flash: a device which, upon command, produces a pulse of luminous energy caused by a discharge of electrical energy through a gas. The term usually implies the use of a flashtube and associated power source and trigger circuit.

flashtube: a sealed, transparent tube with two or more electrodes filled with a suitable gas or vapor such as xenon or mercuric vapor, at less than half an atmosphere of pressure through which an electrical discharge is passed to obtain a pulse of luminous energy.

focusing shadowgraph: a shadowgraph wherein focusing optical elements are interposed between the object field and

the photosensitive material, the viewing screen, or the viewing optical system. (See shadowgraph.)

framing camera: a camera which records sequential photographs of uniform format. The dimensions of the format are determined by the size of the frame.

guided spark: an electrical discharge between two electrodes whose path is guided or constrained by the presence of a dielectric material or gas jet.

high-speed photography: photography in which picture-taking rates range from 100 to 10,000 frames per second, writing rates range from 10^{-3} to 10^{-1} mm per microsecond, or exposure times range from 10^{-5} to 10^{-3} seconds.

image-converter camera: a camera that incorporates a device that converts the optical image to an electron stream so that it may be deflected or shuttered electronically. The electron stream is usually reconstructed to an optical image but may be recorded directly.

image dissection: any optical, mechanical or electronic process, or any combination of such processes, whereby an optical image is subdivided into discrete segments prior to being photographed, recorded, transmitted, or otherwise processed.

image-motion compensation: any system whereby relative motion between the image and the photosensitive material in which the image is to be recorded is reduced or eliminated.

pulse camera: a camera designed to operate a frame at a time in response to a command such as an electrical pulse. Each command causes a sequence of events that exposes a single frame, advances the film, and performs all other operations necessary to ready the camera for the next frame.

rotating-mirror camera: a camera employing a (rapidly) rotating mirror to deflect the image-forming light beam. Usually the image is formed on stationary film and the technique is used when the

writing rate required is higher than that obtainable with moving film.

rotating-prism camera: a framing camera employing a rotating, parallel-sided prism to move the image-forming light beam at the same speed as the continuously moving film during the exposure of a frame.

schlieren: an optical system producing images whose illumination or hue at a given point is related to the angular deflection incurred by a light ray in passing through the corresponding object point. The object is back-illuminated and a straight-edge, circular aperture, or graded density filter or multicolored filter is used in the system to discriminate between deflected and undeflected rays.

shadowgraph: a device arranged in such manner as to enable photography and/or visual observation of the silhouette of back-illuminated objects placed within the object field of the device and of gradations in luminous intensity resulting from variations in the opacity or in the index of refraction of media contained within the object field. (See direct and focusing shadowgraphs.)

spark source: a device used to produce a short-circuit pulse of luminous energy by an electrical discharge between two closely spaced electrodes either in air or in a controlled atmosphere at a pressure usually greater than half an atmosphere.

still photography: photography that provides a single photograph.

streak camera: (smear camera — a less popular term for streak camera). A camera in which the image is made to sweep along the film, or vice versa. Usually used with an essentially line-like object, or one made so by masking with a slit, so that the photograph is a record of events along the slit versus time.

streak photograph: a photograph made by a streak camera.

synchro-ballistic: (also referred to as ballistic-synchro but this term is less ac-

ceptable). A form of image-motion compensation used primarily in ballistic photography, in which the recording medium (i.e., film) is moved in approximate coincidence with the optical image.

time-lapse photography: a motion-picture technique used to achieve a time magnification of less than unity. The original exposures are made at a frame rate slower

than normal and are then projected at the normal rate. The result is an apparent speed-up of the original action.

time resolution: the ability of an instrument or technique to measure time. The smallest time interval that can be measured by use of a given recording system.

very-high-speed photography: photography in which picture-taking rates range from

10,000 to 1,000,000 frames per second, writing rates range from 10^{-1} to 10 mm per microsecond, or exposure times range from 10^{-7} to 10^{-5} seconds.

ultra-high-speed photography: photography in which picture-taking rates exceed 1,000,000 frames per second, writing rates exceed 10 mm per microsecond, or exposure times are less than 10^{-7} seconds.

