

world-acclaimed executive offices, working floors, dining rooms and lounges and inspection of their famed test kitchens (included in registration)

Afternoon: Free

6:45 P.M. to 8:00 P.M.: Cocktail Party, Statler

8:00 P.M. to 1:00 A.M.: Banquet and Dance, Statler

Friday, May 4

Farewell Get-Together Punch Party, Ladies Headquarters—Hudson Room, Mezzanine (included in registration)

Motion-picture theater privileges will be available through convention badges. TV show admissions and special rate tickets to Rockefeller Center, Empire State Building and the famous Circle Line Tour by boat around Manhattan will be available to those registering.

PAPERS PROGRAM PRODUCERS

Under the Papers Committee Chairman Ralph E. Lovell, the standing

roster of Vice-Chairmen is: J. E. Aiken, G. G. Graham, C. E. Heppberger, B. D. Plakun, Petro Vlahos and J. H. Waddell.

The local Vice-Chairman automatically ticketed for the forthcoming New York Convention thus was Ben Plakun—officially 79th Program Chairman. In this capacity, Ben Plakun extended the recent system of special chairmen for symposiums a final step and set up his entire activity by topics. These are the Topic Chairmen who produced the Advance Program:

Laboratory Practice — *W. H. Rivers*
Motion-Picture Equipment — *Willy Borberg*
TV Studio Lighting — *H. M. Gurin*
Underwater Television — *Herbert Barnett*
High-Speed Photography — *J. H. Waddell*
Sound Recording — *George Lewin*
TV Film Commercials — *W. J. Morris*
Television — *S. W. Athey*
Motion-Picture Short Films — *E. M. Stifle*

Past Program Chairman *Glenn E. Matthews* contributed much to the early

organizing of this Program as well as adding to its momentum up to completion.

SESSION OPENERS

Chairman E. M. Stifle has arranged for the following motion-picture short subjects, all in 35mm color with optical sound, as opening fare for technical sessions:

Tulip Time in Holland
Italian Memories

Warner Brothers Pictures Corp.

Magoo Goes West (cartoon)
Magoo's Sick Friend (cartoon)

Columbia Pictures Corp.

Stunt Pilot (CinemaScope)

Land of the Bible (CinemaScope)

20th Century-Fox Film Corp.

Bing Presents Oreste (VistaVision)

VistaVision Presents Sun Trails (VistaVision) Paramount Pictures Corp.

Two of the latest color cartoon shorts

Loew's Inc.

ADVANCE PROGRAM

The sessions of the Convention are almost certain to be held as outlined below but a few papers may be moved, curtailed or deleted because of the fullness of some sessions; therefore, if you are interested most especially in a very few specific papers, you should inquire a week before the Convention by telephoning either to Bernard D. Plakun, General Precision Laboratory, Pleasantville, N.Y. (Pleasantville 2-4100), or to Society headquarters (Longacre 5-0172).

SUNDAY — APRIL 29

Registration will open at 2:00 P.M. in the Statler's Penn Top Foyer and Ladies Headquarters will open at the same time in the Hudson Room on the Mezzanine.

MONDAY — APRIL 30

9:00 A.M. Convention Registration

9:15 A.M. Opening Remarks John G. Frayne, SMPTE President

9:30 A.M. Laboratory Practice Session I

Stainless Steel Bearings for Film Processing Machines

LEONARD F. GIARRAPUTO, Pathe Labs Inc., New York.

Bearings for high-speed motion-picture film processing machines have always presented rather unique engineering problems. These problems are harder to overcome with color-film processing solutions which have higher corrosive properties. Extended tests on a variety of bearing types led to the development of a two-piece, deep-groove ball bearing with a number 316 (18-8) stainless-steel retainer that has low friction and excellent life characteristics when operated in either black-and-white or color-film processing solutions.

Plastics in a Motion-Picture Processing Machine

JOHN W. RAYMOND, AirLab, Phoenix, Ariz.

Many plastics provide excellent chemical resistance and ease of fabrication. Their flexibility, low joint strength and heat distortion require special consideration in machine design. Utilizing hot impinged air drying and compactness, AirLab has built a 16mm, black-and-white, negative-positive machine using Uscolite, Epon, Tygon, Nylon, and Neoprene to make racks, elevators, piping, special valves, sheaves and tank linings simply and at low cost. Results indicate the suitability of some of these materials in a color machine.

Processing Methods for Use With Two New B&W Reversal Films

C. E. IVES, J. W. ZUIDEMA, N. A. EXLEY and C. C. WILT, Eastman Kodak Co., Rochester, N.Y.

Two new 16mm black-and-white reversal films have been introduced to satisfy the present-day requirements for extended speed range, improved picture quality and ease of processing in rapidly working baths at normal and elevated temperatures. A study has been made of the reversal process with reference to the needs of these films when handled on various types of continuous and batch equipment of practical interest. Recommendations are made for processing bath composition and replenishing practice for obtaining highest quality and consistent results.

A Machine for Cleaning Motion-Picture Film

JOHN R. TURNER, STANLEY L. SCUDDER and EDWARD H. DEANE, Eastman Kodak Co., Rochester, N.Y.

An experimental machine is described for the cleaning of motion-picture film. The successive stages in the machine include spray application of detergent solution, spray rinsing, pneumatic squeegee and impingement drying. This entire sequence of operations requires about 12 sec. The machine is also useful for the removal of alkali-soluble lacquer coatings.

12:30 P.M. GET-TOGETHER LUNCHEON

A. W. TRUEMAN, Canadian Film Commissioner.

A CONCURRENT SESSION

2:00 P.M. Laboratory Practice Session II

Splicing of Motion-Picture, Polyester Film Base and Standard Acetate Safety Film Base by the Butt-Weld Method

LEONARD A. HERZIG, Prestoseal Manufacturing Corp., Long Island City, N.Y.

This paper describes an improved method and apparatus for butt welding and butt splicing of polyester film base and standard triacetate film base. The principle is a combination of a controlled heat and cooling gradient applied under pressure within a given time cycle. Both the method and apparatus for butt welding for similar type bases and a method of butt splicing by the use of an additional high temperature transparent adhesive sliver are described. The combination of both methods used simultaneously is also discussed.

