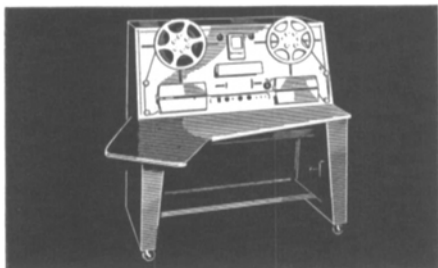


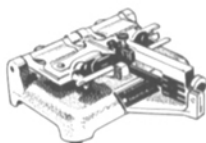
Film Executives PROFESSIONALIZE YOUR FILM ROOM and Save Money



Harwald's precision automatic film inspection equipment is the accepted world standard for modern film libraries—T.V. stations—or wherever motion picture film is handled. Inspect-O-Film automatically finds breaks, torn sprocket holes, scotch tape "splices", any cause of film failure. Even those defects that are virtually impossible to find by hand. Also provides for film cleaning, conditioning, timing and editing.

Seven models available.
See catalog for complete listing.

**SPLICE
-O-
FILM**



For the easiest, strongest splices ever—in just 9 seconds! Accurate for 1/10,000 of an inch. Complete with electric heat and automatic scraper. Used by professionals everywhere. Money back guarantee. \$175.00.

Get the full story. Talk to our engineering representatives and write for our catalog containing a complete line of film room equipment.

THE HARWALD COMPANY

1245 CHICAGO AVE., EVANSTON, ILL.
DAvis 8-7070

The Ernemann VII B projector for automatic operation is the subject of the cover story of the November 1962 issue of *Zeiss Ikon Picture and Sound*. Also described is the Dia-Ernemat. The periodical (published in both English and German editions) also presents some interesting illustrations, particularly of the Circarama in Milan and of two motion-picture theaters in Portugal equipped with 70mm installations.

UHF Translators for Expanding Tele-

Abstracts

Abstracts of papers appearing in other journals, chosen for their importance and timeliness, are published in the *Journal* from time to time. Most of these abstracts are translations, chiefly from the U.S.S.R., and are made available to the *Journal* by the Research Laboratories of the Eastman Kodak Company. As a rule, translations are made of the foreign language abstracts, not of the paper itself. The respective complete original texts can be consulted at some libraries. Current issues of *Tekh. Kino i Televideniya* can be consulted at, or borrowed from, the Society's Headquarters Office.

Those requiring definitive and thorough searches of current literature and patents are referred to *ABSTRACTS of Photographic Science & Engineering Literature (APSE)* published monthly by the Department of Graphics, School of Engineering and Applied Science, Columbia University in the City of New York, with the editorial cooperation of the Society of Photographic Scientists & Engineers. The editorial and business office of *APSE* is at: 632 West 125th Street, New York 27, N.Y.

The subject areas are grouped below

- Aerial Photography
- Cameras and Equipment (Except High-Speed)
- Color Photography and Color Development
- Data Processing
- Film and Its Properties
- Film Processing (Apparatus and Chemicals)
- High-Speed Photography and Instrumentation
- History
- Printing and Optics
- Projection
- Sensitometry and Image Structure
- Sound Recording and Reproduction
- Space Science
- Television

AERIAL PHOTOGRAPHY

Copying Apparatus for the Printing of Color Aerial Photographs with an Objective Color Setting (in Russian), A. N. Uspenskii, *Trudy Tsentral. Nauch.-Issled. Inst. Geodesii, Aeos'emki i Kartografi*, No. 142, 235-250, 1961; *Referat. Zhur., Fiz.*, Abstract No. 6G273, 1962.

The construction of existing copiers, SKP-1, HAP-1 and AKP-2, for printing color aerial photographs is analyzed. A

description is given of the AKPP-1 printer which has been designed by the Central Research Institute for Geodesy, Aerial Photography and Cartography, and which consists of an additive copying apparatus with objective color setting by the measurement of the overall transparency of the color aerial negative in the blue, green and red zones of the spectrum. The lighting system of the apparatus consists of three parallel combined sources of light, condensers and bandpass light filters, and also special prisms combining the three beams into one which falls onto the negative being printed. The measuring section (a selenium photocell and high sensitivity mirror galvanometer) is illuminated with light which has passed through the negative under which is placed a condenser of large diameter. On this apparatus the setting of the light, after the necessary relation between the color negative on the film and the photographic paper (the calibration) has been found, occupies 20 to 30 sec. Quality of the image in mass copying is preserved and even raised. In the case of negatives which differ markedly among themselves, corrections for type of negative, obtained by calibration, are made exact by a test printing. In practice, however, such a refinement is rarely needed. The AKPP-1 apparatus, in addition to its direct intention, may also be used as a whole-frame densitometer for the measurement of the integral density of color and spectrozonal negatives.—S C G.

CAMERAS AND EQUIPMENT (Except High-Speed)

8mm Motion-Picture Cameras (in Russian), V. G. Pell', *Tekh. Kino i Televideniya*, 6: 70-77, May 1962.

8mm motion-picture cameras for amateurs, made outside the Soviet Union during 1960 and 1961, are reviewed—S.C.G.

The "Rossiya" Universal Cinema (in Russian), M. M. Lisogor, *Tekh. Kino i Televideniya*, 6: 1-8, May 1962.

A description is given of one of the latest and most up-to-date cinemas in Moscow.—S.C.G.

New Goods. The TsYa-1 Objective Color Brightness Meter (in Russian), S. D., *Tekh. Kino i Televideniya*, 6: 58-59, Apr. 1962.

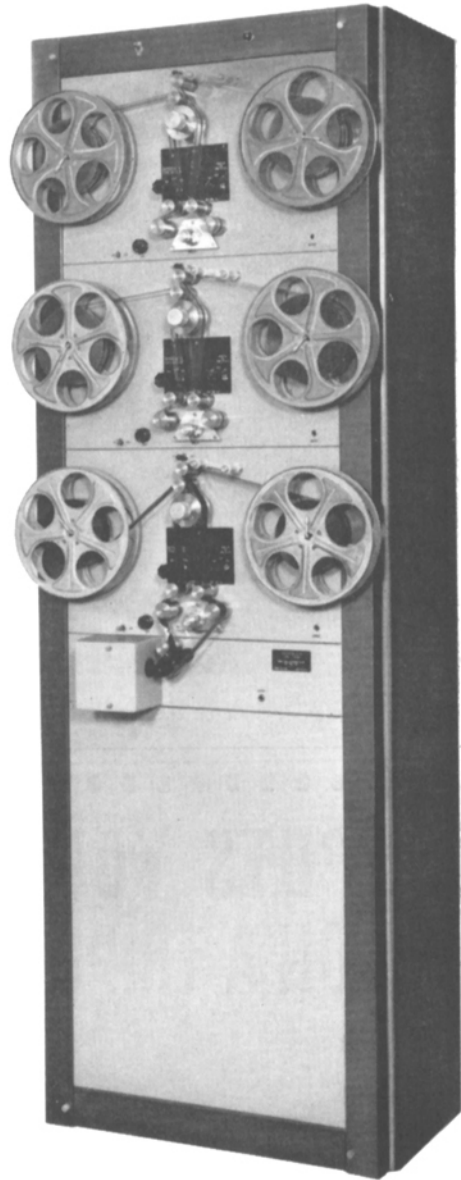
The brightness meter described has recently been produced in the Soviet Union for the measurement of the hue and brightness of surfaces. It has a number of applications in color cinematography.—S.C.G.

M.T.E.

motion picture sound recording equipment



NAGRA
for your original recordings
15 lb. lip-sync recorder,
battery or A.C. operated
for location or studio use.



400 SERIES
magnetic and optical
recorders and dubbers
for your mixing studio.

For Product Catalogue
please write

M.T.E.

Magna-Tech Electronic Co., Inc.
630 Ninth Avenue, New York 36, N.Y. JU 6-7242

COMPLETE 16MM LABORATORY

FAST
QUALITY
SERVICE

write for price schedule



Pan-American Films

735 POYDRAS STREET, NEW ORLEANS, LA., JACKSON 2-5364

- Negative or Reversal Processing
- Color Duplicating
 - Black and White Duplicating
- Work Prints
 - Release Prints
- Editing
 - Sound Recording
- Transfers from 1/4", 16mm, or 17 1/2mm tapes
 - Music Library
- Titling
 - Animation
- Equipment Rentals
 - Equipment Sales

A New Distance Meter for Motion-Picture Cameras (in Russian), F. S. Novik, *Optiko-Mekh. Prom.*, No. 10, 49-54, 1961; *Tekh. Kino i Televideniya*, 6: 87, Apr. 1962.

Consideration is given to the optical system of the combined viewfinder and rangefinder of the 16S-1, motion-picture camera, a stereoscopic rangefinder, and the new construction of the 1KSS camera. Some comments are made on the accuracy of the determination of the distance with the aid of a rangefinder with an optical base.—S.C.G.

The Technique of Underwater Cinematography (in Russian), A. Lebedev and V. Timofeev, *Tekh. Kino i Televideniya*, 6: 26-33, Apr. 1962.

