

projectors. It is shown that to achieve 96% intelligibility (per cent of sentences understood) the projector should have an "articulation index" greater than 0.4, a quantity related complexly to noise and frequency. The index is simple to determine when the projector noise spectrum parallels the spectrum for ordinary speech, i.e., when it peaks near 500 cycles/sec. Measurement of the index is more difficult when the spectra are nonparallel.

SMPTE Contributions to Standardization in the U. S.

FREDERICK J. KOLB, JR., *Eastman Kodak Co., Rochester, N. Y.*

International Standardization of Magnetic Sound on Film — A Status Report

M. G. TOWNSLEY, *Bell & Howell Co., Chicago*
Standardization of frequency characteristics of magnetic sound on motion-picture film has been on the program of ISO TC/36, Cinematography, for several years. At Stockholm in 1955 tentative agreement was reached on a frequency charac-

teristic and a method of measurement. Later developments led to a disagreement on frequency characteristic, particularly in 16mm, and to a change in concept in the method of measurement. At Harrogate in 1958 a new agreement was reached, in which the frequency characteristic is given with tolerances which include both American and European practice and in which the frequency characteristic is specified in terms of relative levels to be recorded on the film.

International Standardization for Motion Pictures and Films for Television

DEANE R. WHITE, (*Leader, U.S. Delegation to the Harrogate Meeting of ISO/TC36*), *E. I. du Pont de Nemours & Co., Inc., Photo Products Dept., Parlin, N.J.*

The third meeting of ISO/TC 36, the committee responsible for development of international standards for motion pictures, was held in June 1958. Attention was given to problems arising from both television and theatrical usage. Areas of mutual understanding and agreement were enlarged. Improvement in the ease of inter-

national exchange of theater and television program material is the predictable result of this work.

INSTRUMENTATION AND HIGH-SPEED PHOTOGRAPHY

Techniques in High-Speed Microphotography
R. WAYNE ANDERSON, *Photographic Dept., Dow Chemical Co., Midland, Mich.*

The developments and techniques used by recognized authorities in the field of high-speed microphotography are reviewed. Slides and motion pictures illustrate micro studies obtained by using cameras that have been adapted or developed to resolve specific problems in micrography. Continuous and intermittent light sources are described as used in high-speed still and cinemicrography studies.

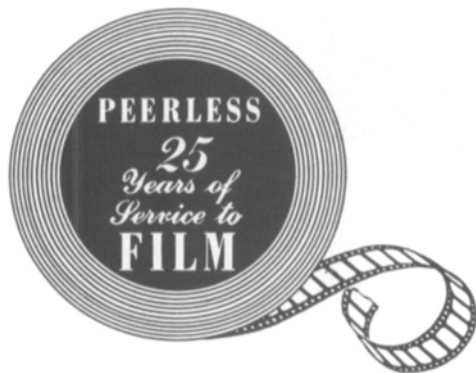
Shutter Image Converter Tube for Multiple Frame Photography

WILLIAM O. REED and WILFRID F. NIKLAS, *The Rauland Corp., Chicago*

Various systems for ultra-fast photographic shutters are described. It is shown that Shutter Image Converter Tubes have the advantage of light gain and the adjustable frame rate and frame spacing. A shutter tube is described which is capable of delivering 16 frames on the viewing screen, utilizing electrostatic focusing and electromagnetic deflection. This tube employs an Sb-Cs (0) photocathode formed by external Sb-evaporation, a cascaded focusing system, deflection yokes which are assembled around the neck of the tube, a lumped PDA system, and a yellow-green modified P20 phosphor for the viewing screen. The tube is capable of exposure times in the range of 1 millimicrosecond.

