

ADVANCE PROGRAM

The advance notice, with hotel reservation form, was mailed to the membership on September 7. The Advance Program below is the last advice about the Convention—until registrants get their Final Programs at the Registration Desk.

SMPTE 76th Convention October 18-22 — Los Angeles

Convention Exhibit of industry equipment is in The Ambassador, as are the technical sessions and entertainment events, unless otherwise noted.

SUNDAY OCTOBER 17

Registration for the Convention will be opened in the afternoon in the Ambassador Hotel Lobby.

MONDAY OCTOBER 18

9:30 A.M. Registration, Ambassador Hotel Lobby

12:30 P.M. Get-Together Luncheon, The Coconut Grove; Guest Speaker

3:00 P.M. Annual Business Meeting of the Society

3:30 P.M. Color Television, Ambassador Theatre

Recording Color Television Signals

E. DUDLEY GOODALE, *National Broadcasting Company, New York*

This paper will describe a method of recording color television signals utilizing standard motion-picture color films. A brief description of the equipment and techniques employed in conjunction with experimental recordings at NBC will be given together with a short demonstration reel of the results obtained to date.

Multi-Channel Television Relay Station

GEORGE R. SUTHERLEN, *U.S. Naval Ordnance Test Station, China Lake, Calif.*

Completely described are all aspects of the authorization, selection of site, building, power, selection of equipments and the operation of the 7-channel television relay station on Laurel Mountain, Calif. Described is the technique which all 7 Mount Wilson television signals are relayed from the top of Laurel Mountain to Indian Wells Valley and a population of 15,000 people.

Test Instruments for Color Television Broadcasting

JOHN W. MILLION, Jr., and ROBERT K. HUNSICKER, *Wickes Engineering and Construction Co., Camden, N. J.*

Test instruments for broadcast use, such as the Amplitude Linearity Tester, the Multi-Burst Generator, the Vector Display Equipment and the Envelope Delay Tracer, have come into their own as a result of color television. The evolution of these instruments and their application in making amplitude, linearity, frequency and phase response tests of studio, distribution and transmitting equipment will be discussed in this paper. Special emphasis is placed on the "monitor" types of equipment that enable the operating personnel to make rapid checks of equipment performance, rather than on the "laboratory" or "measurement" types, which usually require a higher degree of operational skill and more time than is available.

8:15 P.M. Color Television Session. CBS Television City. Description and Tour, Including Color-Film Reproducing Equipment.

TUESDAY OCTOBER 19

9:30 A.M. Field Trip to NBC Television Studios

2:00 P.M. Television Session, Ambassador Theatre

A Short History of Television Recording

ALBERT ABRAMSON, *CBS Television Technician, Hollywood, Calif.*

This brief survey of the development of television recording since 1927 covers the evolution of the three basic television recording processes: stylus, magnetic and photographic. The film recording systems used in the United States and Great Britain are briefly described. The introduction of television recordings made on magnetic material in both monochrome and color is noted. The paper concludes with a short resume on the new art of electronic motion pictures produced with television cameras and recording facilities.

Equipment for Evaluating Lenses of Television Systems

E. HUTTO, Jr., *Engineering Products Div., Radio Corp. of America, Camden, N. J.*

A lens bench has been developed incorporating a nodal slide and a flat field indicator which permits the rapid determination of the square wave flux of a lens both on and off axis. A synchronously driven test object is used, and a plot of response versus line number is presented on an oscilloscope. Lenses up to 24 in. in focal length and $3\frac{1}{4}$ in. in diameter may be tested.

Continuous Projector Problems

O. WITTEL and D. HAEFELF, *Eastman Kodak Co., Rochester, N. Y.*

The problems of getting good vertical image steadiness in a continuous projector for television of the type which uses an optical compensator consisting of rotating and tilting mirrors are described.

A 16mm Projector for Operation with a Television Film Chain on a Partial Storage Basis

EDWIN C. FRITTS, *Camera Works, Eastman Kodak Co., Rochester, N. Y.*

The modification of a projector in current use with full-storage operation into an iconoscope is described. An accelerating quill rotating at 720 rpm, intermediate between an 1800 rpm motor and the intermittent sprocket, provides the change in phasing to place all pulldown action in the same position in the television fields. Linkage between the motor and quill and the quill and intermittent are timing belts. The design is such that change of present equipment may easily be made in the field.