A description is given of apparatus available in the Soviet Union for underwater cinematography, including watertight camera boxes, lighting equipment, buoyant supports for camera and lighting equipment, and diving bases. Underwater photography in natural light and the choice of lenses for underwater cinematography are also discussed.—S.C.G.

The Principles and Capabilities of the MGM Camera 65 System (in Russian), E. M. Goldovskii, *Tekh. Kino i Televideniya*, 6: 34-41, Apr. 1962.

The American MGM Camera 65 system, designed and manufactured by Panavision, takes an image on a special Kodak 65mm negative stock and prints on 70mm stock for projection on giant screens. The performance of the system is analyzed, and it is concluded that the system has no advantages in comparison with wide-gage cinematography direct onto 70mm stock, which is the system favored in the USSR. The main advantage to Metro-Goldwyn-Mayer is judged to be not a technical one but the avoidance of paying royalties on the use of the Todd-AO system.—S.C.G.

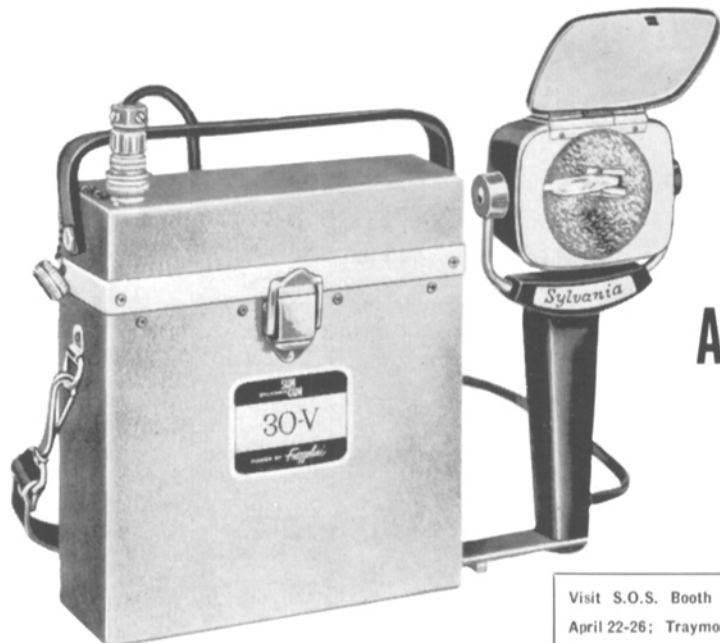
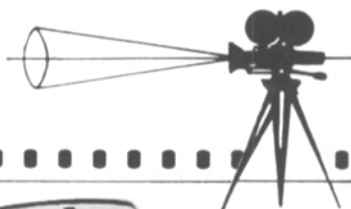
A Camera for the Photography of Moving Objects, V. F. Morgunov, *Zhur. Nauch. i Priklad. Fot. i Kinemat.*, 7: 348-353, No. 5, Sept.-Oct. 1962.

In the camera described, a blind with a vertical slot moves horizontally across a glass negative plate while a series of exposures are made with an automatically operating shutter. The back sight of the viewfinder moves with the blind so that the object of interest can be kept imaged on the slot. Slot width, speed of travel of the slot across the plate and shutter control are adjusted to the speed of the object so that the final negative consists of a series of continuous vertical strips, each of which contains an image of the object being studied, the motionless background joining up to form a continuous picture. Some uses of the camera in the laboratory of a Siberian institute studying the movement of ice on rivers are described.—S.C.G.

COLOR PHOTOGRAPHY AND COLOR DEVELOPMENT

An Investigation of the Tendencies of Color Reproducibility of "FUJI" Color

S.O.S. PUTS YOUR STUDIO ON A TRIPOD



WITH
LIGHT
YOU CAN
USE
ANYWHERE!

\$395

Complete with
Power Pack

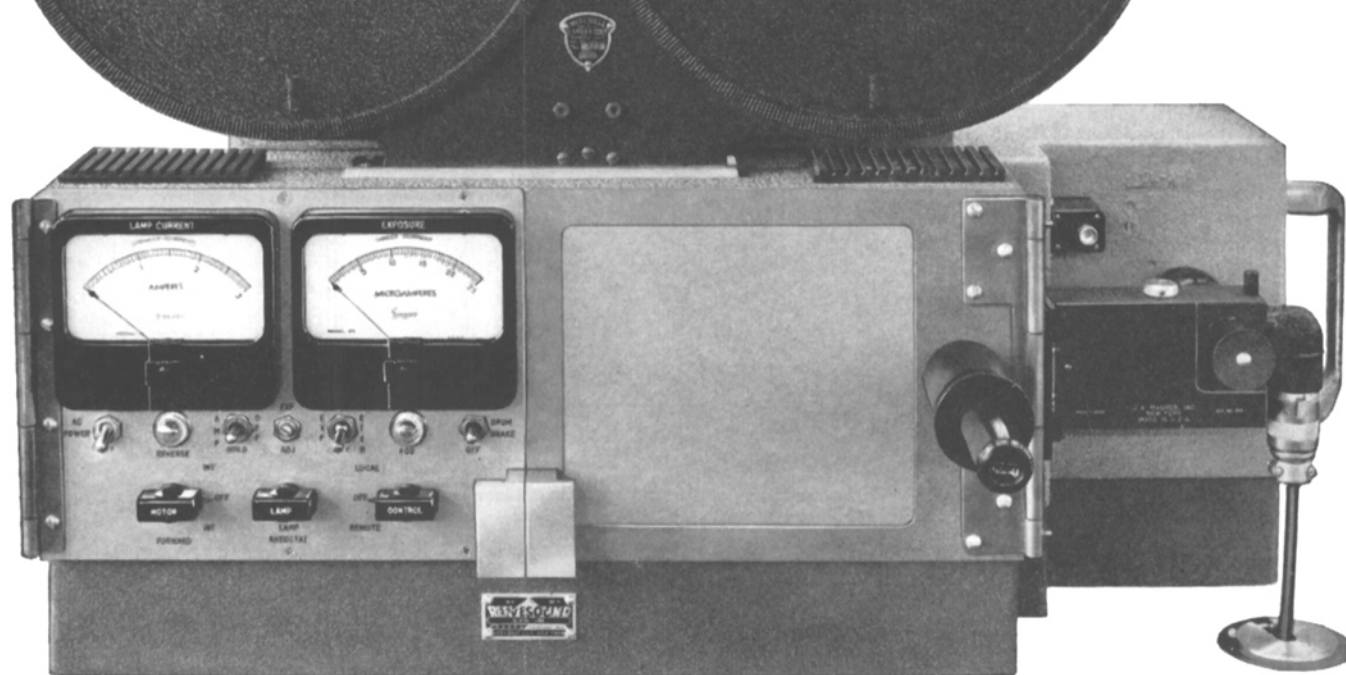
write for brochure

Visit S.O.S. Booth #1 at **SMPTE EXHIBIT**
April 22-26; Traymore Hotel, Atlantic City, N. J.

S.O.S. PHOTO-CINE-OPTICS, Inc. 602 West 52nd Street, New York 19, N. Y.—PLaza 7-0440
Western Branch: 6331 Hollywood Blvd., Hollywood, Calif.

WORKHORSE...

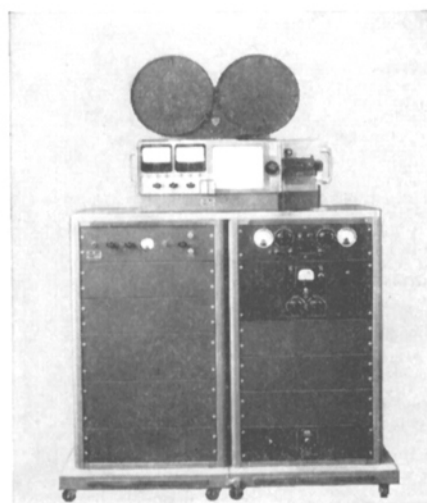
wherever motion pictures are made efficiently!



REEVESOUND DL RECORDER

for outstanding optical and magnetic motion picture sound tracks

Throughout the world, wherever motion pictures are made *efficiently* you find the Reevesound DL Optical Recorder producing quality sound track negatives and direct positives. This workhorse equipment is the first choice of professionals for 16mm and 35mm optical tracks. Operation is straight forward, maintenance approaches zero and reliability is high. Now available are models for 35mm negative and direct positive, 16mm negative and direct positive and 16mm mag/optical. If motion pictures are your business, it's good business to look into the famous Reevesound DL Recorders.



REEVESOUND Company, Inc. • 35-54 36th St., Long Island City 6, N.Y. / A subsidiary of Reeves Soundcraft Corp.

R-158

Specialized LIGHTING EQUIPMENT

for MOTION PICTURE, STILL
and TELEVISION STUDIOS

Write for a copy of
Catalog J on Your Letterhead



Mole-Richardson Co.