Spray Processing in a Commercial Laboratory

RALPH D. WHITMORE, JR., Du Art Film Laboratories, New York.

The design of a spray processor, four of which are now in full operation, using impingement drying, was based on both experimental data of the last two decades and operational experience gathered during the last two years. These are used for developing 16mm and 35mm black-and-white negatives and positives of all types at 80 F. The great versatility of the units, along with accurate sensitometry and chemistry, has increased both quality and volume in the laboratory.

Scene-Change Cuing in Motion-Picture Printing

ROBERT C. LOVICK, J. MARVIN SEEMANN and JOHN G. STOTT, Eastman Kodak Co., Rochester, N.Y.

Some of the methods for scene-change cuing used in professional motion-picture printing are presented. Advantages and difficulties inherent in the various techniques are discussed. Methods are described for improving electrical scene-change cuing by using a split roller switch, aluminum adhesive tape patches, a modified Ripley electronic relay, and a magnetic recording time-delay device. The accuracy of the edge notch and electrical scene-change cuing systems is demonstrated.

Improving Contact Motion-Picture Printers Through the Use of Internally Directed Air

HOWARD F. OTT and ROBERT C. LOVICK, Eastman Kodak Co., Rochester, N.Y.

Adequate contact in printers is generally obtained through the use of close-fitting pressure shoes, roller gates, or by air applied to the base of the raw stock. A method of directing the air on the base of the negative is described. The advantages are discussed.

Increasing the Washing Rate of Motion-Picture Films With Salt Solutions

R. W. HENN and J. I. CRABTREE, Eastman Kodak Co., Rochester, N.Y.

Absorbed thiosulfates may be effectively eliminated from films by the use of salt solutions. The salts may be employed in the wash water, as when washing with sea water, or as a separate bath previous to washing. The rate of elimination is largely controlled by the anion, and monovalent anions such as acetate and chloride are less effective than polyvalent anions such as sulfate, sulfite, phosphate and citrate. These principles are incorporated in the Kodak Hypo Clearing Agent. The effectiveness of this bath is most striking with films fixed in strongly hardening alum fixing baths and washed in cold water. Under these conditions it is not unusual to have the hypo reduced to 1% of that left by washing alone for equal periods. The results obtained when this product is applied to machine processing of motion-picture and microfilm are described. In general, savings are effected in both the time required and the water consumed, while very low levels of residual hypo are attained.

MONDAY AFTERNOON A CONCURRENT SESSION Television Studio Lighting Session I

2:45 P.M. Television Studio Lighting Session I

Light Sources for the TV Studio

GEORGE T. HOWARD, General Electric Co., Cleveland.

Many factors should influence the selection of a light source for TV studio lighting. The characteristics of existing sources are reviewed with emphasis on features that determine their acceptability or unacceptability.

Carbon Arcs for TV Studio Lighting

R. B. DULL and J. G. KEMP, National Carbon Co., Fostoria, Ohio. The performance of typical carbon arcs suitable for TV studio lighting, particularly for special effects on stage and for process projection in both black-and-white and color TV, are described. Color modified carbons, the light from which can be mixed with that from other types of light sources, with little or no filtering, are emphasized.

Color Television Lighting Control

ROBERT W. BYLOFF, National Broadcasting Co., New York.

This paper first traces the evolution of the presently used lighting systems for color TV studios from those first employed in monochrome television. A typical system will then be studied along with quantitative design considerations. Dimmer and interconnection apparatus currently in use will be described, and the author will give his views on what the aims of future system designs should be and will tell of two new pieces of apparatus now under development. A number of slides of NBC lighting facilities will be shown.

Xenon Lamps

W. THOURET, Westinghouse

Fluomeric Lamps for TV

M. MACKSOUD, Duro-Test Co.

Lighting for Opaques on TV

H. N. KOZANOWSKI, Radio Corp. of America, Camden, N.J.

The use of 3-V Film Cameras to provide high-quality color TV reproduction of color opaques has brought new requirements for lighting sources. These must cover uniformly a limited field at light levels of the order of 10,000 ft-c. Such levels are currently in use for monochrome TV reproduction of opaques. Various methods of obtaining adequate illumination for color are compared.

MONDAY EVENING A CONCURRENT SESSION 6:30 P.M. Tour of Du Mont Telecenter (I)

MONDAY EVENING A CONCURRENT SESSION 7:00 P.M. Laboratory Practice Session (III)

A 16mm Color Internegative Film for Use in Color Motion-Picture Photography

D. M. ZWICK, H. J. BELLO and C. E. OSBORNE, Eastman Kodak Co., Rochester, N.Y.

A color film for use in making 16mm motion-picture internegatives from Kodachrome and other reversal originals is described. These internegatives can be used to produce release prints on color positive film such as Eastman Color Print Film, Type 7382. The internegative contains colored couplers to provide masking for improvement in color reproduction. Film structure, processing and sensitometric characteristics, and printing characteristics are described.

Silver Soundtracks on a Reversal Color Print Film

ROBERT C. LOVICK and RICHARD L. WHITE, Eastman Kodak Co., Rochester, N.Y.

This paper discusses methods of obtaining positive silver soundtracks on reversal color films. Data are given concerning the requirements of negatives and internegatives for soundtrack printing, exposure balance determination and densitometry on Eastman Reversal Color Print Film. Data from distortion tests are presented for both normal and special negatives.

Ion-Exchange Recovery of Eastman Color Developers

JOHN H. PRIESTHOFF and JOHN G. STOTT, Eastman Kodak Co., Rochester, N.Y.

Generally, motion-picture processing machines are continuously replenished to maintain solution composition. The chemical cost of processing Eastman Color Negative and Eastman Color Print films can be reduced by recovering the overflow developers displaced by the replenisher and ordinarily discarded. The color negative and print developers are percolated through an ion exchange resin bed and the effluent solutions are reconstituted to replenisher composition. These rejuvenated developers are then suitable for use as replenishers.

First U.S. Installation of Arri Color Developing Equipment

ROBERT E. JOHNSON, Byron, Inc., Washington, D.C.