Segmented Helical VTR Standards Group Holds Second Meeting

At the SMPTE Winter Conference held in San Francisco in late January, the need to resolve the problems of proliferating one-inch tape formats was attacked by the SMPTE Committee on Video Recording and Reproduction Technology. Two working groups were organized to concentrate separately on segmented and non-segmented (head-per-field) machine designs. The groups are composed of representatives of VTR and tape manufacturers and major broadcast and non-broadcast industry users.

The segmented-helical working group held its second meeting at PBS headquarters in Washington, D.C. on March 21, under the Chairmanship of PBS Associate Director of Technical Op-

erations, L. Merle Thomas. Bosch-Fernseh representative Rolf Crummenauer presented and described the electrical and mechanical specifications of the BCN one-inch helical format proposed to the SMPTE working group for standardization. The format is being considered commercially by several manufacturers including IVC, Philips and RCA. Meeting discussions focused on details of defining the format specifications.

It is SMPTE policy not to issue interim reports or tentative specifications resulting from meeting discussions. At an early date, however, this working group plans to have a draft standards proposal available for evaluation and comment by interested parties.

Standards & Recommended Practices

Approved SMPTE Recommended Practices

On 27 January 1977, the Society's Board of Governors approved the following SMPTE Recommended Practices: RP 71-1977, Setting Chromaticity and Luminance of White for Color Television Monitors Using Shadow-Mask Picture Tubes; and RP 72-1977, Specifications for an Illuminator of Test Pattern Transparencies for Television Studio Cameras. Copies of SMPTE Recommended Practices are available from Society Headquarters for \$1.00 each.

Approved International Standard

The International Organization for Standardization (ISO) approved an International Standard which is published here for your information. ISO 4238-1976, Cinematography — Optical Printing Ratios for Enlargement and Reduction of Motion-Picture Film Images — Specifications, is in accord with USA practices as specified in SMPTE Recommended Practices RP 65-1976 and RP 66-1976.

Copies of all International Standards are sold through the American National Standards Institute, 1430 Broadway, New York, NY 10018.

ISO is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. The International Standard published here was developed by Technical Committee 36 on Cinematography. The work of this committee is administered by the Engineering Department of the SMPTE

which functions as the secretariat in ANSI's name. The report of the last meeting of the committee was published in the June 1976 *SMPTE Journal*.

Withdrawn American National Standards

On 4 February 1977, the American National Standards Institute approved the withdrawal of seven American National Standards: PH22.44-1963 (R1969), Specifications for 16-mm Multifrequency Test Film, Photographic Type; PH22.45-1962 (R1969), Specifications for 16-mm 400-Cycle Signal-Level Test Film, Photographic Type; PH22.57-1963 (R1969), Specifications of 16-mm Buzz-Track Test Film, Photographic Type; PH22.67-1960 (R1969), 1,000-Cycle Balancing Test Film for 35-mm Motion-Picture Sound Reproducers; PH22.68-1962 (R1969), Specification for Buzz-Track Test Film for 35-mm Motion-Picture Sound Reproducers, Photographic Type; PH22.132-1963 (R1969), Specifications of 16-mm 400-Cycle Signal-Level Test Film, Perforated IR-3000, Magnetic Type; and PH22.140-1965 (R1969), Specifications for 16-mm Multifrequency Test Film, Perforated One Edge, Magnetic Type.

Withdrawal action was initiated because all standards specifying test materials are being transformed into SMPTE Recommended Practices. SMPTE Recommended Practices RP 67-1976 and RP 68-1976 have replaced PH22.57 and PH22.68, respectively. The other standards are being transformed by the Committee on Audio Recording and Reproduction Technology. — Alex E. Alden, *Manager of Engineering Services*.