937 NORTH SYCAMORE AVENUE, HOLLYWOOD 38, CALIF.

MAJOR BREAKTHROUGH! IN SPRAY DEVELOPING

NEW FILMLINE S-60

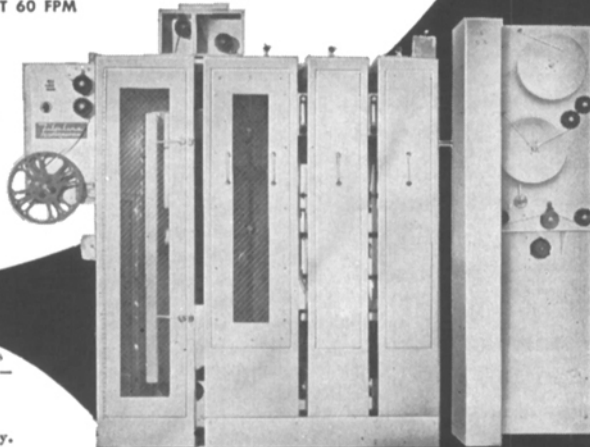
16/35MM NEG/POS SPRAY PROCESSOR

- DEVELOPS NEGATIVE FILM AT 35 FPM
- DEVELOPS POSITIVE FILM AT 60 FPM

The S-60 is Filmline's newest Spray Processor. It is a friction drive processor, guaranteed not to break or scratch film. Absolute control of footage in each chamber insures sensitometric quality control and consistent development. And Filmline processors (unlike competitive makes) have lower film assemblies that are adjustable and remain captive in the position placed.

The S-60 is the specific answer to every laboratory's need for a Spray Processor—because it outperforms machines costing twice as much. Also available for 16mm only. For the full story on the S-60 write today to:

Filmline
CORPORATION
MILFORD, CONNECTICUT
World's Largest Manufacturer
of Film Processors



• Film chamber doors are completely removable for easy access to entire chamber (not found in competitive models of similar class)
• Processing section is stainless steel • Impingement dry box • Precision temperature controls with indicating pilot lights for cooling & heating • 316 Stainless steel pumps for developing & hypo solution • Water temperature regulator • Dual air squeegee • Feed in take up elevators for continuous operation • Replenishment flow meters • Manual & automatic brake for film supply • Automatic electrical torque motor take-up • Variable drive with film speed tachometer • Precision Thermometer & footage counter.

Film for Motion Pictures, Iwao Katagiri, Shigeru Watanabe, Kunihisa Fukuda, Hidemitsu Seki, Akira Kodama, Yoshio Ooi and Aki Ishii, *Studies of Color, Japan Color Research Inst.*, 8: No. 4, 80-102, 1961.

Gradation Characteristics of Color Positive Motion Pictures (in Russian), L. F. Artyushin, *Tekh. Kino i Televideniya*, 6: 23-30, July 1962.

A set of color negatives, differing in exposure and contrast of the three color layers, were made of a colored subject together with a neutral density scale. Prints made from these and characteristics curves were constructed from the image of the gray scale. The sensitometric data were then compared with the visual appearance of the color prints, and the acceptability of prints from the different negatives is discussed.—S.C.G.

A Study of the Quality of a Color Positive Obtained by Printing Through Narrow-Band Filters (in Russian), A. Ya. Smirnov, *Tekh. Kino i Televideniya*, 6: 30-33, May 1962.

It is shown mathematically how the use of suitably chosen narrow-band filters in the printing of color negatives reduces parasitic color densities in the positive, and the effect is shown graphically for a typical set of values of the dye transmissions, emulsion sensitivities and filter transmissions. The ranges of color density over which the parasitic densities can be suppressed are tabulated. Other tables give the relative photoactinic fluxes in the emulsion layers of the positive. Results of a sensitometric test are given in support of the conclusions. The author suggests that a raster-type screen be used with the light source for color printing. The elements of the screen, either narrow strips or small squares, would consist of the three appropriate narrow-band separation filters.—S.C.G.

Standardization of Color Film Processing, *Brit. Kinematog.*, 40: 18-19, Jan. 1962.

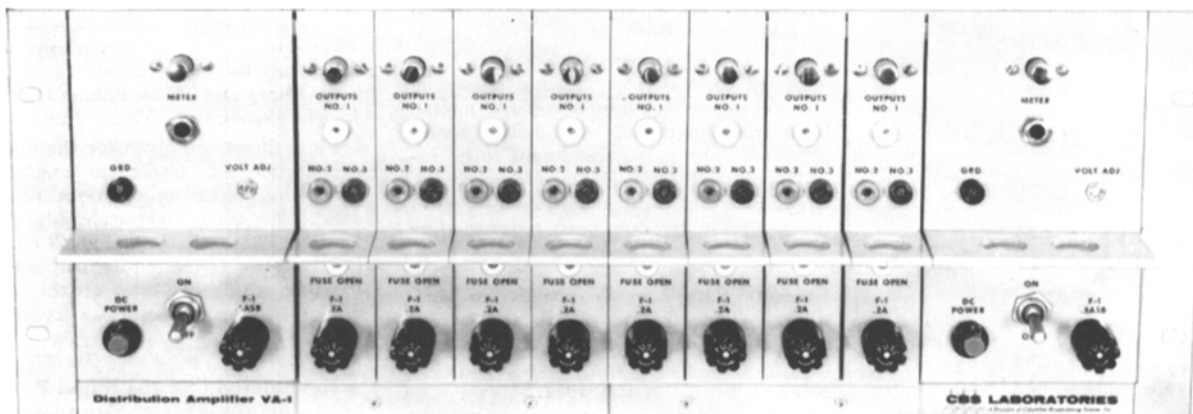
A meeting in Paris of representatives of Agfa, Ferrania, Gevaert and Kodak has led to an agreement between the first three manufacturers to standardize the processing formulas for their color motion-picture films. These include a color developer based on diethyl-paraphenyldiamine, an acid first fixer [the same as Kodak F-5] and a dichromate bleach.—F.G.R.H.

DATA PROCESSING

Speech Analysis by Computer, Kazuo Nakati, Jouji Suzuki and Kenichi Maezoni, *Jour. Radio Research Laboratories*.

This paper describes in outline the data translator to the digital computer NEAC-1103 and some results of speech analysis by computer program such as formant frequency extraction and segmentation of Japanese monosyllables. The data translator can translate the speech data in 24,000 bits/sec and operates in two modes. In mode 1, the speech signal is frequency-analyzed by 26 channel frequency analyzer at first and the output of each channel is converted into an eight

**Specs not spoken here
(you wouldn't believe them anyway!)**



Meet VA-1

CBS Laboratories' new Video Distribution Amplifier

It's all solid state, and maintenance free. Smaller than electron tube DA's, and much cooler running, of course. But—no specs! Not here, anyway, because this is something you must see to believe. We've put together truly elegant instrumentation—which will convert all but the most obdurate skeptics. We'll content ourselves with simply stating that VA-1 is built with

supreme reliability by people who know! It's thoroughly compatible with tube-type equipment, and gives superior color quality.

For a demonstration that will disillusion you with all other DA's—tube or transistorized—see us at the NAB Convention, Chicago, March 31-April 3, Booth 72W, and the SMPTE Convention, Atlantic City, April 22-25, Booth

12, where you may also purchase—at half price—CBS Laboratories BTR 150 (value \$10.00), a highly sophisticated test record for audio equipment adjustment and calibration. If you can't come and see VA-1, we'll send you information on request. We'll do our best to arrange a private demonstration.

CBS LABORATORIES
High Ridge Road, Stamford, Connecticut
A Division of Columbia Broadcasting System, Inc.

THE LAB FOR REVERSAL FILM

16MM

BLACK & WHITE

REVERSAL
PRINTING

&

PROCESSING

&

COLOR PRINTING

OTHER SERVICES

- Work Prints
- Color-to-Color Prints
- Color-to B & W Prints
- Raw Stock
- Fastax Service
- A & B Roll Prints
- Fades-Dissolves
- Timed Prints
- Edge Numbering

FOR COMPLETE INFORMATION WRITE

LAB-TV

723 Seventh Ave., New York 19, N.Y. • JU 6-2293

bits signal (including a sign bit) nearly 100 times per sec. In mode 2, the speech signal is directly sampled 3000 times per second, by reducing the reproducing speed to half of the recording speed. This means 6000 times per second effectively, and each sample is represented as eight bits (including a sign bit) and recorded on tape in two characters.

The method of moment calculation was used in the formant frequency extraction, and special attention was paid to the separation of the first and second and of the second and higher formant frequency ranges. The parameters of \bar{F} and F_2 were used in this separation where \bar{F} is the first order moment of speech spectrum and F_2 is the ratio of the second order moment to the first order moment of the spectrum. Segmentation process was taken by the aid of parameters such as the formant frequencies, the second order moment of spectrum around \bar{F} , the correlation coefficient between successive spectrum segments, the weighted average of variation in formant frequencies, and some others. The subject of the analysis is only one male speaker up to now, and further study is going on to judge the capability of the programs of the analysis for different speakers and not only monosyllables but the conversational speech data.