A modern positive-negative color developing installation built around the Arri Color Machine has recently been completed by Byron, Inc. This installation makes extensive use of polyvinyl chloride plastics both in machine design and auxiliary equipment. An existing building had to be completely modified before adding to an existing laboratory the new equipment, including chemical mix, control, and developing sections.

Calibration of Color Motion-Picture Printers

JACK E. PINNEY and WILLIAM R. WELLER, Eastman Kodak Co., Rochester, N.Y.

Knowledge of the relationship between printer light and Log E values is necessary for accurate color timing. Information relating color-correction or intensity-changing filters to Log E values is also needed. A method suitable for the calibration of both additive and subtractive motion-picture printers is given.

TUESDAY MORNING — MAY 1 9:00 A.M. "Oklahoma!" Todd-AO—Rivoli Theatre

Dr. WALTER ZIGMUND, American Optical Co., will describe the process and introduce the film. During the showing, the projection booth will be open for inspection by qualified members. A technical staff, including installation experts, will be on hand to answer questions.

TUESDAY AFTERNOON 2:00 P.M. Television Film Commercials Session

Agency TV Departments and How They Function

S. J. FROLICK, Fletcher D. Richards, Inc., New York.

Writing the TV Commercial and Selecting a Producer

PETER CARDOZA, Fuller & Smith & Ross, New York.

What the Agency Expects of a Producer

G. DAVID GUDEBROD, N. W. Ayer, New York.

What the Producer Expects From an Agency

ROBERT KLAEGER, Transfilm, Inc., New York.

PANEL DISCUSSION

The authors of the above papers will be joined by:
WILLIAM ARLINGHAUS, Modern Talking Picture Service, New York
BEN BLOOM, Movielab, Inc., New York.
WILLIAM NEMETH, Movieoptics, Inc., New York.

This panel is representative of the many agency, studio and laboratory activities engaged in service-distribution of TV films, domestically and overseas; traffic and account control; opticals; spectacular color production; studio traffic; and laboratory control.

TUESDAY EVENING

5:30 P.M. Tour of NBC Colonial Studio

6:30 P.M. Tour of Du Mont Telecenter (II)

WEDNESDAY MORNING — MAY 2

A CONCURRENT SESSION

9:00 A.M. Television Studio Lighting Session II—
Belmont Plaza Hotel

Lighting Guide Posts (Film)

P. WITTLIG, CBS Television, New York.

Monochrome Television Lighting Survey and Report

WM. R. McCOWN, WSM-TV, Nashville, Tenn.

On April 21, 1955, at a meeting of the Television Studio Lighting Committee in Chicago, it was recognized that information on the lighting practices of various stations would help in furthering committee projects. The Midwest Regional Subcommittee agreed to conduct a survey of some 341 stations in 25 states located in the Central Section of the country. The results of this survey are presented.

Color TV Lighting Survey and Report

GERALD F. RESTER, Radio Corp. of America, Camden, N.J.

The purpose of this survey is to determine current lighting practices of TV stations engaged in live color-program origination. The ultimate goal is for the SMPTE Lighting Committee to make recommendations that might improve the state of the art. The findings of the survey are presented, broken down into the following categories: General, Studios, Lighting Materials, Personnel, Instrumentation, Make-Up, and Miscellaneous Problems and Comments. Brief observations and a summation are given.

Lighting in Black-and-White at WSM-TV for a Future in Color

WM. R. McCOWN and JACK HOPKINS, WSM-TV, Nashville, Tenn.

This paper tells how one medium-sized station is handling its studio lighting, not only in color telecasting but also in feeding network programs to the rest of the country. It is not intended to be a critique on studio lighting, but, more especially, right or wrong, the story of how one station applies its six years' experience in practice, with the ever-present knowledge that color will one day take over in the studio.

After Two Years of Local Color Origination

PHILIP W. WYGANT, WBAP-TV, Fort Worth, Texas.

Wattage per square foot of studio floor space was increased from 18.5 to approximately 60. The air-conditioning capacity was almost doubled. A light level of 400 ft-c. has been found practical. Lighting for color is not so difficult as some might think. Most any person with an understanding of the capabilities and requisites of the color camera and with some artistic ability can light for a good color picture.

Lighting the Network Color Productions

E. CARLTON WINCKLER, CBS Television, New York.

Because network programming usually includes greater scope of subject material than is possible on local stations, the lighting of these programs also presents a greater variety of problems. The lighting of larger areas and the variation of this lighting to accentuate a wide variety of moods and camera angles becomes of paramount importance. The technique developed in lighting network programs uses interesting combinations of all types of lighting equipment and a wide range of wattages to obtain the balance and the intensities necessary for the cameras while operating within the dramatic structure. These techniques and methods will be discussed in detail.

A Comparison of Lighting Techniques Used in Live and Filmed Television Programs

CAMERON G. PIERCE, American Broadcasting Co., Los Angeles, Calif.

Lighting of films for television takes into account the idiosyncrasies of the television film reproducing camera and must supply proper reference to insure accurate reproduction of the original scene. Lighting of live programs must meet the requirements of the image orthicon camera and allow for electron redistribution, image ghosts,

etc. Both of the above techniques include limitation of contrast range, control of average picture brightness and proper picture composition.

WEDNESDAY MORNING

A CONCURRENT SESSION

9:00 A.M. Report of the Activities of the Magnetic Sound Subcommittee of the Sound Committee—
Status of Standards, Magnetic Test Films and
Future Activities of the Subcommittee

ELLIS W. D'ARCY, Chairman

The number of frames by which the sound leads the picture on a 16mm film with magnetic track has been extensively debated. To give all interested parties an opportunity to air their opinions before current efforts at standardization crystallize, this session will include an open forum to which all broadcasters and equipment manufacturers affected by this question are invited.

WEDNESDAY AFTERNOON

A CONCURRENT SESSION

2:00 P.M. Television Studio Lighting Session III—
Belmont Plaza Hotel

Relation of Staging to TV Lighting

R. DAY, NBC

The Art of Color TV

SALVATORE J. BONSIGNORE, CBS Television, New York.