8:00 P.M. Color Television Session, Academy Award Theatre

Color Film Equipment

A. C. LUTHER, *Radio Corp. of America, Camden*

Color Television Projection Equipment

L. L. EVANS, *Radio Corp. of America, Camden, N. J.*

Large-screen color television has been demonstrated several times and commercial equipment is available. Various problems of colorimetry, optics and electronics have been overcome and the resultant picture is adequate for theater use. The technical features of the equipment are outlined as well as application information. The projector described will produce a picture 15 ft by 20 ft with good highlight brightness. It operates on the standards formulated by the National Television System Committee which have been adopted for general use by the FCC.

Some Laboratory Procedures in Preparing Television Prints in Black-and-white and Color from Eastman Color Negative

SIDNEY P. SOLOW and EDWARD H.

REICHARD, *Consolidated Film Industries, Hollywood, Calif.*

Many telefilm producers are preparing for color television broadcasting by shooting in 35mm Eastman color, releasing for current requirements in 35mm and 16mm black-and-white, and storing the color original for future use. Various basic laboratory techniques for making panchromatic black-and-white prints for projection and duplication are described. Methods are detailed for incorporating lap dissolves and fades without additional dupe generations in both black-and-white and color versions. Shown also are alternative paths for arriving at 16mm color release prints including utilization of the new Eastman color 16mm color positive material.

WEDNESDAY OCTOBER 20

10:00 A.M. Magnetic Sound for Television Films, Ambassador Theatre

Discussion of the factors pertinent to obtaining magnetic-stripe soundtracks on television films, both 16 mm and 35 mm.

2:00 P.M. Magnetic Recording Session, Ambassador Theatre

An Electronic Comparator for the Automatic Inspection of Magnetic Sound Prints

JEROME W. STAFFORD, *Sound Dept., Metro-Goldwyn-Mayer Pictures, Culver City, Calif.*

This paper describes an electronic system for comparing magnetic sound prints with the master track during the printing operation. In the release printing of CinemaScope pictures the comparator is a useful tool for the automatic inspection of the product.

Magnetic Head Wear Investigation

M. RETTINGER, *Radio Corp. of America, Hollywood, Calif.*

For a given film and film wrap angle, magnetic head life is proportional to the film pressure on the head produced by the film tension, the square root of the core radius, the $3/2$ power of the pole face depth, the core width, and, in some undetermined manner, the core hardness. More briefly, one may say that (for a constant film and film wrap angle) head life is proportional to the film pressure, volume of removable core material, and core hardness.

A Moving Coil Feedback Disk Recorder

C. C. DAVIS, *Westrex Corp., Hollywood, Calif.*

The distinctive feature of this recorder is the application of corrective feedback originating in the actual stylus driving mechanism. Thus, the motion of the stylus is accurately controlled, irrespective of recording conditions, over a wide range of amplitudes and frequencies. The latest improvements are described and include a simple method of applying heat to the stylus and the use of tapered shank styli to facilitate their replacement.

Report of Magnetic Recording Subcommittee

ELLIS W. D'ARCY, Chairman, *Ellis W. D'Arcy & Associates, Chicago*

Perceptibility of Flutter in Speech and Music

FRANK A. COMERCI, *Material Laboratory, Bureau of Ships, New York Naval Shipyard, Brooklyn, N. Y.*

The results of subjective rankings of various speech and music selections containing various amounts and types of flutter are presented. These rankings are compared to the type of flutter and the results of flutter measurements using peak and rms indications and various flutter rate weighting networks. The comparisons show that a meter using an rms indicating device and a flutter rate weighting network will provide flutter measurements which are directly related to the obnoxious quality that



- 1 Take-up reels
- 2 Feed reels
- 3 Splicing elevator (40 seconds capacity)
- 4 Exhaust fan motor (1800 cfm)
- 5 Feed bottles with bottom screw vents
- 6 Drying air thermometer
- 7 Micrometer stripe adjustments
- 8 Binocular microscope
- 9 Sapphire shoes beneath precision striping heads
- 10 Splicing block
- 11 Air heaters
- 12 295' leader
- 13 High temperature drying chamber (4 minutes)
- 14 Removable partition facilitates threading
- 15 Low temperature drying chamber (2 minutes)
- 16 Sliding glass doors



How the New 16-mm Magna-Striper applies Soundcraft Magnetic Oxide in three widths for three different purposes.