FILM AND ITS PROPERTIES

Melting of the Emulsion—A New Form of Film Print Damage (in Russian), A. Kamelev, *Kinomekhanik*, 29-31, Apr. 1962.

Many cases of film damage consisting of patches where the emulsion has melted have arisen in the use of a Soviet 16mm projector. The cause was found to be insufficient ventilation in the film channel, where moisture can condense. This part of the projector has now been redesigned.—S.C.G.

Notes on Duplicate Negatives (in Russian), N. T. Trofimenko and B. A. Zaborovskii, *Tekh. Kino i Televideniya*, 6: 56-60, Mar. 1962; *Pulp Paper Mag. Can.*, 63: No. 7, T387-T392, July 1962.

A number of points in the making of duplicate negatives under the conditions of the Soviet film industry are discussed, including the constancy of processing conditions, the sensitometric requirements of negatives made to give the best prints on the given print stock, and the exposing conditions for the duplicate negatives.—S.C.G.

The Application of 8mm Film for Commercial Use, G. W. Stanwix, *Brit. Kinematog.*, 40: 15-16, Jan. 1962.

It is suggested that there are advantages in retaining 8mm film in its original 16mm form. For television application a single 8mm picture could be used, the blank strip being used for magnetic stripe or identification. The film could be used on equipment also designed for 16mm with improved steadiness due to the wider film and double perforations. Film libraries could use sealed magazines, the double 8mm film providing two reels without rewinding and reducing user handling.—R.G.R.H.

FILM PROCESSING (Apparatus and Chemicals)

The Regeneration of Silver from Wash Water by Means of Ion Exchange Resins (in Russian), L. S. Sevast'yanova, *Tekh. Kino i Televideniya*, 6: 59-62, 1962.

The performance of a number of Soviet-made ion-exchange resins in the extraction of silver from wash water in film processing laboratories has been studied, and the best of them are indicated. However, in view of the cost of the resin and the small amount of silver in the water, the process is not economical at present.—S.C.G.

The Use of Surface Materials in the Washing of Motion-Picture Film (in Russian), N. T. Trofimenko, *Tekh. Kino i Televideniya*, 6: 73, July 1962.

Tests have been made on a number of Soviet-produced surface-active materials as additions to wash water in the processing of motion-picture films to prevent the deposition of calcium scum. One of them is recommended as most suitable.—S.C.G.

Toward "Small" Cinematography—A Fundamental Technical Basis (in Russian), A. A. Chernyi, *Tekh. Kino i Televideniya*, 6: 78-79, July 1962.

In order to encourage amateur cinematography, plans are put forward in the USSR for the provision of demonstration studio-laboratories, where facilities for processing, editing and printing of films will be available.—S.C.G.

The Automation of Workshops for the Preparation of Solutions (in Russian), S. P. Burda and E. M. Khaimovich, *Tekh. Kino i Televideniya*, 6: 17-22, July 1962.

Flow sheets are given for the automatic preparation of developers and the regeneration of fixing solutions under the conditions of a large-scale film-printing factory. The basic technological characteristics of the tested equipment are given together with some ideas on the planning of a workshop for solutions for such factories.—S.C.G.

A New Method for the Rapid Processing of Photographic Materials and Apparatus for Carrying It Out (in Russian), B. I. Petrov, *Optiko-Mekh. Prom.*, No. 1, 4-5, 1962; *Tekh. Kino i Televideniya*, 6: 90, July 1962.

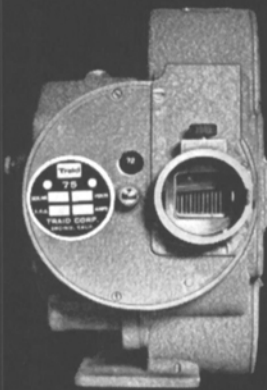
A short description is given of a new method of rapidly obtaining a photographic image, the essence of which lies in bringing a specially chosen band of material with fine fibers and pores, saturated with the processing solution, into contact under some pressure with the exposed silver-halide layer of the photographic material. During the contact, which takes place without any relative displacement of the contacting band, the processing solution penetrates the emulsion layer of the photographic material and brings about its processing.—S.C.G.

The DEFA Small-Scale Developing Machine (in Russian), E. M. Kaimovich, *Tekh. Kino i Televideniya*, 6: 82-84, July 1962.

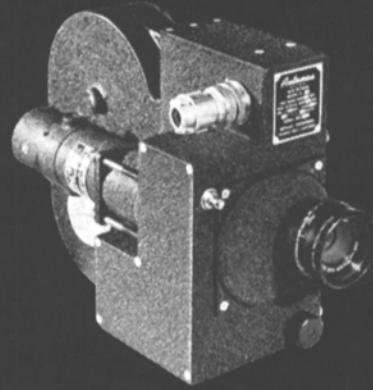
A short description is given of the type 3012 small-scale developing machine made



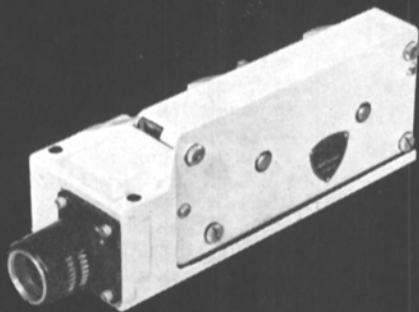
KB-3A FOTODATA, 16MM, FOR GUNNERY AND FIRE-CONTROL—Precision-engineered 16mm camera built to USAF requirements. Speeds of 16, 32, and 64 fps. Other speeds on special order. Rotary-disc variable shutter. Uses 50- or 100-foot magazines. Primarily used to record accuracy of aerial gunnery and fire-control systems and methods but readily adaptable to many other applications.



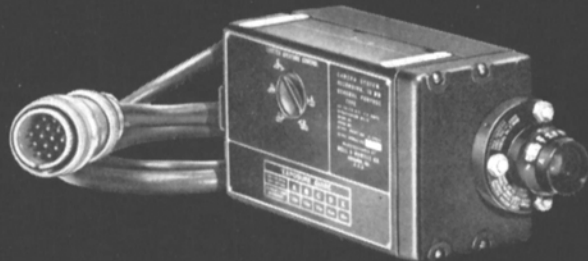
TRAIID 75A FOTOTRACKER, 35MM INTERMEDIATE-SPEED — Versatile, small, compact 35mm camera operating at 20, 40, 60, 80 fps. Two built-in 28-VDC motors. Variable shutter, adaptation for 200- or 400-foot magazines. Many optional features, including interference filter, heaters and timing systems. Single-lens Eyemo mount.



AUTOMAX G-1 CINE-PULSE, 35MM, FOR FLIGHT TESTING—Environment-tested to rigid USAF standards, the 35mm Automax has a cine rate of 16 and a pulse rate up to 10 fps, using a 28-VDC motor. Built-in boresight, standard Eyemo lens mount, output pulses for frame and footage counts. Designed to withstand environmental extremes of flight testing. Easy to maintain.



PHOTOSONICS 16MM-1B, FOR MISSILES AND ROCKETS— This high-speed camera gives you the sharpness and image-stopping capability of an intermittent camera plus the dependability and simplicity of a continuous-motion prism and rotating disc shutter. Frame rate, 12 to 1000 fps. Shutter openings, 72°, 36°, 18°, or 9°. Magazine capacities, 100, 200, 400, or 1200 feet. Extremely rugged for use with missiles and rockets. DC or 115-VAC motors.



KD-7 FOTOPULSE, 16MM PULSE and CINE—Operates up to 10 fps pulse or a constant 12 fps in cine mode. Readily switches from pulse to cine. Operating modes include shutter open, shutter closed, or alternately open and closed. Includes heaters, radio-interference filter, GSAP and "C" lens mount. Many accessories and optional features, including 50- or 100-foot magazines.

STORYTELLERS

These Traid photo-instrumentation cameras tell the whole story, in sharp, accurate detail. That's why they're in use in major space age activities from underseas to outer space.

Whether your analysis needs call for 16mm or 35mm, pulse or high-speed, hand-held or mounted operation, a Traid camera is the perfect selection. Its designed-in ruggedness, reliability, and versatility make it a storyteller par excellence.

Send for your illustrated copy of "Traid Line," catalog of Traid products.



TRAIID CORPORATION

17136 Ventura Boulevard, Encino, California
Telephone TR 3-3373 or ST 8-2210



NEW!

FILM PROCESSING AIR SQUEEGEE MODEL HB-2 FOR CONTINUOUS FILM PROCESSING MACHINES (16MM or 16/35MM)

A highly efficient device for removing surface liquids from films during processing.

It uses high pressure compressed air (10-20 psi) to form a high velocity air cushion that prevents film contact and completely eliminates water spots.

It minimizes solution carry-over, contamination and wasted chemicals.

Custom fabricated of photographic grade stainless steel — no gaskets, cements or other materials — completely safe with chemicals.

Easy to adjust — easy to maintain — nothing to wear out.



Now available from stock!

\$100.00 F.O.B. BURBANK, CALIF.