Procedures outlined in this paper will attempt to compare black-and-white and color TV. Some procedures were developed and tested on a theoretical basis; others evolved after practical experience in color TV production. These techniques and procedures are offered with the intent of making commonplace the means for presenting creative color pictures which satisfy existing technical standards.

TV Studio Illumination

W. WILSON, Westinghouse

General Considerations of Lighting for Motion Pictures for Color Television

T. G. VEAL, Eastman Kodak Co., Rochester, N.Y.

The discussion outlines the considerations in lighting the scene of which color motion pictures are to be made for transmission over a color TV system. In making such pictures it is necessary to determine, in so far as possible, what technically constitutes a satisfactory picture for the purpose. To do this, it is necessary to examine critically the requirements of brightness, contrast, resolution, and color quality in photographing the scenes to make them suitable for television reproduction.

Camera Matching and Illumination Control for Color TV

EDWARD P. BERTERO, National Broadcasting Co., New York.

In the development of color camera matching technique it was found inadvisable to use colored paper or other opaque material illuminated by direct front projection. The reasons are: (1) Illumination of the test chart is extremely critical in obtaining the exact values of each color chip on a day-to-day basis. (2) Generally, stable color papers do not have the degree of reproducibility in manufacture and the degree of saturation required for precise measurement purposes. A color camera alignment and matching technique has been developed using 8 × 10 transparent slides of both black-and-white and color. This technique required that the source of illumination for the slides be of the proper brightness and spectral response normally encountered on a live set.

Switching and Controls for Black-and-White and Color TV Studios

JAMES THOMPSON, Century Lighting

Economics of TV Lighting

GEORGE GILL, Gill Southern Associates, North Miami, Fla.

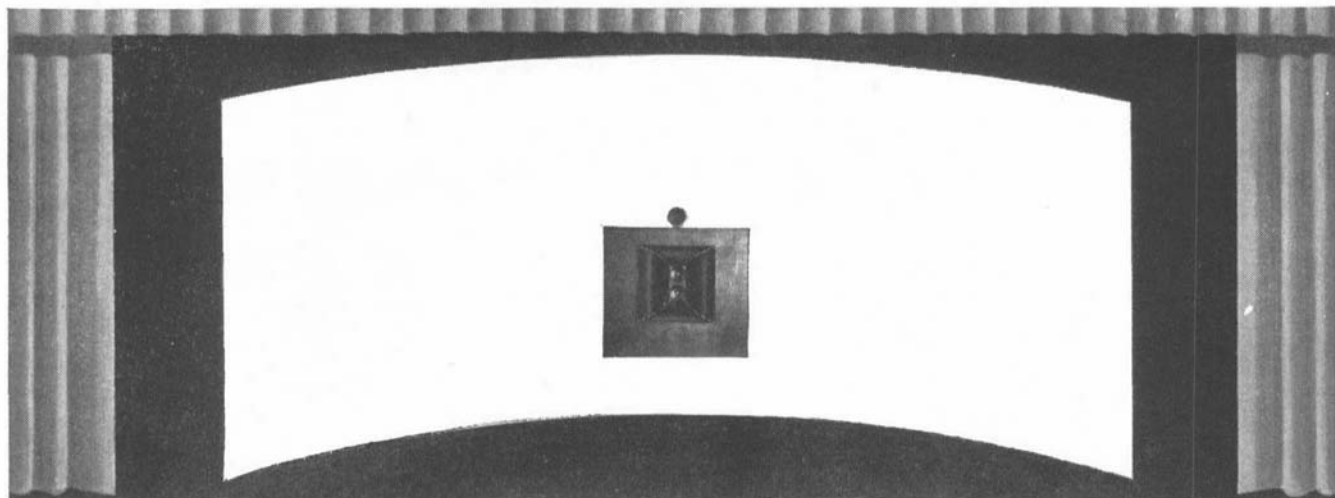
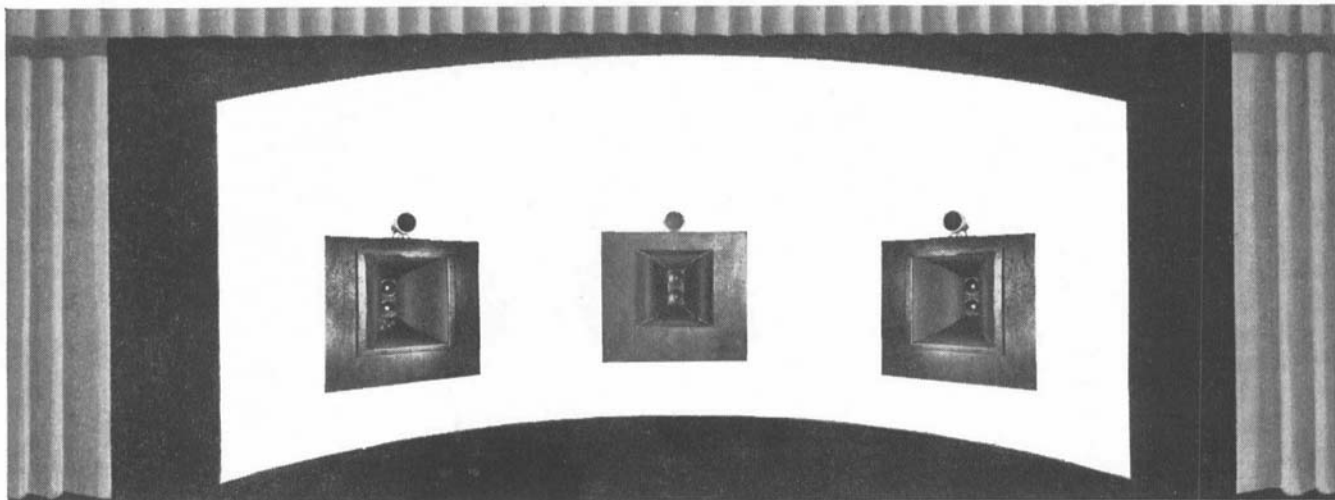
Providing fully adequate studio lighting facilities is compared with minimum lighting facilities by comparisons as to instrument types, beam types, use of accessory equipment, type and quantity of outlets, instrument selectivity and methods to adjust intensity. The minimum capital investments and operating costs are summarized along with the importance of studio time and labor costs in relocating lighting instruments and the importance of technical and artistic perfection of broadcast picture.