25-Mil. MAGNA-STRIPE for double-perforated silent film

50-Mil. MAGNA-STRIPE for both magnetic and photographic sound

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HERE AT LAST is the answer to the demand for local striping service to provide true hi-fidelity 16-mm magnetic sound

... an entirely self-contained, semi-portable, one-man operated magnetic oxide striping machine, identical in every vital feature to the now famous 35-mm Soundcraft Magna-Striper which won the coveted 1953 Academy of Motion Picture Arts and Sciences Award.

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every major Hollywood producer of CinemaScope has used to process stereophonic sound release prints.

With ease and precision this new equipment quickly applies two stripes of Soundcraft's perfected magnetic oxide to any 16-mm film ... black and white or color, single or double perforation. Jeweled bearing shoes (Item 9 above) assure precision striping even with old, warped or distorted film ... even when spliced and spliced and *spliced!* All wiring is explosion proof.

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the flutter imparts to music and speech. (This paper's presentation is subject to clearance by the Navy Dept.)

Development of a Method for Measuring the Magnetic Strength Existing on 16mm Magnetic Soundtrack

ROBERT SCHWARTZ, SHELDON I. WILPON and ROBERT A. COMERCI, *Material Laboratory, Bureau of Ships, New York Naval Shipyard, Brooklyn, N.Y.*

The Material Laboratory is in the process of developing a method for measuring the magnetic strength existing on 16mm magnetic soundtrack by utilizing a nonmagnetic loop for the determination of the absolute surface induction at 400 cycles/sec for "pegging" the relative surface induction vs. frequency characteristic obtained by the "short gap" or other approved method. This paper shows that this method was found to

be a practical method for determining the surface induction recorded on presently available commercial 1½-in. magnetic tapes, independent of the tape characteristics and the depth of penetration of the recorded signal. (This paper's presentation is subject to clearance by the Navy Dept.)

6:45 P.M. **Cocktail Hour**

8:00 P.M. **Semiannual Banquet and Dance, Embassy Room (Informal, dress optional)**

THURSDAY OCTOBER 21 - CONCURRENT SESSIONS

9:30 A.M. **High-Speed Photography Field Trip to Moody Institute of Science**

10:00 A.M. Motion-Picture Equipment Session, Ambassador Theatre

A New Studio Zoomar for 35mm Motion Picture Work

FRANK G. BACK, *Zoomar, Inc., Glen Cove, L.I., N.Y.*

A new Zoomar lens, especially designed for 35mm motion picture work, will be demonstrated. It has a focal range from 40 mm to 120 mm and a speed of $f/4$. Compared to the old Zoomar-35 it is light (6 lb) and only 7½ in. long including a coupled, wide-vision viewfinder. This viewfinder is without eyepiece or peephole and therefore does not restrict the head movements of the cameraman. Performance of the new lens is so much better than that of the old Zoomar-35 that, even when wide open, its image quality comes very close to that of a good standard 35mm motion picture lens.

CinemaScope Camera Lenses

JOHN D. HAYES, *Bausch & Lomb Optical Co., Rochester, N.Y.*

The wide acceptance by the motion picture industry of the CinemaScope process of motion picture presentation created a pressing need for camera taking lenses of a variety of focal lengths. Described are the optical and mechanical aspects of the development of a series of lenses designed specifically to provide this needed choice.

An Exploration of New Methods for Splicing Film

D. C. CHAMBERS and W. R. HOLM, *Photo Products Dept., E. I. Du Pont de Nemours, Parlin, N.J.*

2:00 P.M. High-Speed Photography Colonial Room

Panel discussion of the program presented at the 2d International Symposium on High-Speed Photography held in Paris.

2:00 P.M. Motion-Picture Screens, Ambassador Theatre

A New Method of Describing and Measuring the Granularity of Photographic Materials

R. CLARK JONES, *Polaroid Corp., Cambridge, Mass.*

The new method employs a two-dimensional noise spectrum that is analogous to the one-dimensional noise spectrum used to describe the frequency distribution of electrical noise. The two-dimensional noise spectrum describes the size distribution of the density fluctuations that constitute the granularity. It is urged that the noise spectrum is the best way to describe granularity. The noise spectrum of Super-XX film will be shown as an example.

