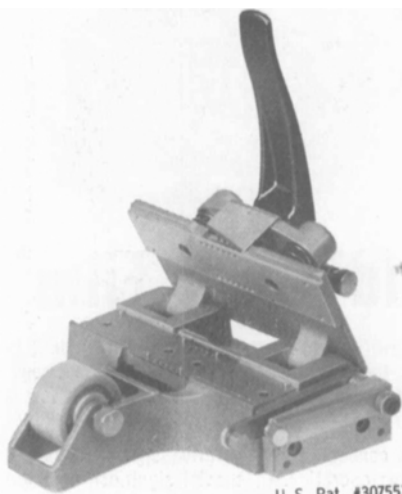


Warmly received
in film centers
throughout the
world, a TAPE
PERFORATOR
FILM SPLICER
named.

*Guillotine



Designed for precision splicing of motion-picture film with non-perforated dry Mylar tape

Custom-made models for 16mm, 35mm and 8mm start at \$175

Mylar Tape:

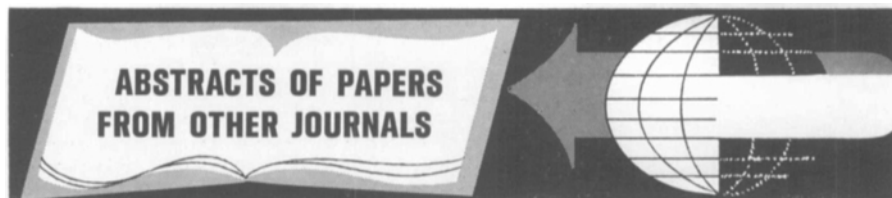
16mm, 1-11 rolls \$1.50 per roll, 12 or more \$1.40 each
35mm, 1-11 rolls \$1.75 per roll, 12 or more \$1.65 each
8mm, 1-11 rolls \$.75 per roll, 12 or more \$.70 each

Authorized Dealers: F&B/CECO—New York, Hialeah, Behrend's—Chicago, Cleveland, Detroit, Kansas City, Memphis, Gordon Enterprises—Hollywood, Jack Pili's—Hollywood, S.O.S. Photo-Cine-Optics—New York

* Guillotine splicers have red-colored name plates—your assurance of authorized factory service and parts

EXCLUSIVE UNITED STATES IMPORTER

Parliament Equip. Corp.
630 Ninth Avenue
New York, New York



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 USSR, 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 *Tekhnika Kino i Televidinya* can be consulted at, or borrowed from, the Society's Headquarters Office; also of possible interest to some readers may be three papers which have been translated from the Russian and are available as manuscripts on loan from Society Headquarters:

- (1) L. G. Golshtein, I. Ya. Levin and T. I. Maksimov, "Optical printer," *Tekh. Kino i Telev.*, 3, No. 10, 58-62, (1959).
- (2) M. M. Lisogor, "The 'Rossiya' Universal Cine Theater," *Tekh. Kino i Telev.*, 6, No. 5, 1-8, (1962).
- (3) I. B. Gordiichuk, "The present state of the manufacture of cine apparatus in the USSR," *Tekh. Kino i Telev.*, 6, No. 5, 3-19, (1962).

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 Engineering Index, Inc., 345 East 47 St., New York, N.Y. 10017, with the editorial cooperation of the Society of Photographic Scientists & Engineers.

The subject areas are grouped below:

- Cameras
- Exposure Determining Devices
- General, History, Training, Bibliography
- High-Speed Photography
- Medical Photography
- Miscellaneous Apparatus
- Motion Pictures
- Photographic Theory and Materials
- Projectors and Viewers
- Sound Recording and Reproduction
- Special Applications
- Television

CAMERAS

Improvements in or relating to motion-picture cameras (British Pat 981,101), J. Hampl; assigned to Meopta, Narodni Podnik; Sept. 15, 1962-Jan. 20, 1965. 2 pp., 1 plate.

In an automatic threading system for a motion-picture camera, the film is passed through the gate, around the inside of a curved bottom-loop film guide onto a take-up core. This core has a large central hub carrying sprocket teeth to engage the film. [See also: Jan Hampl, "The Adastr 8mm Motion-Picture Camera System," *Jour. SMPTE*, 73: 325-329, Apr. 1964.]—C.W.H.