West Coast Views of Monochrome TV Lighting

G. PETERSON, CBS, Hollywood.

STEREOPHONIC SOUND* IS BETTER

THAN ANY SINGLE CHANNEL SOUND



Give your customers the best

Get the full dramatic brilliance of sound of today's top-rated motion pictures!

The new Westrex Stereophonic equipment reproduces the full range, tone and quality recorded on the film. This new equipment is simpler in design and cheaper to install and maintain. Prices are 5% to 30% lower than comparable 1955 equipment.

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**WEDNESDAY AFTERNOON
A CONCURRENT SESSION
2:00 P.M. Motion-Picture Equipment Session**

Automatic Film Inspection

ROBERT GRUNWALD and RICHARD WALLACE, The Harwald Co., Evanston, Ill.

An automatic system for inspection of 16mm sound release prints is described. This system is embodied in the machines which have been in use in 16mm nontheatrical distribution for several years; recently a model for television use has been introduced. The application of these units to inspection and editing in various fields is discussed along with the principles of their operation.

A Dual-Purpose Sound Synchronizer

IRVING BROWNING, The Camera Mart, New York.

The Dual Sound Reader consists of a sound reproduction head, optical and magnetic, a separate base which will accommodate any motion-picture viewer, and a combination amplifier-speaker. It differs from other equipment of this nature in its wide range of applicable uses: for editing single- and double-system sound film in lip-synchronization; used from left to right or right to left; and with a mixing unit it can be used with two or more soundheads at the same time.

A 35mm Projector for Color TV

WILLY BORBERG and E. A. CALAMAI, General Precision Laboratory, Pleasantville, N.Y.

A 35mm projector for use with vidicon pickup tubes is described. Long light application pulses are made possible by a 2-3 intermittent movement with fast pulldown.

High Efficiency Rear-Projection Screens

C. R. DAILY, Paramount Pictures Corp., Hollywood.

Using a new type of high efficiency rear-projection screen, a 40-ft. wide projected color picture can now be photographed on standard Eastman Color Negative Film, Type 5248, with the camera operating at $f/4$ at 24 frames/sec. Data will be presented on the transmission and reflectance characteristics of this new screen, together with data on several other experimental screens which have wide-angle and high-transmission characteristics.

Film Projection With Large Reels

JASPER S. CHANDLER, Eastman Kodak Co., Rochester, N.Y.

The concept of "effective weight" is developed as a means of rating reels according to their relative film damaging potential. Useful relationships between size, capacity, stiffness, weight and effective weight are presented for all 16mm reel sizes. The importance of a large ratio of core diameter to outside diameter for the reel is stressed. Some standardization proposals and design features of the projector for use with large reels are suggested.

Film: Early Projector Mechanisms

DON MALKAMES, Tuckahoe, N.Y.

This is a 2000-ft black-and-white 35mm film made in the interests of projection history.

Film: Film Firsts

PAUL KILLIAM, "Movie Museum," New York

An informal talk of historical interest illustrated by film clips of vintage 1895 to 1915, demonstrating early examples of creative cinematography—cross cutting, moving camera, animation, experimental sound, close-ups, color, reconstructed Boer War news events, etc. Are these "firsts," or can still earlier examples be discovered? Were they brought about by genius or sheer necessity?

WEDNESDAY EVENING

7:00 P.M. Underwater Television Session

Remote Control Apparatus for Television Cameras

J. D. ROBINSON, American Machine & Foundry Co., Greenwich, Conn.

Underwater Observation by Television

EDWIN A. LINK, Link Aviation Inc., Binghamton, N.Y.

A practical application of television in underwater exploration will describe expedition to Silver Shoals by Mr. Link in his motor vessel "Sea Diver." His presentation will relate the history of loss of the vessel "Nuestra Senora," the treasure recovery by Capt. William Phipps, in 1688, and contrast the Phipps and Link methods. A color film will record the 1955 Silver Shoals expedition.

Underwater Exploration by Television

DOUGLAS ALLANSON, Pye Limited, Cambridge, England.

Problems in underwater observation are outlined to permit an appraisal of the usefulness of television applied to this field. The advantages and limitations of television are presented and an attempt

is made to draw up an ideal specification. A general-purpose camera based upon this specification is described. The problems of lighting and application are discussed and future trends in design are suggested.

**THURSDAY MORNING — MAY 3
A CONCURRENT SESSION
9:00 A.M. High-Speed Photography Session I**

Multiflash Microsecond Flash

FREDERICK BARSTOW and HAROLD E. EDGERTON, Edgerton, Germeshausen, and Grier, Inc., Boston, Mass.

Equipment that produces 20 flashes of light at controlled intervals is described. Each flash has a duration of about one microsecond and a peak intensity of 600 kilocandle power. The interval between flashes is controlled by an oscillator. The minimum interval between flashes is 10 μ sec. Triggering is arranged by a voltage signal such as from a photoelectric cell or microphone. Examples showing bullets are used as illustrations.

Television Picture Tube Implosions

PAUL A. KRISTENSEN, Engineering Extension Service, Iowa State College, Ames, Iowa.

This is a film showing high-speed photographs of implosions of various TV picture tubes. It was taken with a Wollensak Fastax high-speed camera. After some of the implosions, the resulting pieces of glass and distances at which they fell are shown. This film is guaranteed to instill in the viewer a healthy respect for the dangers of mis-handling picture tubes. A narration over the film will be provided.

The Maintenance Problem Forecaster in Automation

N. W. RODELIUS, Armour Research Foundation, Evanston, Ill.

Repeated machinery failures in large industrial plants can be predicted and solved by an engineering study of high-speed and regular motion pictures of production equipment. It is the intent of this paper to point out that, with the introduction of automation, plant maintenance engineers will be required to anticipate and prevent breakdowns.