Consideration of Improvements in Condensing Systems for 35mm Projection

R. M. ALTMAN, A. E. NEUMER and H. H. SCHROEDER, *Bausch & Lomb Optical Co., Rochester, N.Y.*

In order to take full advantage of the new $f/1.8$ high-speed projection lenses, faster condensing systems than those now available are required. The design considerations of such systems are discussed and experimental data is given. The increase in screen illumination afforded by these new condensers is accompanied by greater energy at the film gate necessitating more efficient heat control techniques. Optical devices for achieving this are described.

CinemaScope in Drive-in Theatres

RALPH H. HEACOCK, *Radio Corp. of America, Camden, N.J.*

CinemaScope (or any of the other wide-screen, multiple-channel sound, new techniques) presents three important problems to the drive-in theater. The first is a very wide screen. The second is a suitable light source which can provide enough light to illuminate the wide screen acceptably. The third is the possible use of

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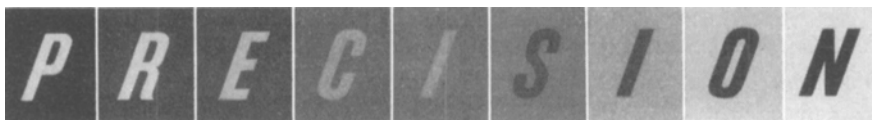
Your Assurance of Superior Prints

16 Years of Research and Specialization — in every phase of processing — visual and aural — assure finest results.

Advanced Methods — constant checking and adoption of up-to-the-minute techniques — plus new engineering principles and special machinery provide unequalled service.

Purveyors of Test Film Prints

The industry test prints by which performance is measured



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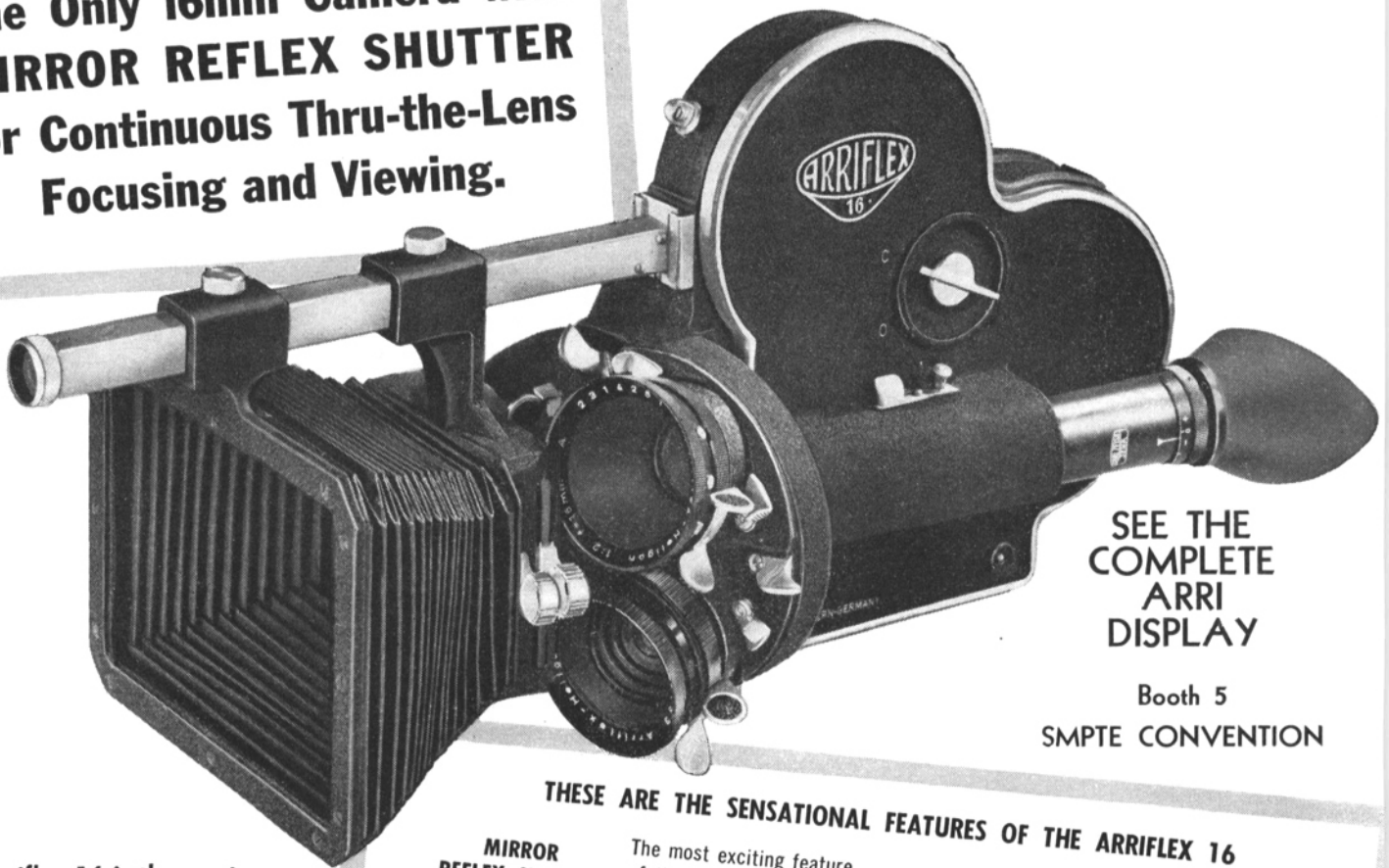
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The Only 16mm Camera with
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The Arriflex 16 is the most advanced camera in the 16mm field. No comparison can be made with any existing equipment. It is in a class by itself... unique for its features, and outstanding for its workmanship.