GRYPHON CORPORATION
POST OFFICE BOX 854 • BURBANK • CALIFORNIA

**PERFORATED TAPES OR FILMS
ARE DRIVEN BEST BY
SPROCKETS**

by *LaVerzi*

SPECIALISTS IN SPROCKETS SINCE 1908

BROCHURE
UPON REQUEST
YOUR QUOTE
REQUESTS INVITED

LaVerzi MACHINE WORKS

4635 W. LAKE ST., CHICAGO 44, ILLINOIS
TELEPHONE — AREA CODE 312 — ES 8-1636

by the firm of DEFA (German Democratic Republic). It is for the processing of 35- and 16mm film.—S.C.G.

Determination of Speed of Black-and-White Films with Reversal Processing (in Russian), B. N. Modestov, *Tekh. Kino i Televideniya*, 6: 49-55, Mar. 1962.

Criteria for the speeds of reversal films are reviewed. Experimental studies on speed criteria are described and results are given for different black-and-white films (reversal, and negative and positive processed by reversal) based on exposure for the highlights, for shadows and for the mean brightness of the subject. The values obtained by these criteria are compared with practical speeds. It was found that the best agreement with practical speed was shown by exposure for the average subject brightness.—S.C.G.

Photographic Processes Used in the First Photography of the Reverse Side of the Moon (in Russian), S. M. Antonov, K. S. Bogomolov, N. I. Kirillov, N. S. Ovechkin and V. I. Uspenskii, In coll. *Iskusstv. sputniki Zemlya*, vyp. 9, M., AN SSSR, 20-29, 1961; *Referat. Zhur., Fiz. G. Optika*, Abstract No. 5G334.

Describes the principles and some data underlying the choice of the optimal processes in the photographic treatment of the film for the photography of the far side of the moon on board the space ship, and of the film for earthside development of the image transmitted by radio. A method was developed for calculating the fogging action of cosmic rays on the film during the flight time from the earth to the point where the photograph was made; adequate agreement of the calculation with experiment (for exposure on the earth) was shown, and the expected fog for the choice of film was insignificant (~ 0.05). A fine-grained, temperature-resistant film (35mm format), of intermediate sensitivity with high-resolution permitting processing at high temperatures, was used on board the ship. A monobath process in a high viscosity solution with enhanced fixer was used. The sensitometric characteristics of all processes were practically independent of temperature in a sufficiently broad range. At the correct time the processing solution was supplied to the film and stripped from it by an elastic sponge; drying was done on a heated drum. The film with the negative image received on earth was processed in a slow equalizing (low-contrast? Tr.) developer. The evolved process included also the obtaining of double negatives, and combined with this a special procedure of counter-printing which assures observing the Goldberg principle in the final image.—A.E.M.

HIGH-SPEED PHOTOGRAPHY AND INSTRUMENTATION

Experience in the Development of Photographic Emulsions on Board the Second Space Satellite (in Russian), Ya. Veprik, L. V. Kurnosova, L. A. Razorenov, K. D. Tolstov, M. I. Frankin and V. S. Chukin, In coll. *Iskusstv. sputniki Zemli*, Vyp. 11, M., AN SSSR, 35-41, 1961; *Referat. Zhur. Fiz. G. Optika*, Abstract No. 7229.

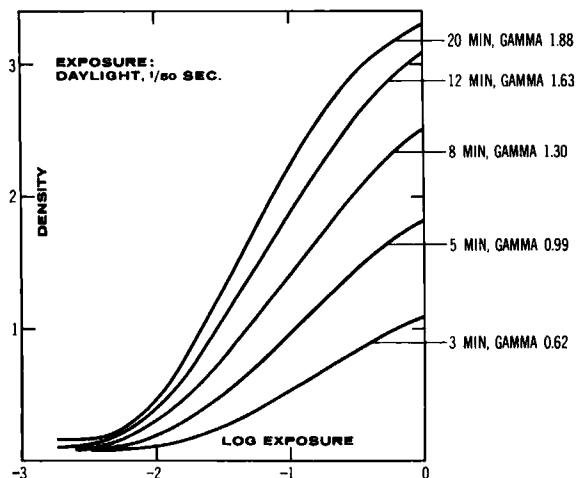
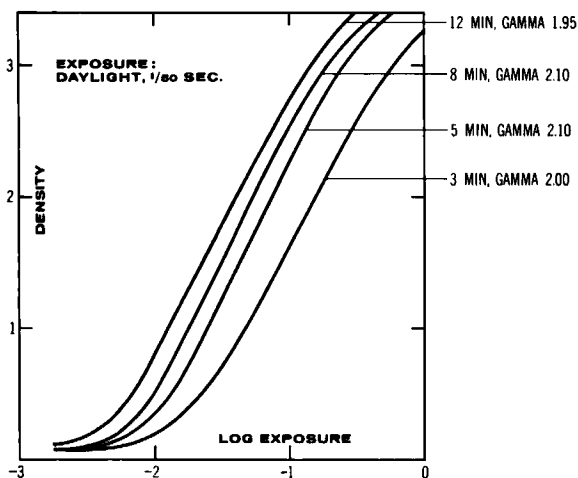


150 feet of KODAK LINAGRAPH SHELLBURST Film (ESTAR Base)
(actual size)

This one is best known for high acutance in photographing a tiny target in a great big bright sky. Through haze. It is also the one for extreme dimensional stability and top strength despite cold and dryness.

Don't get the idea that contrast in this film cannot be anything but high. That idea stems from the following behavior in KODAK Developer D-19 at 68°F:

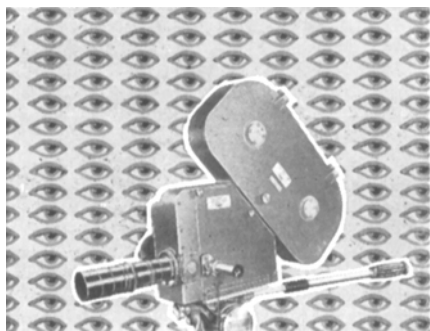
Observe, however, the contrast control that KODAK Developer D-76 at 68°F affords:



Fuller details from . . .

EASTMAN KODAK COMPANY, Photorecording Methods Division, Rochester 4, N. Y.

Engineer with 10,000 Eyes



WADDELL NOVA III 16mm HIGH-SPEED CAMERA

New features include simplified Timing Block and Film Chip Reducer.

It would take an engineer with 10,000 eyes to solve these problems:

- 1 A heavy paper machine malfunctions. In a trice it fills the room with an ocean of paper. Problem: Detect the fatigue and fracture within the structure of the machine.
- 2 An automatic printing and die-cutting machine picks up bad registrations, with resultant loss in material and man hours. Problem: Find the cause.
- 3 Chemical fluids forced under high pressure into nozzles suddenly take off in erratic directions. Problem: Check the pattern and correct direction.
- 4 A manufacturer wants visual proof of the loft and direction of his golf ball. How can he get it?
- 5 A missile manufacturer is faced with malfunction in the operation of a transonic sled driven by rockets. Another needs to check on the static firing of missiles. An aircraft manufacturer has problems incident to the take-off and landing of his planes.

If you are an engineer with a normal complement of just two eyes, you can solve these problems by the process of elimination, which often takes weeks and months, at a staggering cost in man hours.

Or . . . you can buy a new WADDELL 16mm High Speed Photo-Instrumentation Camera. Operating on a rotating prism as the means of optical compensation, the WADDELL travels at a far greater velocity than normal intermittent cameras—at 10,000 frames per second. The attachment of an 8mm prism gives you 20,000 frames per second.

Baffling engineering problems that take weeks or months to unravel, are solved in minutes by the WADDELL camera. The developed film gives you the evidence you're looking for.

The WADDELL has these unique features: Twin timing lights readily accessible for replacement without dismantling the camera. Film chip reducer. Timing lights can be used individually or collectively with no internal wiring changes. Provides three fixed apertures—Full, Half and Slit. Both $\frac{1}{4}$ x 20 and $\frac{3}{8}$ x 16 mounting threads on bottom of camera. Bore sight furnished. Improved positive locking lens mount. Six months unconditional guarantee on parts, labor and service.

Would you like to see the WADDELL demonstrated right in your plant? Write or telephone our Lou Girola. There's no obligation.

CAMERA EQUIPMENT CO., INC.

Subsidiary of CECO Industries

NEW YORK, N. Y.
315 West 43rd St. • JU 6-1420

MIAMI, FLORIDA
51 East 10th Ave. • TU 8-4604

HOLLYWOOD, CALIFORNIA
6510 Santa Monica Blvd. • HO 9-8321



This paper describes the process of development of a nuclear emulsion stack and the apparatus for its processing aboard the second Soviet space satellite. The developer had the job of stopping the recording of particle tracks after a specified flight time of the ship; consequently development of the emulsion for the complete processing cycle was not necessary, and after development (without fixing) the emulsion required only to be preserved for subsequent completion of the processing on the ground. The emulsion stack was placed in a frame which served later as the processing frame and was exposed from instant of takeoff of the vehicle for a period of 10 hr. Subsequently on a programmed command, the individual emulsion layers in the pile separated and the space between them was filled with a developer solution. After 90-min development the layers were brought together, forcing out the developer, and then separated again and submerged in a concentrated solution in which they were kept until reactivation on earth. Pictures of particle tracks recorded and developed in flight are shown.—A.E.M.