Kodak Films for High-Speed Motion-Picture Photography

WAYNE E. HUMM and A. EARL QUINN, Eastman Kodak Co., Rochester, N.Y.

During the past year new Kodak films have become available that are particularly suitable for use in high-speed photography. The purpose of this paper is to present the sensitometric relationships of the various films presently available from the standpoint of both conventional sensitometry and high-intensity, short-exposure time, flash-lamp sensitometry. The films which are suitable for both reversal and negative use are included in both the reversal and negative test comparisons. Practical high-speed camera picture tests are shown. The films considered are Cine-Kodak Super-XX, Cine-Kodak Plus-X Reversal, Cine-Kodak Tri-X Reversal, Kodak Linagraph Pan (both old and improved types) and Cine-Kodak High-Speed Infrared.

THURSDAY MORNING

**A CONCURRENT SESSION
9:00 A.M. Sound Recording Session I**

Resynchronizing Optical Tracks with Tape

RICHARD H. RANGER, Rangertone, Inc., Newark, N.J.

Sound and picture put over the story so much better when well synchronized, that any steps which improve this lock-in are worth while. With sound not simultaneously recorded with the picture taking, the problem becomes increasingly difficult. Sound on tape offers the advantage of normal accurate lock-in, but also offers the opportunity of fluid adjustment when necessary. A method of dividing the recorded sound into two alternate tapes used in much the same manner as A and B rolls gives a facility for adjusted timing during the inactive slugs in each tape to permit very close synchronizing, with no speed changes in the actual reproduced sound.

Editorial Sync Conversion Equipment for Single-System Magnetic-Sound Cameras

ELLIS W. D'ARCY, EDL Company, Gary, Ind.

The paper describes a magnetic-sound camera conversion and a sync-point shifting apparatus. The paper analyzes the various proposals for securing editorial (dead) sync on single-system magnetic-sound picture negatives, and describes equipment designed to secure dead sync for editing purposes and an apparatus for subsequent sync-point relocation for standard-sync lead distance, for release purposes. It also introduces a dead-sync viewer-type of magnetic-sound editing equipment.

The Opti-Mag Film and System

C. ROBERT FINE and ELMER O. WILSCHKE, Fine Sound, Inc., New York.

Opti-Mag has been developed to facilitate editing and mixing by continuing the convenient practice of editing optically and permitting the desirable features of mixing from magnetic film. The optical soundtrack is engraved on a specially prepared lacquer coating on normal safety-base film and requires no processing. The magnetic coating is standard magnetic coating as supplied on commercial 35mm magnetic film. The optical and magnetic tracks are recorded simultaneously, and since the optical modulation is adjacent and coincident to the equal magnetic information, the film can be cut straight across for editing and splicing. This paper has been prepared to show the versatility of the combined optical-magnetic film and to describe the process and the equipment involved.

An Audio Flutter Weighting Network

FRANK A. COMERCI and ELISEO OLIVEROS, Material Laboratory, New York Naval Shipyard, Brooklyn, N.Y.

Listener preference rankings of selected samples of programs containing many types of flutter will be compared to measurements of the same flutter using a meter weighted with respect to flutter rate in accordance with the threshold of perceptibility. It is shown that the correct weighting curve varies with the level of flutter and that modification should be made to the flutter meter in order to obtain objective rankings of various types of flutter which will agree with subjective rankings of program containing the same type of flutter.

A Completely Self-Contained, Hand-Held, 16mm Single-System Magnetic-Sound Camera

LOWELL A. WILKINS, Magnetic Sound Camera Corp., Chicago.

A completely new 16mm single-system magnetic-sound camera is described. The camera has a transistor audio amplifier, a transistor bias oscillator, and power supply for both, built inside the camera body. The VU meter is built inside the viewfinder. The camera's light weight, compact design, and its ability to record high-quality single-system magnetic sound make it a very useful unit for television, news-reel work, educational films and related fields.

Magnetic 16mm Single-System Sound-on-Film Recording Camera Equipment

W. BACH, E. M. BERNDT, A. N. BROWN and R. L. GEORGE, Berndt-Bach Inc., Los Angeles.

A new single-system camera method is described for simultaneously recording a high-fidelity magnetic 16mm soundtrack lip-synchronized with an optical picture in color or black-and-white, for magnetic 16mm single-system sound recording of live-pickup reproduction quality, instant monitoring of the soundtrack being recorded in the camera, together with greatly increased flexibility of picture processing. A demonstration film with lip-synchronized magnetic sound will be projected.

Periodic Testing of Audio Equipment

MAURO ZAMBUTO, Transound Inc., New York

A new audio test cabinet for comprehensively testing professional recording and broadcasting equipment.

THURSDAY AFTERNOON A CONCURRENT SESSION 2:00 P.M. Sound Recording Session II

PANEL DISCUSSION

The Use of Pre-Striped Magnetic Film

ELLIS W. D'ARCY (Moderator), EDL Company, Gary, Ind.

WALTER BACH, Berndt-Bach

EDWARD SCHMIDT, Reeves Soundcraft Corp., Springdale, Conn.

GARLAND C. MISENER, Capital Film Laboratories, Washington, D.C.

JOHN FORREST, ANSCO, Binghamton, N.Y.

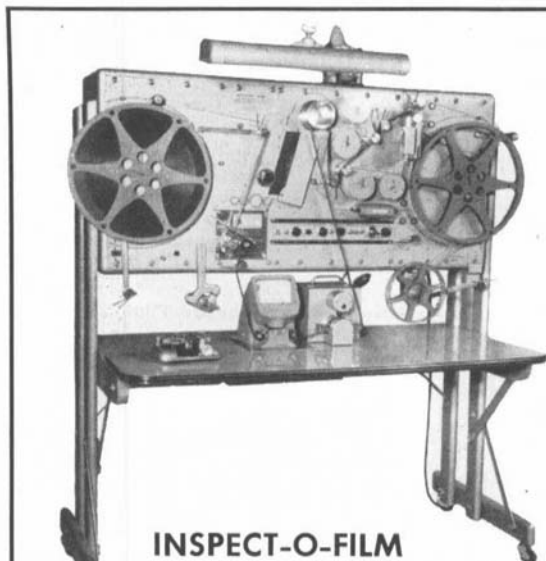
R. F. DUBBE, Minnesota Mining & Mfg. Co., St. Paul, Minn.