THESE ARE THE SENSATIONAL FEATURES OF THE ARRIFLEX 16

MIRROR REFLEX SHUTTER The most exciting feature of them all: for accurate framing and critical follow-focus, through the taking lens, even during the actual shooting. Image on ground glass is brilliant, uninverted and right-side-up, magnified 10x through a highly corrected optical system. No parallax, and no need for accessory finders.

REGISTRATION PIN Found only in cameras selling for \$3000 or more. Automatically engages and locks film during exposure. Assures absolute frame registration, and picture steadiness.

ELECTRIC MOTOR DRIVE No need to stop a scene to wind a spring. Has variable-speed 6-volt DC motor with forward and reverse switch. Operates from portable, rechargeable battery pack, dry cell batteries, or with Transformer-Rectifier Unit on 115 volts AC. Easily interchangeable with Synchronous Motor Unit (available as accessory).

DIVERGENT 3-LENS TURRET Accommodates lenses from 11.5mm extreme wide angle to longest telephotos. Lenses quickly interchangeable. Wide angle and 300mm telephoto can be mounted simultaneously without mechanical or optical interference.

OTHER ARRIFLEX PROFESSIONAL FEATURES

FOOTAGE & FRAME COUNTERS—for forward and reverse action.

TACHOMETER—indicates speeds from 1 to 50 frames-per-second.

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DETACHABLE NECKSTRAP—for handheld filming.

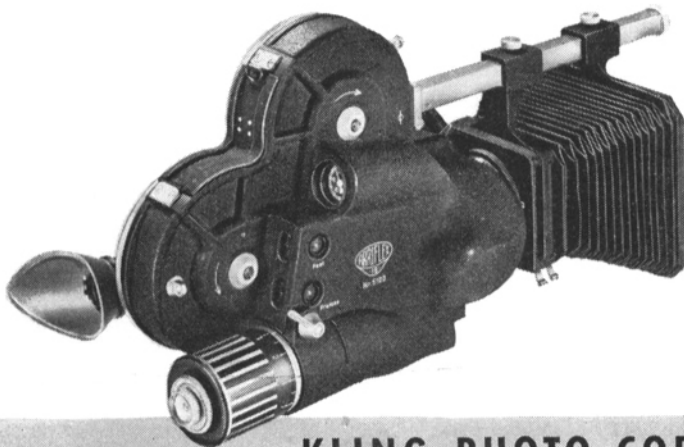
LIGHTWEIGHT—camera with Matte Box weighs only 7½ pounds.

FILM CAPACITY—50 and 100-foot standard daylight spools.

400-FOOT MAGAZINE—accommodates External Film Magazine. (This accessory will be available at a later date.)

DETACHABLE MATTE BOX-FILTER HOLDER—has stationary and rotating filter stages for color filters, polarizing filters, fades, dissolves, and other effects.

SINGLE SPROCKET DRIVE—for either silent or sound-perforated film.



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multiple-channel sound. These problems and their practical application to currently operating drive-in theaters are briefly discussed.

An Improved High-Brightness Screen for Drive-in Theaters

PETRO VLAHOS, *Motion Picture Research Council, Hollywood, Calif.*

Chromaticity Characteristics of Theater Screens

PAUL ZEFF and JOHN P. LIVADARY, *Columbia Pictures Corp., Hollywood, Calif.*

Spatial Sound Effects

J. E. VOLKMANN, *Radio Corp. of America Camden, N.J.*

8:00 P.M. Wide-Screen Processes, Paramount Studio Theatre

An analysis of the factors controlling image quality in wide-screen processes.