Color Exposure for High-Speed Photography of Some Events Requiring Artificial Illumination

KARL-HEINZ LOHSE, *U. S. Steel Corp., Monroeville, Pa.*



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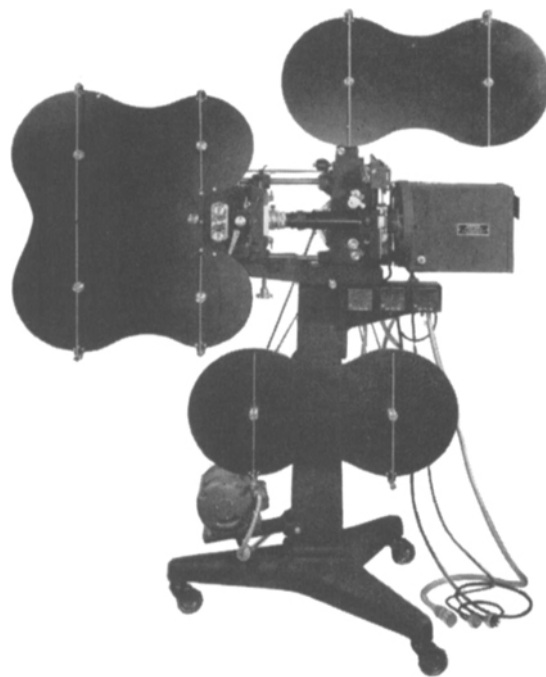
Education, Industry News

A recording-reproducing color television system which puts color electronically on 35mm black-and-white film has been developed at Iowa State College, Ames, Iowa. The system is described as completely compatible with all current television standards and the film may be used to rebroadcast or reproduce the original color. Simplicity is noted as an outstanding feature of the ISC system. It is said to be less complicated and more economical to operate than the simplest black-and-white film chain and is designed to be operated by the average studio technician. The equipment is on display at the Electrical Engineering Building on the ISC Campus. It was first demonstrated on Sept. 17, 1958, and thereafter will be demonstrated from 10 AM to 4 PM on Oct. 1, 16, 17, 24 and 25.

A paper on the system, "Recent Improvements in Black-and-White Film Recording for Color Television Use" by William L. Hughes, appeared in the July 1956 *Journal*, pp. 359-364. Mr. Hughes presented at the Washington Convention in 1957 a paper "Some Theoretical Aspects of Storing Color Television Information on Black-and-White Film" which has appeared as Iowa State College Bulletin 180.

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It is our continuous objective to maintain that leadership and continue to design and manufacture reduction printers that will enable you to do quality printing in an efficient manner.

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The Flying Angel, a color short subject produced by Unusual Films of Bob Jones University, has been selected as a United States entry in the 1958 Edinburgh Film Festival, Aug. 24 to Sept. 14. Selection was made by the Committee on International Nontheatrical Events of the Dept. of Audio-Visual Instruction, National Education Assn. The film portrays the University's motion-picture production and training facilities. Produced by students under faculty supervision, the film shows student and staff technicians building scenery, designing and constructing costumes, applying motion-picture make-up, shooting original film, and editing the picture footage and sound recordings which go in the finished product.

A Film Festival and Audio-Visual Exhibit was held May 27 at the William Samuel Johnson School, Bridgeport, Conn. The Festival was sponsored by the Dept. of Visual Education, Bridgeport Public School System, and was under the direction of John D. Del Vecchio, Acting Director of Visual Education. There were 21 exhibits of audio-visual materials and equipment.

An American Film Festival will be held at the Statler Hotel, New York, April 1-4, 1959, under the auspices of the Educational Film Library Assn. Sound and silent filmstrips and 16mm films in educational, cultural, religious, medical and industrial fields will compete for Blue Ribbon Awards which will be presented to approximately

25 category winners. The Festival is an expansion of the EFLA program of film appraisal and evaluation. Although more than 3600 films have been rated by the EFLA Evaluation Project, the Association has not previously made awards. Any nontheatrical films and filmstrips released in the United States during the calendar years 1957 and 1958 will be eligible for awards in the 1959 Festival.