GEORGE LEWIN, Army Pictorial Center, L.I.C., N.Y.

THURSDAY AFTERNOON A CONCURRENT SESSION 2:00 P.M. High-Speed Photography Session II

A New Missile Scoring Camera

ROBERT D. SHOBERG, Wollensak Optical Co., Rochester, N.Y.



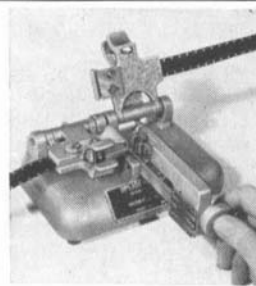
INSPECT-O-FILM

Automatically detects torn or enlarged sprocket holes, sprocket punch, broken film, weak splices or any defect that would cause a poor showing. Counts good splices and cleans film. Try automatic film inspection for just \$75 a month and assure your customers perfect show every time. Model K (pictured above) is complete with editing facility; trial rental slightly higher. Write for descriptive literature.

PROTECT-O-FILM PREVENTS COSTLY FILM DAMAGE...

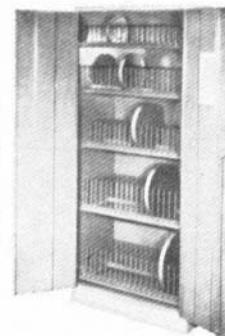


Works four ways to increase film life, improve projection quality. Cleans completely, reduces wear, prevents dirt and dust collection, strengthens film base. Try this amazing film conditioner yourself. Pint, just \$1.75.



SPLICE-O-FILM

A professional unit for making strong, low-visibility splices quickly and easily. Features a semi-automatic, pre-set scraper that removes emulsion to the precise depth every time. Precision-made, easy to maintain. Models for negative or positive use, combination 8mm-16mm or 35mm. Perfect for use with the Harwald Inspect-O-Film.



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Evanston, Ill.

Environmental Test of High-Speed Camera

CARL J. BRASSER, Fairchild Camera & Instrument, New York

Plans for the Third International High-Speed Photography Congress (A Report)

JOHN H. WADDELL, Fairchild Camera & Instrument, New York

THURSDAY EVENING

6:45 P.M. Cocktails

8:00 P.M. Banquet and Dance (black tie preferred)

FRIDAY MORNING — MAY 4

9:00 A.M. Television Session I

New Zoom Lens Developments for Telecasting and Industrial TV

FRANK G. BACK, Zoomar, Inc., Glen Cove, N.Y.

A new type of Zoomar will be demonstrated which has a zoom ratio of more than 1:6. This new Zoomar is manufactured in two models, one for image-orthicon cameras with a range from 2½ to 16 in. and one for vidicon cameras with a range from 20mm to 120mm.

Optical Problems in Industrial and Institutional TV

JOSEPH W. BELCHER, General Precision Laboratory Inc., Pleasantville, N.Y.

Some interesting optical problems in connection with vidicon pickup equipment will be discussed from a practical viewpoint telling how they arose and the solution.

Recent Improvements in Black-and-White Film Recording for Color TV

WILLIAM L. HUGHES, Engineering Experiment Station, Iowa State College, Ames, Iowa

At the 1955 SMPTE Convention at Chicago, a method of recording color television images on black-and-white film was described. At that time, certain difficulties regarding light efficiency, noise, and image definition were yet to be resolved. In the last year, refinements have been made in the electronic and optical characteristics of the system to the extent that the overall picture quality now compares very favorably with that obtainable on 16mm color film. This paper is concerned with a discussion of how these refinements were achieved. Several color slides of "before" and "after" pictures will be shown. These slides will be taken from a dichroic display and will represent the overall results obtainable from the system.

Color Kinescope Recording on Embossed Film

C. H. EVANS and R. B. SMITH, Eastman Kodak Co., Rochester, N.Y.

In the past, a special form of black-and-white film with tiny cylindrical lenses embossed in its base has been employed in conjunction with a banded color filter for additive color photography. Such film is readily adaptable to color kinescope recording, and in this application the banded filter is not required. Color aspects of the problem can be reserved to the television system. The advantages of color kinescope recording on embossed film include economy, faithful color reproduction, high efficiency and rapid film processing. The latter is particularly important in meeting the demands of time-zone-delayed broadcasting or "quick kine." Prints for subsequent distribution can be made on ordinary subtractive color films.

FRIDAY AFTERNOON

2:00 P.M. Television Session II

Closed-Circuit TV Theme

KEN THOMAS, Special Devices Center, Office of Naval Research, Port Washington, N.Y.

The paper will discuss the present technical state of readiness of instructional closed-circuit television, refer to potential support from the built-in TV communication habit among those it would serve, and discuss research in TV applications to help improve the volume and accuracy of communication. It will then identify some present obstacles to widespread use, discuss them, and conclude with the presentation of a tested procedure for planning instructional closed-circuit television.

The Luminance of Subjective Black

E. M. LOWRY and J. G. JARVIS, Eastman Kodak Co., Rochester, N.Y.

The subjective phase of tone reproduction requires a knowledge of how the eye reacts; that is, the visual response under a given set of conditions. Two instruments which have proved useful for obtaining this knowledge are described. They are the visual sensitometer and the adaptometer. The particular response investigated and reported is the luminance of subjective black, which may be defined as that value of luminance which is just too low to produce a perceptible visual impression under the luminance distribution existing in the scene being viewed. A fairly simple empirical scheme is proposed for predicting the luminance of subjective black from two easily measured quantities: the luminance of the fixation point and the average scene luminance.

Closed Circuit TV, Its Practical Installation and Operation

JOHN R. HOWLAND, Dage TV Div., Thompson Products Inc., Michigan City, Ind.

Closed circuit television involves techniques less complicated than those required of standard broadcasting. Its field of use grows where its unique service is adapted to local requirements and is performed adequately at reasonable cost. Practical installation requires critical analysis of the particular mission, which will differ, for instance, in the bank, the warehouse, the school laboratory and the school lecture room. Practical operation requires a realistic system and schedule of use and a comprehensive plan of maintenance.