FRIDAY OCTOBER 22—CONCURRENT SESSIONS MORNING AND AFTERNOON

10:00 High-Speed Photography, Ambassador Theatre

Simple Electronic Timing Device for High-Speed Photography

WEBSTER BLAKE, *Douglas Aircraft Co., Inc., Santa Monica, Calif.*

A single-pulse simple timing system, to be used in motion picture cameras in the range of 200 to 2000 frames/sec, is discussed. One millisecond resolution is obtained with one neon glow lamp. Application to cameras used in special aircraft installations will be discussed.

A Tracking Twin Telescope Mount

G. A. ECONOMOU, *Sandia Corp., Albuquerque, N.M.*

A Navy twin 40mm hydraulic gun mount has been converted to a tracking telescope mount carrying two 12-in. diameter telescopes and two short focal-length lenses. A radar refocusing system and a thermal expansion correction system have been developed to maintain focus over varying slant ranges and temperatures. The tracking operator has a radar acquisition aid and a bipower sight for acquiring and tracking ballistic objects.

High-Speed Motion Pictures And Sequence Photographs of the Same Event

FRED A. METLEN, *Seattle, Wash.*

Photographic recording of model bomb drop tests in a wind tunnel.

10:00 A.M. General Motion-Picture Photography, Ambassador Theatre

A review is given of the status of motion-picture films for amateur use prior to 1923. Up to that date lack of standardization of film size, the use of the negative-positive method, and cost of apparatus and printing held back extensive use of film for amateur motion pictures. Research in the manufacture of safety acetate film support was started by Eastman Kodak Company in 1906-07 and limited quantities of film were manufactured and sold between 1912 and 1923. Film on safety acetate base, a fundamental requirement for home movies, was introduced in 1912 for a portable projector made by Thomas A. Edison, Inc., and also for equipment made by Pathe Freres, a French firm. Research on film for amateur motion pictures was started in 1914 by Eastman Kodak Co. Subsequent developments of 16mm film, including processing and the use of sound, and the history of 8mm reversal film, are presented.

Early History of Amateur Motion-Picture Film

GLENN E. MATTHEWS and RAIFE G. TARKINGTON, *Eastman Kodak Co., Rochester, N.Y.*

Shrinkage Behavior of Motion-Picture Film

C. R. FORDYCE, J. M. CALHOUN, and E. E. MOYER, *Manufacturing Experiments Div., Eastman Kodak Co., Rochester, N.Y.*

Shrinkage characteristics of both 35mm and 16mm films manufactured by the Eastman Kodak Co. have been evaluated by laboratory measurements and by examination of film in commercial use. Results of these investigations will be presented.

A Light Meter for Printer Control

A. J. SANT, M. C. GODDARD, and O. E. MILLER, *Color Technology Div., Eastman Kodak Co., Rochester, N.Y.*

Because of the increased need for the control of motion picture printers used for printing color films, a simple barrier cell type of light meter was designed for use on release printers. The meter has very good stability and linearity of response. Its sensitivity is very adequate for the intensity levels encountered in release printers. The probe unit contains a filter magazine that permits rapid reading through red, green and blue filters. It was designed to give photocell responses which closely approximate the responses of three sensitive layers of Eastman Color Print Safety Film, Type 5382.

A System for Automatic Additive Printing and Scene Testing of Color Film

FRANK P. HERRNFELD, *Frank Herrnfeld Engineering Corp., Culver City, Calif.*

A system for additive printing of positive color release film is described. The system consists of an additive scene tester, a conversion of a Model D Bell & Howell Printer, and a control system which makes the modified printer completely automatic. The paper treats additive printing only, no attempt being made to compare additive printing to other systems.