The site of the new CBS Laboratories Research Center at Stamford, Conn., has been increased by 12 acres to make 23 acres in all. The Research Center will encompass research and development activities in the fields of military reconnaissance systems, acoustics, solid state and vacuum physics, magnetics, high-resolution data, recording systems and related work. The building is a glass-enclosed aluminum and steel structure with an open-air inner court in the center of the building. Architects are Skidmore, Owings & Merrill. Opening of the Center is scheduled for this fall when the present headquarters of the Laboratories in New York will be moved to Stamford.

Canadian Kodak Co. Ltd., Toronto, Ontario, an affiliate of Eastman Kodak Co., has announced construction of a \$1 million building to house all finishing operations in the production of photographic paper. The two-story building, scheduled for completion in the summer of 1959, will have a floor area of approximately 50,000 sq ft. During the last five years, the company has been engaged in a \$5 million expansion program.

Howard W. Hoadley, Manager, Motion-Picture and Still Depts., Marquardt Aircraft Co., Van Nuys, Calif., has been appointed Editor of the quarterly News Bulletin of the Society of Photographic Scientists and Engineers. The announcement was made by George T. Eaton, SPSE President.

Arthur H. Bolt, who has been associated with Bell & Howell for 29 years, has accepted appointment to the post of Vice-President for Engineering and Production for Traid Corp., Encino, Calif. During his association with Bell & Howell he held a variety of management positions, the most recent being Asst. Vice-President of West Coast Operations. Traid Corp. is special representative for Bell & Howell in the Western United States for photographic instrumentation cameras for military use.

Adrian Woolery, President of Playhouse Pictures, 1401 North La Brea Ave., Hollywood 28, specialists in animation, has been chosen as contributing writer for *The Technique of Film Animation*. This book is sponsored by the British Film Academy and is scheduled for fall publication by Focal Press in England and Hastings House in New York.

Murder on the Screen, a 16mm film on the subject of cause and prevention of film damage, has been produced by Eastman Kodak Co. and is available on a loan or lease arrangement. The film is in

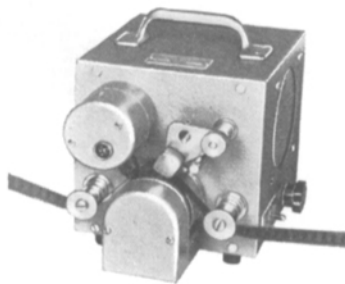
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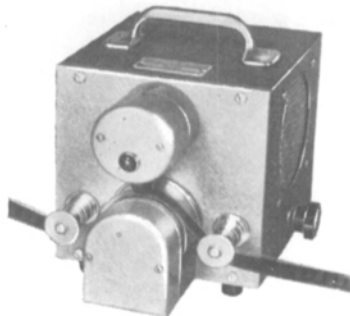
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Features: Simple threading; SMPTE Standard machined film rollers with oilless bearings; precision-ground shafts; polished stabilizer drum with needle bearings (surface cannot damage film). Soundtrack is read by placing it towards the operator and reading from right to left. (May also be read from left to right.)



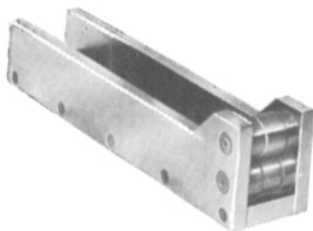
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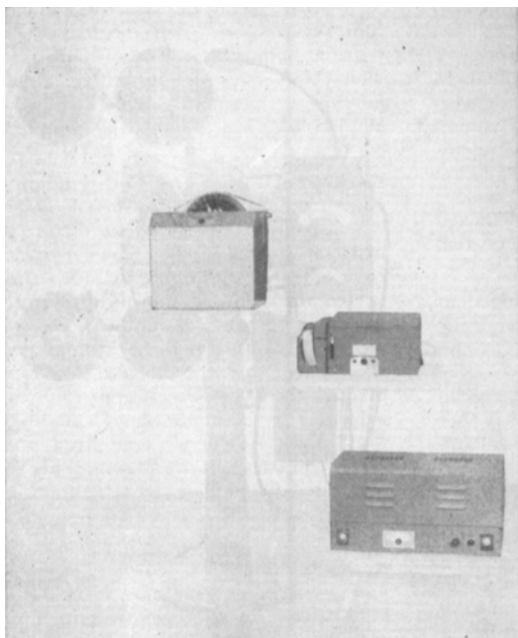
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The new stainless steel contacts insure a longer, trouble-free life due to their self-cleaning action.