Television as a Military Intelligence and Communications Medium

Lt. Col. NORMAN GRAY and Lt. JAMES C. JANGARATHIS, Army Pictorial Center, Long Island City, N.Y.

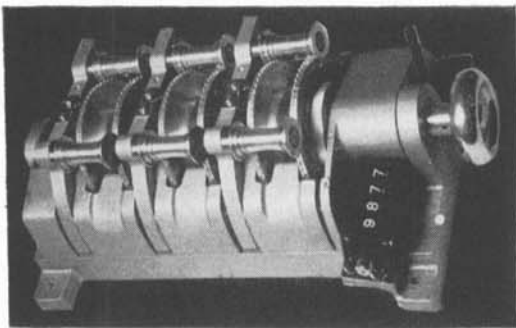
The continuing need for a more efficient intelligence system in the modern army is focusing attention on television as a basic means of communications. This paper summarizes some of the proposed applications for military television, describes types of current interim mobile television units, and presents recent maneuver utilization of 2 units.

Atomic Reactor Construction—A Time-Lapse Film

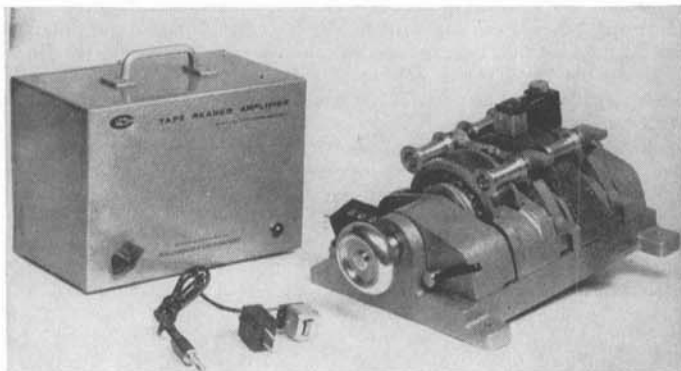
NELSON W. RODELIUS, Armour Research Foundation, Chicago



SYNCHRONIZER HEAVEN



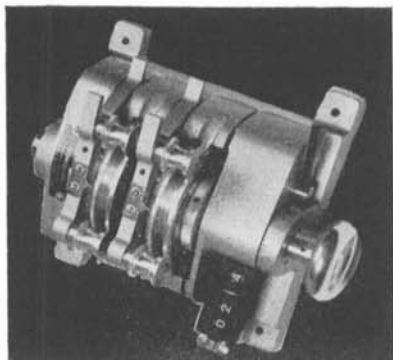
35mm 3-Way Synchronizer \$165.00



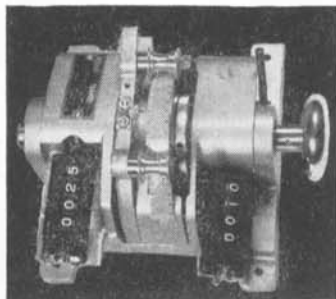
1. Fastens to roller arm of synchronizer.
2. Sync dailies quickly without using editing machine.
3. Ideal for checking sound track for words or effects to be replaced.
4. Fastest and most accurate in locating beginning and ending of words.
5. Tape head can be slid up and back to read a track in any position of fullcoat or magnastripe.

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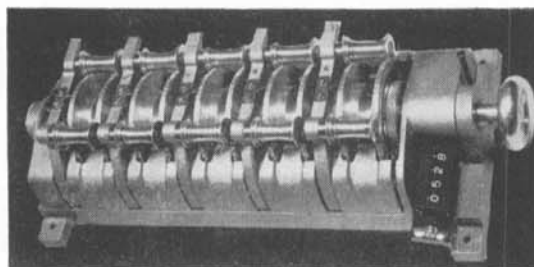
| | |
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| HFC Magnetic Tape Reader Synchronizer attachment | \$34.50 |
| HFC Magnetic Tape Reader Amplifier | 55.00 |
| Complete Unit..... | 89.50 |



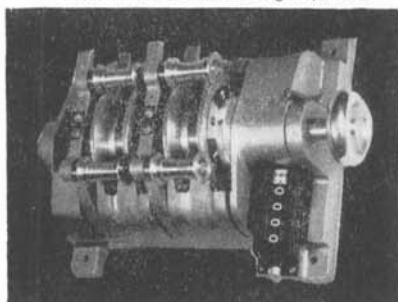
16mm 2-Way Synchronizer \$125.00



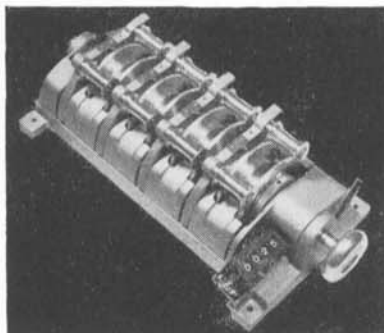
16mm Special Measuring Machine. Counts in 16 & 35mm Footage. \$160.00



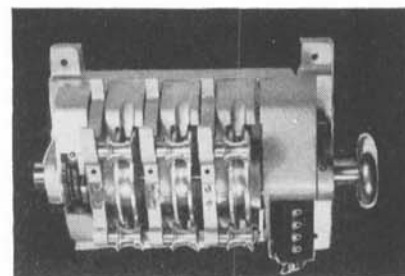
35mm 5-Way Synchronizer \$225.00



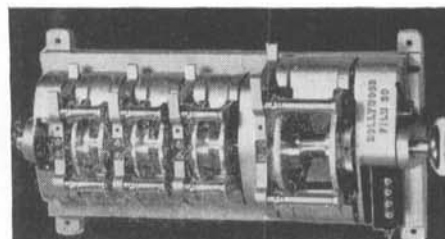
35mm 2-Way Vistavision Synchronizer with Footage & Frame Counter \$160.00



35mm 4-Way Synchronizer \$190.00



16mm 3-Way Synchronizer \$165.00



65-35mm Combination Synchronizer \$380.00

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