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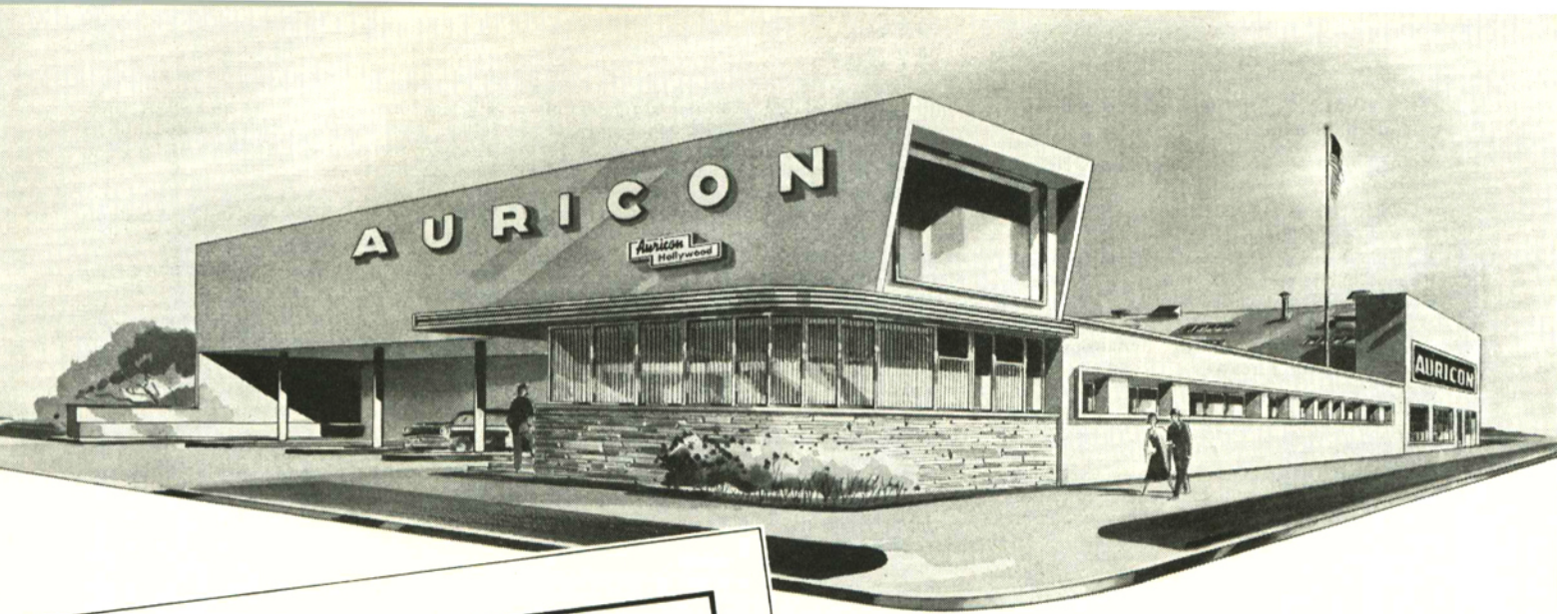
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Practical, unitized construction permits the addition of spray cabinets for REVERSAL or COLOR film.

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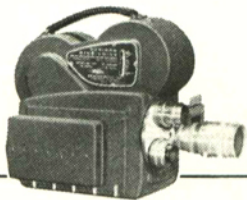
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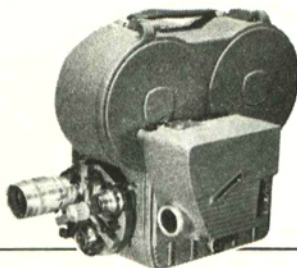
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16mm Sound-On-Film Cameras!



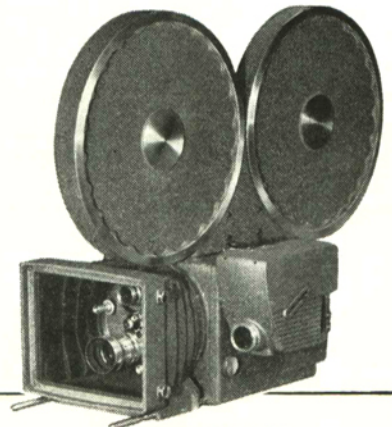
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16mm Optical Sound-On-Film Camera. 100-ft. film capacity for 2¾ minutes of recording; 6-volt DC Converter or 115-Volt AC operation. \$695 (and up).



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16mm Sound-On-Film Camera. 1200-ft. film capacity for 33 minutes of recording. \$4652.15 (and up) complete for "High-Fidelity" Talking Pictures.

Auricon Cameras are now in use by Television Networks, Film Studios, Newsreels and Educational Producers, for filming quality pictures in natural color or black & white. Come in for a demonstration or write for free Catalog.