A Device for High-Speed Photography (in Russian), V. I. Fomin and B. I. Zhuravlev, *Zhur. Nauch. i Priklad. Fot. i Kinemat.*, 7: No. 3, 219-221, May-June 1962.

The apparatus described takes a number of images on a single frame of film in rapid succession without the use of stroboscopic lighting. A rotating disk with apertures round the rim is rotated in front of the camera by means of an electric motor. The use of the apparatus in photographing the cutting of unsupported wheat stems is described.—S.C.G.

Film Techniques in the Photography of Artificial Earth Satellites (in German), *Wiss. Z. Hochsch. Elektrotech. Ilmenau*, 7: No. 7, 61-63, 1961; *Referat. Zhur., Fiz.*, Abstract No. 5G333.

In connection with the task of photographing weakly lit artificial earth satellites with short exposure times (necessary because of the rapid motion of the subject), sensitometric and information characteristics have been determined for three high-speed (25-29° DIN) films, and the best conditions for their development and other forms of processing have been investigated. Isopan-Rapid Film (Agfa-Wolven), in spite of having the lowest speed, gave the best results; unlike the other two it was readily hypersensitized with ammonia, when its speed was increased three times and exceeded that of the 29° DIN film by 15%. DK-50 developer is recommended for the development of this film. When the speeds of the films are evaluated under their practical working conditions it must be remembered that account must be taken of the action of the additional exposure due to the luminance of the night sky, and in particular, to moonlight, both before and after exposure of the subject. For this purpose the authors have constructed, by calculation, curves from which conditions (in particular the duration) of additional exposure can be chosen so as to be optimal from the point of view of the sensitometric characteristics of the film.—S.C.G.

High-Speed Photography Using a Ruby Optical Maser, Tatsuo Yajima and Fujio Shimizu, *Sci. Papers Inst. Phys. Chem. Research (Tokyo)*, 56: No. 3, Sept. 1962.

A quasiperiodic pulsation of light in a ruby optical maser is obtained under certain conditions. The width of a single spike is found to be less than 0.2 μ sec, and the separation between successive spikes is some 10 μ sec. These successive spikes of light generated from the ruby optical maser were applied to take a high-speed photograph of a flying bullet. A small bullet shot by a pneumatic gun was illuminated by the output beam of the ruby optical maser and the resulting image was photographed by an ordinary camera. Several pictures taken under direct illumination against the direction of the bullet and those under sideways illumination by the scattered light are shown. No blur is seen within the experimental resolution.

HISTORY

The Prague Photographic and Cinematographic Museum, Interkamera, O. Kh., *Tekh. Kino i Televideniya*, 6: 77-78, May 1962.

The permanent exhibition of the history of photography and cinematography, housed in the National Technical Museum in Prague and known as Interkamera, is briefly described.—S.C.G.

Chinese Motion-Picture Industry (in Russian), Regis Bergeron, *V. zashchita mira*, No. 4, 1961; pages 63-71 (Mfg. 1470); (No. 128).

The first full-length sound film was exposed in China in 1932, the first color film was prepared in 1953 and the first wide-screen picture was made in 1959. The present trend in developments is influenced by the Soviet motion-picture industry. At present there are five motion-picture studios in Shanghai and three in Peking. The wide-screen picture shot in a Peking studio is not entirely completed. Approximately twenty motion-picture magazines are published in the country. On February 1, 1960, the Motion Picture Institute was inaugurated in Peking.—C.A.B.

PRINTING AND OPTICS

The Accuracy Required in Determining the Basic Parameters of Stereo-Cinematography (in Russian), A. N. Shat-skaya, *Tekh. Kino i Televideniya*, 6: 55-58, June 1962.

Expressions are derived for the permissible error in a number of variables which determine the correctness of stereoscopic reproduction of a scene. These are the optic base of the system; the conjugate focal length; difference between the focal lengths of the two taking objectives; the difference between the focal lengths of the two projecting lenses; and the distance to the nearest plane of the scene. The accuracy found in practice is compared with the theoretical.—S.C.G.

Printing Machines for Television (in Russian), I. S. Golod and N. D. Bern-

shtein, *Tekh. Kino i Televideniya*, 6: 69-72, June 1962.

Two Soviet-designed printing machines are described for the preparation of 16mm prints for television use. The 23 AMK-1 is for contact printing from 16mm originals and the 23 ATO-1 for the optical printing of 16mm prints from 35mm negatives. Both printers have been designed by the Central Constructional Bureau of the Ministry of Culture in collaboration with NIKFI.—S.C.G.

Gradation Distortions of the Image in Dupe Printing of Black-and-White Films (in Russian), L. P. Krylov and L. M. Greidinger, *Tekh. Kino i Televideniya*, 6: 1-9, June 1962.

Measurements of density (minimum, maximum and density range) have been carried out on a number of shots from recent Soviet art films made on the Soviet AM-1 and A-2 negative stocks. From the results, which are fully tabulated, it is concluded that the majority of the negatives have a density range of 0.8 to 1.2, but with the dupe-negative and dupe-positive film stock at present used in the Soviet Union it is not possible to reproduce gradation correctly with density ranges greater than 0.8 to 0.9. Some improvement could be obtained, however, by improving the developer used for the dupe films. The following recommendations are made. Working positives, prints and control copies direct from the negative should all be developed to a gamma of 2.5. Dupe-positive film stock should be used, with development to a gamma not greater than 1.5.—S.C.G.

PROJECTION

The Electrical Power Supply and Drive of the SKU-1 Universal Motion-Picture Projector (in Russian), V. Il'in, *Kinomekhanik*, 33-35, Jan. 1962.

Stabilizers for Motion-Picture Projector Speed (in Russian). A. Idarov and M. Lisogor, *Kinomekhanik*, 25-27, Jan. 1962.

The need for constancy of film-travel speed in sound-film reproduction is explained and some typical devices for stabilizing the speed of motion-picture projectors are described.—S.C.G.

The SKU-1 Stationary Universal Motion-Picture Projector (in Russian), A. Karal'nik, *Kinomekhanik*, 37-43, Jan. 1962.

The SKU-1 motion-picture projector has been designed in the Soviet Union for use in the largest cinemas for: normal 35mm films with photographic soundtrack; wide-screen 35mm films with stereophonic sound from four magnetic soundtracks; wide-screen 35mm films with photographic soundtrack; wide-gage 70mm films with stereophonic sound from six magnetic soundtracks, combined on one film; and wide-gage 70mm films with soundtracks on a separate 35mm magnetic film. The mechanism of the camera is described in some detail, and attention is given to the high-intensity carbon-arc light source.—S.C.G.

The Problem of the Automation of the Exhibition of Motion-Picture Films (in

NEW ANGENIEUX IOX ZOOM LENSES

12mm-120mm f2.2 available
for all 16mm cameras.

25mm-250mm f3.2 available
for all 35mm cameras.

**IN
STOCK!**

Available
Immediately

Serving the
World's
Finest
Film Makers

• Lowest Prices!
• Trades Accepted!
WRITE • WIRE • PHONE

FLORMAN & BABB, INC.

68 West 45th St., New York 36, N. Y. MU 2-2928



CHRISTIE
SINCE 1929

XENON

& XENON MERCURY ARC LAMP D-C POWER SUPPLIES

4.5 - 180 amp
11.5 - 65 vdc
1% Reg & Ripple

From Stock:
Various Ratings
and Styles



150 - 5000 watt
MIL & RFI Specs
Silicon

Igniters
Also
Available

Also 200 other Models of Power Supplies & Battery Chargers • Write for Catalog
CHRISTIE ELECTRIC CORP. 3412H West 67th Street, Los Angeles 43, Calif.



Advanced thinking... produces timeless designs. This proven Mitchell philosophy now expresses itself in the Reflex. The Mark II is only the first of a series of Reflex cameras for both the 35 and 16mm fields. "Reflex" or "Rack-Over" ... there is a Mitchell camera for your application.

For superior camera maintenance, reconditioned camera equipment, new project developments or new Mitchell camera information, write on your letterhead to Sales Department.



MITCHELL
CAMERA CORPORATION
666 W. HARVARD STREET • GLENDALE, CALIF.

NOW REPRESENTED IN OVER
45 COUNTRIES THROUGHOUT
THE WORLD. AGENTS IN
YOUR COUNTRY ON REQUEST.

Russian), L. Ts. Shkap, *Tekh. Kino i Televideniya*, 6: 76-77, July 1962.

Points requiring individual consideration in the discussion of the automation of motion-picture exhibition are briefly dealt with. They are the capacity and type of film cassette, the light source for the projector, the automatic changeover from projector to projector, and the automation of focusing and framing adjustments.—S.C.G.

Automatic Motion-Picture Projection Equipment (in Russian), G. M. Ivanov, *Tekh. Kino i Televideniya*, 6: 80-82, July 1962.