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The servo-unit drive motors are actuated only during actual film printing and are started and stopped by the tape reader information. This results in reduced wear on motors, brakes, and clutches and reduces maintenance costs.

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Sharper brake action increases the accuracy of the printer point selection.

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NEW ELECTRONIC COMMAND UNIT . . .

This circuit is redesigned to avoid any wear and arcing of relay contacts and results in lower power transformer temperature.

NEW SIGNAL LIGHT ARRANGEMENT . . .

The lamp in the electronic unit does not light up until the time relays have operated indicating that the unit is ready for printing.

IMPROVED SAFETY CIRCUIT . . .

Additional safety features have been incorporated to eliminate misfiring of thyratrons controlling the servo-unit, thus assuring correct positioning of the light selector arm.

QUICKLY ADJUSTABLE . . .

For added convenience the machine can be quickly adjusted to any of 21 or 31 settings as well as offering adjustable spacing.

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Unicorn's Robot Splicer is the ideal piece of equipment for use in splicing film in total darkness prior to its entry into the processing machine.

Assures an extra strong splice which cannot come apart during the processing cycle.

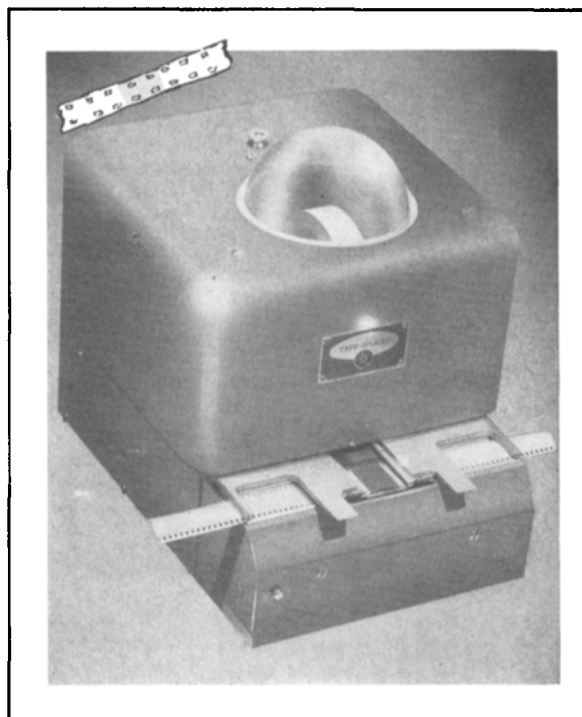
Eliminates all danger of nicks to processing rollers caused by staples, clips, or eyelets.

Pressure sensitive Mylar-base tape wraps completely around the cut edges of film resulting in a film saving butt splice. This guarantees minimum waste and safely ties down edges so that they cannot catch in the processing machine parts.

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color and sound. Running time is 22 min. The film depicts techniques described in *Prolonging the Life of the Motion-Picture Film* by E. C. Johnson, published in this issue of the *Journal* (pp. 590-592). Arrangements to borrow or lease the film may be made with the Motion Picture Film Dept., Eastman Kodak Co., at any of the following addresses: 343 State St., Rochester 4, N.Y.; 342 Madison Ave., Suite 626, New York 17; 130 E. Randolph Dr., Room 2006, Chicago 30; 6706 Santa Monica Blvd., Hollywood 38.

The closed-circuit TV installation at Walter Reed Army Medical Center is the subject of an article reprinted by RCA and distributed with the August 1958 issue of the *RCA Educational TV News* as a special service to educators. The article, "Walter Reed Army Medical Center Uses RCA Compatible Color Television for Medical Education," describes the installation which was completed late in 1956.