The new Hollywood home of Auricon is a completely modern plant, designed and equipped to serve you better. New engineering, manufacturing and test facilities assure you of the latest and finest in precision 16mm Motion-Picture Cameras. World-wide acceptance and enthusiastic approval of Auricon Equipment makes this new plant possible.

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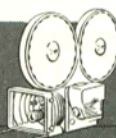
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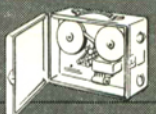
SUPER 1200
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TRIPOD
\$325.00



PORTABLE POWER UNIT
\$269.50



SOUND RECORDER
\$1149.50

**2:00 P.M. High-Speed Photography,
Colonial Room**

**Recording and Assessment of Telemetered
Data**

**RODERICK M. McCLUNG, U.S. N.O.T.S.,
China Lake, Calif.**

A method for recording telemetered data on 35mm film and then reading this data by photoelectric methods is discussed.

**2:00 P.M. Color Film Sensitometry,
Ambassador Theatre**

Sensitometers for Color Films

**O. E. MILLER, Color Technology Div., Eastman
Kodak Co., Rochester, N.Y.**

Because of the complexity of color films and processes and the additional quality attributes that must be kept under control, sensitometric test exposures must be of high precision. Exposure conditions should closely simulate the conditions under which the films are used. The chief characteristics that must be controlled are the light intensity, the spectral energy distribution, and the exposure time. Control of a sensitometer is best accomplished by controlling its separate components, the light source, the filters and the timing mechanism. In addition to primary calibration, overall characteristics may be checked frequently by physical photometry or by photographic comparisons with a standard.

**Color Densitometers: Performance Character-
istics**

**W. L. BREWER and S. A. POWERS, Color
Technology Div., Eastman Kodak Co., Rochester,
N.Y.**

Color densitometers in motion picture film processing laboratories are used for film processing

control, printer control, print film evaluation in terms of its visual characteristics, and negative or intermediate film evaluation in terms of its printing characteristics. Characteristics of a color densitometer which are of interest in considering its suitability for these various applications include density range, measuring geometry, stability, linearity, precision and accuracy. Methods for evaluating each of these performance characteristics are described.

Color Densitometers: Control Methods

**M. C. GODDARD and S. A. POWERS, Color
Technology Div., Eastman Kodak Co., Rochester,
N.Y.**

Color densitometers, used for process control and film evaluation, must be controlled if they are to perform satisfactorily. Characteristics to be controlled include spectral sensitivity, measuring geometry, stability, linearity, precision and accuracy. Routine adjustments provide part of this control. Checks through film strips or filters furnish control data. Control materials must be calibrated. The control data may be plotted on control charts, or a single, statistical "go-no-go" gauge may be devised.

**Densitometers for Control of Color Motion-
Picture Film Processing**

**JOHN G. FRAYNE and J. H. JACOBS, Westrex
Corp., Hollywood, Calif.**

The widespread use of negative and positive color films now available to the motion picture industry has introduced new, more complicated and more exacting control requirements in the film-processing laboratories. In step with this trend, two new densitometers have been developed. One instrument is intended to provide precise control of the new color picture processes, while the other provides diffuse den-

sity measurements of black-and-white, silver-sulfide, and silver-image-with-dye soundtracks. The instruments, their application and performance, are described.

**8:00 P.M. Color Session, Academy
Award Theatre**

**Color and Brightness in Projected Color
Pictures**

**RALPH M. EVANS, Color Technology Div.,
Eastman Kodak Co., Rochester, N.Y.**

This formal lecture will include demonstrations of color adaptation and brightness adaptation. Special projection equipment will be used to obtain desired effects.

LADIES PROGRAM—Aside from the Monday Get-Together Luncheon and the Wednesday evening Cocktail Hour, Banquet and Dance, noted above, the exact schedule of events had not been laid down at press time. Detailed arrangements for the Ladies Program are in the hands of Mrs. Philip P. Caldwell and Mrs. John G. Frayne and their planning for a full program of interesting activities in the motion-picture capital is well ahead.

Employment Service

These notices are published for the service of the membership and the field. They are inserted for three months, at no charge to the member. The Society's address cannot be used for replies.

Positions Wanted

Motion Picture Production. Desire position as assistant to producer. Background includes camera experience, some directing in 35mm productions. Age 24. Write: Harry Wuest, 137 Summit Ave., Upper Montclair, N.J.

Positions Available

**16mm Printers, Color Timer, Negative Con-
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