A general account is given of automatic apparatus for motion-picture projection marketed by the firms Zeiss-Ikon, Siemens and Halske, and Philips.—S.C.G.

Motion-Picture Projection Apparatus (in Russian), V. B. Mun'kin, *Tekh. Kino i Televideniya*, 6: 16, July 1962.

Circuits and apparatus for the automatic control of cinema performances are described.—S.C.G.

Representational Techniques in Modern Cinematography (in Russian), R. N. Il'in, *Tekh. Kino i Televideniya*, 6: 66-72, July 1962.

The modern technology of cinematographic representation is discussed together with its possibilities as a means of expression. The new forms of cinematography which have arisen during the last few decades—wide-screen and wide-gage cinematography—are also considered. A number of suggestions in the article are put forward for discussion and require elaboration in practice.—S.C.G.

New Developments in Automation [of Cinema Performances] (in Russian), V. Emel'yanov and V. Mun'kin, *Kinomekhanik*, 28-33, Jan. 1962.

Circuits and devices used in the automation of cinema performances in Soviet cinemas are briefly described.—S.C.G.

An Automatic Stop Device for a Narrow-Gage Motion-Picture Projector (in Russian), V. Koval', *Kinomekhanik*, 38-40, Feb. 1962.

The device described prevents damage to film by automatically shutting off the power supply if anything should happen to disturb the normal tension in the loops of film in the film-transport mechanism of the projector. This allows, for example, the teacher to conduct a class without having to attend to the projector.—S.C.G.

The "Pirkon UP-700," I. Fonar', *Kinomekhanik*, 42-44, July 1962.

The East German concern VB Kamera and Kinowerke has designed the new Pirkon UP-700 motion-picture projector for the exhibition of 35mm and 70mm films. A brief description of the projector is given.—S.C.G.

The KPS-16-2A Motion-Picture Projector for Narrow-Gage Film, S. Verlinskiĭ and L. Kirnos, *Kinomekhanik*, 36-40, July 1962.

The KPS-16-2A is a Soviet-made projector for showing color and black-and-white 16mm films, with a photographic or

magnetic soundtrack, in full-size cinemas. Its working specifications, mechanical system and optics are described.—S.C.G.

The Installation of a Magnetic Attachment to the PP-16-1 and PP-16-3 Motion-Picture Projectors (in Russian), A. Karamelev, *Kinomekhanik*, 38-41, May 1962.

The PP-16-1 and PP-16-3 are 16mm projectors used in cinema networks in the USSR. In order to modernize them, a unit has been devised to convert them for the reproduction of sound from a magnetic soundtrack striped on the film. The construction of the unit is briefly described.—S.C.G.

Cine Screens (in Russian), S. Drukker, *Kinomekhanik*, 22-27, May 1962.

An introduction to the scientific aspects of cine screens is given. The optical properties of diffuse and reflecting screens are outlined. The types of screen in current use are described, and the factors which are taken into account in determining their dimensions and shape are outlined. A brief note is given on the construction, setting up and use of motion-picture screens.—S.C.G.

New Developments in Motion-Picture Technique (in Russian), M. Z. Vysotskiĭ and V. G. Komar, *Tekh. Kino i Televideniya*, 6: 84-88, June 1962.

A number of recent developments in wide-screen, panoramic and similar systems of cinematography outside the Soviet Union are surveyed.—S.C.G.

Reflecting Incandescent Lamps for Motion-Picture Projection (in Russian), G. A. Golostenov and Yu. V. Livin, *Tekh. Kino i Televideniya*, 6: 60-62, Apr. 1962.

The optimum dimensions for reflecting incandescent lamps for 16mm motion-picture projectors are calculated. The results of tests carried out on existing Hungarian-made lamps, with either reflecting walls or internal reflectors, are tabulated. The advantages of this type of light source over ordinary incandescent lamps used with external reflectors is discussed.—S.C.G.

A Rear-Projection Screen for Daylight Cinema Installations (in Russian), S. A. Drukker, G. L. Irskii and S. A. Panina, *Tekh. Kino i Televideniya*, 6: 46-54, June 1962.

A screen for daylight rear projection is made from a translucent plastic, 0.5mm thick, with a grid of fine parallel lines embossed on its front face. The optical characteristics of the film are described in detail.—S.C.G.

Cinema Technique in the Kremlin Palace of Congresses (in Russian), G. L. Irskii, S. A. Drukker, G. D. Muzykanskiĭ and B. R. Bregman, *Tekh. Kino i Televideniya*, 6: 1-16, Apr. 1962.

An account is given of the cine equipment in the Palace of Congresses in the Kremlin. Detailed descriptions are given of the projectors, film rewind mechanisms, film storage and the construction of the screen.—S.C.G.

Scientific-Research Institute of Motion Pictures and Photography (Kino-Foto Institute) in 1961 (in Russian), V. Komar.

Kinomekhanik, No. 3, 27-29, 1962; (No. 236).

Among the projects accomplished by the Institute in 1961 was the design and installation of wide-screen and other motion-picture, acoustics and sound equipment for the Kremlin Palace of Conferences. The performance of nonrewinding cassettes for a roll of 600 meters of film was tested, and cassettes with a capacity of 1500 meters of film were designed. Such cassettes reduce film wear and are useful for automatic projection. Projectors with automatic changeover were designed. The mechanism has metallic foil cemented on the film and noncontact pickups.

Transparent plastic screens were designed for daylight movies. They give uniform luminance of the image and have greater strength and transporting ability than glass screens. Some plastic screens had aluminum coatings. The Institute, in cooperation with the Moskopirfarka and motion-picture studio "Mosfilm," improved the preparation of 35mm wide-screen and ordinary wide-screen film by printing on a 35mm positive film from a 70mm negative. A laboratory sample of an optical printer was built to obtain three-film 35mm cinerama release prints from a 70mm negative.

Television techniques in motion pictures were developed for recording moving images on a magnetic tape and for exposing on motion-picture film from a cathode-ray tube. Color negative film LN-5 in combination with color positive film TsP-7 showed a high speed and quality of image. A new high-speed black-and-white negative motion-picture film (type V4), which is twice as fast (400 to 500 GOST units) as the previous V-type, was put on the market in 1961. The Institute will pay special attention to automation in the motion-picture industry and trade in 1962.—C.A.B.

Cinema Equipment from Czechoslovakia (in Russian), J. Stanek, *Kinomekhanik*, 41-46, Mar. 1962.

A description is given of the Meopton IV-C motion-picture projector for 35mm films, normal and wide-screen, made in Czechoslovakia by Meopta.—S.C.G.

The NA 16/1.5X Anamorphic Attachment for a 16mm Projector (in Polish), Yu. P. Selivanov and N. I. Sinyakov, *Poligraf. Proizvodstvo*, No. 9, 11-13, 1962; (No. 249).

A Study of the Perception of Panoramic Motion-Picture Images (in Russian), N. I. Gol'tsman, M. D. Emelyanov, A. A. Koreshkov, E. N. Semenovskaya and D. R. Khanukaev, *Tekh. Kino i Televideniya*, 6: 21-29, May 1962.

In order to study the effect of panoramic forms of the cinema on the observer, and to gain some idea of the bodily changes accompanying the sense of participation, a number of physiological variables have been measured on 30 adults viewing panoramic films. The measurements included brain-potentials by means of the electroencephalograph, pulse rates, breathing, arterial pressure, muscular tension, eye movements and several others. Changes in position of the subject were obtained by

means of a specially designed chair. It was found that a complex of physiological changes does, in fact, accompany the sense of participation in the action of a film, and that, in particular, bodily movements—small muscular and eye movements—give a reasonably objective estimate of the sense of participation.—S.C.G.

Magiscope—A Recent Method of Front Projection (in Japanese), Iwanishi Hiroshi, *J. Inst. Televis. Engrs. Japan*, 15: No. 11, 647-652, 1961; *Referat. Zhur., Fiz., Abstract No. 7G215*.

It is shown that there are defects in rear projection connected with the considerable unevenness in the brightness of the projected image when screens with a high transparency are used. The Magiscope method is described, in which a projected background is formed on a screen, not by transmitted, but by reflected light. In this method the camera and the projector forming the background image are placed in front of an opaque screen. The objectives of the camera and the projector are optically combined with the aid of a semitransparent mirror so that the shadows of the actors formed on the screen by the rays from the projector are not recorded on the film. Methods are described for raising the brightness of reflecting screens, including scattering within the limits of a given solid angle. Technical data are given for apparatus, working on the Magiscope method, for projecting and taking on 16mm film. The possibility of using the method in stereocinematography is mentioned.—S.C.G.

SENSITOMETRY AND IMAGE STRUCTURE

A Study of the Physical Sharpness of a Photographic Image. I. A Method of Obtaining Boundary Curves and Their Evaluation (in Russian), Yu. K. Vifanskii and Yu. N. Gorokhovskii, *Zhur. Nauch. i Priklad. Fot. i Kinemat.*, 7: No. 4, 290-296, July-Aug. 1962.