Shortly after the installation was completed, members of the Society who attended the 1957 Spring Convention in Washington, D.C., had the opportunity of observing the system at work during a guided tour and demonstration arranged by officials in charge of the program. A session was devoted to papers presented by staff members of Walter Reed Hospital who discussed various aspects of the closed-circuit program which was then opening up a whole new field in medical science. Among the speakers who presented papers were Paul W. Schafer, M.D., Television Div., Walter Reed Army Medical Center; Julius Halsman, Medical Illustration Service, Armed Forces Institute of Pathology; Ralph W. Curtis, Walter Reed Army Medical Center; and George A. Baker, Television Div., Walter Reed Army Medical Center.

A few highlights of the RCA article are quoted below: "The Walter Reed system . . . contains the first Medical Color TV Camera designed for ceiling mounting in operating and autopsy rooms. It also includes a specially designed color TV system of microscopy utilizing standard instruments . . . For use in color TV microscopy there has been developed a television microscope assembly. This utilizes an RCA 3-V color camera . . . suspended in such fashion as to insure alignment with the optical system of the several microscopes employed . . . The ultimate capacity of the (TV) Division is difficult to ascertain. However, it is expected that this point will be reached during fiscal year 1958 and that it is approximately 150 to 200 programs per month . . . (An) organization of this magnitude . . . represents an implementation of the conviction that television is an effective and potent force in support of the training and education mission of the Army Medical Service. This conclusion was reached after substantial deliberation by several committees of qualified experts representing all of the interested agencies. . ."

The University of Miami, Coral Gables, Fla., has issued its 11th Annual Report on Broadcasting and Film Activities to cover the 1957-58 fiscal year. Twenty-four courses in Radio, TV and Film were taught during the first semester for a total of 59 credits, and 18 courses were

taught the second semester for a total of 52 credits. During the year the University's film services were expanded with more than a half-million feet of film printed. The University is installing kinescope facilities, operated cooperatively with WTHS-TV, which is nearing completion.

Darkroom Design and Construction (No. K-13), published by Eastman Kodak Co., is a 64-page book intended for use as a guide in making preliminary plans for a darkroom. Topics discussed include: the expected work output, the number of people who will be working in the space; major pieces of equipment to be installed; available space; and the physical flow of work through the area. A section of 29 layouts is presented as examples of typical situations that might be encountered by a photography department in planning its facilities. The booklet is priced at 50 cents and is available at Kodak dealers.

A Kodak booklet, 16mm Kodak Movie Films — Data and Selection, provides data for proper selection of 16mm film for various uses. One section gives complete exposure information, including exposure compensation when using filters. A suggested light-source-and-filter combination table is included for use with Kodachrome films. The booklet is available without charge from Eastman Kodak Co., Sales Service Div., Rochester 4, N.Y.

section reports



The Canadian Section entertained 55 members and guests at its Apr. 15 meeting, which took place at Caldwell's Queensway Studio, 1640 Queensway Ave., Toronto.

The first speaker was Glenn Robitaille, Chief Engineer of CFPL-TV, London, Ont., who spoke on "Film Telecasting from a Private Television Station — Its Implications and Its Problems." The subject of film was discussed from the point of view of an independent TV film user as opposed to a Canadian Broadcasting Corp. network origination point. Also described were the great differences in density and contrast of films received for projection. Mr. Robitaille commended the Lab Standards Committee of the Canadian Section for its work, remarking that he felt that its efforts would soon be rewarded by a more uniform quality in films for television use.

During the second half of the meeting, Robert Franz of Film Graphics, Inc., New York, spoke on "Motion Picture Optical Effects." After discussing film opticals, Mr. Franz outlined what optical effects could be performed by the new branch of his company, at their recently opened Toronto branch.—*Ronald E. Ringler*, Secretary-Treasurer, Du Pont Co. of Canada, Ltd., Toronto, Ont., Can.