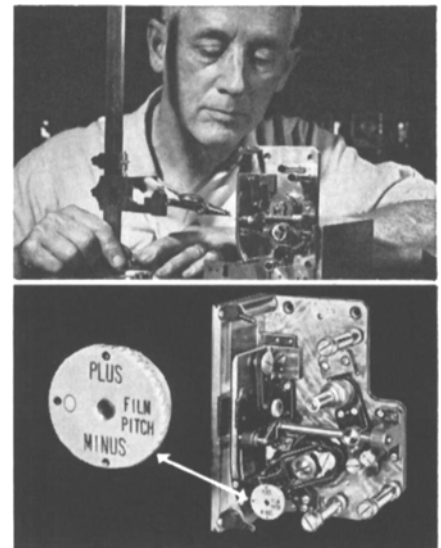
Conditions are considered for obtaining boundary curves, which characterize the spatial distribution of optical density at an edge in a photographic image, with minimum instrumental errors. A method is proposed for obtaining boundary curves for black-and-white photographic materials with the aid of a high-sensitivity photoelectric microphotometer with direct recording of optical density. Methods of numerical evaluation of the physical sharpness of a photographic image according to the boundary curve are discussed.—S.C.G.

A New Method of Determining the Sharpness of a Photographic Image (in Russian), I. B. Blyumberg, T. M. Zyazina and G. I. Teregulov, *Zhur. Nauch. i Priklad. Fot. i Kinemat.*, 7: No. 4, 268-271, July-Aug. 1962.

A method of determining the sharpness of an image of an edge depends on the degree of enlargement at which blurring just becomes noticeable. The values for sharpness so obtained do not depend on the contrast, and only to a small extent on the density difference across the edge, although the density of the dark area has some effect.

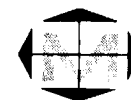
NEWS for MITCHELL CAMERA OWNERS

FACTORY SERVICE DIVISION Mitchell cameras from Malaya... Hollywood... and New York arrive daily, leave promptly in like-new-condition after complete, precision work by Mitchell craftsmen. Special sound test room, critical quality control, original factory parts, and speed of service guarantee your satisfaction.



NEW MITCHELL VARI-STROKE CONTROL All new Mitchell Studio cameras are factory equipped with the new... Vari-Stroke control. Now... it is available as a modification to all Mitchell NC and BNC cameras! Vari-Stroke control provides a convenient means for changing the attitude of the pull-down claw on the perforation, and in this manner reducing "film noise" due to changes in film dimensions, to a minimum!

Inquire about our factory reconditioned, guaranteed as-new cameras. For brochures address the Sales Department.



MITCHELL
CAMERA CORPORATION
666 W. HARVARD STREET • GLENDALE, CALIF.
521 Fifth Avenue • New York, New York

NOW REPRESENTED IN OVER 45 COUNTRIES THROUGHOUT THE WORLD. AGENTS IN YOUR COUNTRY ON REQUEST.

Sharpness falls off with repeated contact printing, and the effect of a small separation between negative and printing surface is greater with diffuse than with direct lighting. The effect of a series of printings, alternately positive and negative, on sharpness, resolving power and granularity has been studied for different conditions of printing. The determinations of sharpness used in this work agreed closely with the results of visual estimation.—S.C.G.

A Rational Method of Using 16mm Film for Shooting Motion-Picture Films (in Russian), I. B. Gordiŭchuk, *Tekh. Kino i Televideniya*, 6: 63-65, June 1962.

For making scientific and documentary films, the author recommends the use of reversal-processed 16mm film for making the original. For this purpose the film should be developed to a gamma of 0.55 to 0.65, but the reversal film which is available in the Soviet Union at present is unsuitable as it is developed to a gamma of 0.9 to 1.2. A working positive is then made from the 16mm original by optical printing onto normal 35mm positive stock with reversal processing to give a gamma of 0.9 to 1.2. Editing is carried out on the 35mm positive, and on the basis of this the 16mm positive is assembled for printing. Dupe negatives are made from this by optical printing onto 35mm dupe negative stock developed to a gamma of 1.0, and the final prints are made from these by contact printing onto normal 35mm print stock developed to a gamma of 1.9 to 2.3.—S.C.G.

SOUND RECORDING AND REPRODUCTION

An Interference Method of Measurement of the Wear Resistance of Magnetic Heads (in Russian), V. F. Shvets, *Tekh. Kino i Televideniya*, 6: 18-22, June 1962.

Adjustment of the Reproduction Channels of Magnetic Soundtracks with Control Films (in Russian), A. S. Zaks, *Tekh. Kino i Televideniya*, 6: 12-15, Mar. 1962.

Pulse Demagnetization of a Magnetic Carrier (in Russian), M. G. Arutyunov and N. Ya. Khvostov, *Tekh. Kino i Televideniya*, 6: 16-21, Mar. 1962.

The KPZ-14 and KPZ-14M Apparatus Assemblies for Multichannel Recording of Magnetic Soundtracks (in Russian), E. G. Brill', *Tekh. Kino i Televideniya*, 6: 55-56, May 1962.

A brief description is given of the Soviet-made KPZ-14 assembly which has several other uses besides the recording of multichannel magnetic soundtracks on film. The KPZ-14M is a modification which has been designed for the needs of the Mosfilm studios.—S.C.G.

The Problem of the Influence of Acoustics on the Quality of Stereophonic Reproduction (in Russian), V. S. Man'kovskii, *Tekh. Kino i Televideniya*, 6: 19-25, Apr. 1962.

Traveling Matte Systems, *Am. Cinematographer*, 43: 538-539, 567, 568, 571, Sept. 1962.

The traveling matte systems used in

process photography are: (1) the *blue screen system* using a backing painted blue or illuminated with blue light, requiring both male and female mattes and standard equipment; (2) the *color difference system*, similar to the blue matte system and differing chiefly in techniques of manipulating separations in the optical printer; (3) the *ultraviolet system* using a colorless, translucent, ultraviolet-transmitting backing, and requiring special lighting, filters and a beam-splitter camera; (4) the *infrared system*, using a rear-illuminated translucent screen or black velvet backing, filtered front illumination and a beam-splitter camera; and (5) the *sodium lamp system*, using a special yellow backing and a beam-splitter camera fitted with special prisms.—M.B.K.

8mm Film with Edge Track of Cut Magnetic Tape, W. Straub (Agfa A.-G.), *Kino-Technik*, 16: 59-60, Mar. 1962.

The coating of magnetic tracks onto standard films, which started in 1947, is particularly suitable for wide tracks. Smooth-edged strips, 0.8mm wide and 250 meters long, cut from magnetic tape, are available for lamination to the back of 8mm film by application of a solvent for cellulose acetate. Great care is required for satisfactory sound quality. Agfa Magnetobespurungsband F 4 has been developed particularly for this use. It excels in abrasion resistance, adhesion and the reproduction of high frequencies.

SPACE SCIENCE

Surface Effects of Radiation on Transistors D. S. Peck, R. R. Blair, W. L. Brown and F. M. Smits, *Bell System Tech. Jour.*, Vol. XIII, No. 1, 95-129, Jan. 1963.

Observation of surface effects of ionizing radiation on several types of transistors indicates that in reverse-biased devices these effects occur at much lower radiation dosage than in unbiased devices or bulk semiconductor material. Further, the total radiation dose rather than dose rate seems

often to be the more important factor in the effect. The type of particle used in irradiation is unimportant; the significant factor is the ionization it produces. The effects seem to arise from ionization of gases within a transistor encapsulation and interaction between the ionized gas and residual semiconductor surface contaminants. This results in inversion layers at the device surface and thus in alteration of junction characteristics. The changes in device properties are not permanent, but the recovery after removal from radiation is complex and proceeds with characteristic times between seconds and days.

Different types of devices may respond quite differently to exposure, and the response is different even between different batches and individuals indicating a dependence upon device processing.

TELEVISION

Dimensions of the Picture on Motion-Picture Films and Transparencies for Television (in Russian), S. K., *Tekh. Kino i Televideniya*, 6: 73-76, June 1962.

The provisions of the American, French and British Standards and an ISO draft standard on the dimensions of the picture on motion-picture films and transparencies for television are surveyed.—S.C.G.

Television Line Time-Base Output Stages Using Transistors, K. E. Martin, *J. Brit. I.R.E.*, 7, July 1962.

The paper discusses the peak VA products to be handled by the line output transistor and efficiency diode for 70-, 90- and 110-degree picture tubes with "wide" and "narrow" necks. Various aspects of the circuit design are described, and a complete design is given of the output stage for a 90-degree picture tube operating at 12 kv.

Brightness, Contrast, and Sharpness of the Image in the Basic Types of Color Television Receivers (in Russian), S. V. Novakovskii, *Tekh. Kino i Televideniya*, 6: 33-40, Mar. 1962.

Telecine Transmission with the Supericonoscope (in Russian), G. V. Braude,

**CONVERT YOUR
SERIES 20
MOVIOLA TO
MULTIPLE SOUND
EDITING**

with the **CAMART ADD-A**



for further information write: **the CAMERA MART inc.**