The optical performance of the SFR high-speed streak camera (in Russian), Yu. A. Zatsepin, *Zh. Nauch. i Priklad. Fot. i Kinemat.*, 9: 463-464, No. 6, Nov.-Dec. 1964.

The figures for the optical performance of the Soviet-made SFR high-speed camera are tabulated.—S.C.G.

EXPOSURE DETERMINING DEVICES

Apparatus for the determination of the direction of sunlight in outdoor cinematography (in Russian), I. Ts. Pikman, *Tekh. Kino i Telev.*, 8: 61-63, Dec. 1964.

A simple apparatus for determining the position of the sun at different times of the day consists of a simple moving-disc type of compass which is marked with the hours of the day and provided with direction lines in such a way that when the compass is set to the north the position of the sun can be seen at all hours of the day.—S.C.G.

GENERAL, HISTORY, TRAINING, BIBLIOGRAPHY

Review: Progress of photography in Japan during 1962-1963, edited by the Editorial Board of the Society of Scientific Photography of Japan (1963), *Bull. Soc. Sci. Phot. Japan*, No. 13, 31-46, Dec. 1963.

Brief reviews are given on photographic sensitivity, sensitive materials, special photographic agents, photographic raw materials, photographic optics, photographic equipment, electrophotography and applied photography. Bibliographies are included with each section.—Anon.

The film in scientific research, Anon., *Brit. J. Phot.*, 111: 776-777, 787, Sept. 1964.

Exploratory discussions are being conducted by the Department of Scientific and Industrial Research into the establishment of a new central research photography unit. The findings of the committee set up to investigate the exploitation of cinematography in government-sponsored scientific research are reviewed.—N.W.

Factors in the process of binocular perception of space in stereoscopic cinematography (in Russian), V. S. Shchekochikhin, *Zh. Nauch. i Priklad. Fot. i Kinemat.*, 9: 304-317, July-Aug. 1964.

A review is given of the literature on stereoscopic cinematography, the optics of stereophotography and the physiological optics of stereoscopy, over the last 35 years. (Bibliography of 145 references.)—S.C.G.

Rapid access, C. I. Jacobson and L. A. Mannheim, *Perspective*, 6: 215-228, No. 4, 1964.

The literature on rapid-access processing of photographic film is reviewed. (Bibliography of 22 references.)—S.C.G.

Camera objectives for 8mm cinematography (in Russian), F. S. Novik, *Tekhn. Kino i Telev.*, 8: 65-72, Dec. 1964.

Current objectives for 8mm cinematography manufactured outside the Soviet Union are surveyed.—S.C.G.

HIGH-SPEED PHOTOGRAPHY

Investigation of brittle fracture in steel by means of ultra-high-speed photography, J. G. A. de Graaf, *Applied Optics*, 3: 1223, Nov. 1964.

The propagation of brittle fracture in steel was studied with the aid of ultra-high-speed photography using an Avco streak camera and a Barr and Stroud rotating mirror-framing camera. Also, the dynamic stress pattern caused by the running crack was investigated with the aid of a photo-stress sheet glued onto the surface of the steel plate, using the framing camera. From the experiments it was found that brittle fracture in steel propagates in an intermittent way. The apparatus and the optical methods are described and the striking results are given.

High-speed motion-picture photography in the wire and cable industry, J. J. Stefaniszyn, *Wire and Wire Products*, 38: 1093-1094, 1096, 1161, No. 8, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 7.46.-218, 1964.

An account is given of the use of high-speed photography by the Canadian firm of Northern Electric Co. for studying the work of machines in the manufacture of wires and cables. A 16mm motion-picture camera with continuous film transport and rotating glass prism is used to give a range of 150 to 8,000 frames/sec. Lighting of the lathes and mechanisms for photography at 1,500 frames/sec is carried out with motion-picture spotlights with reflectors and lens optics. Photography at a higher frequency is carried out with tungsten lighting, with water cooling and with gas discharge tubes with an inert filling. The projector used operates at 2 to 25 frames/sec with facilities for holding the frame and for reversed motion.—S.C.G.

Simple high-speed cinematography of nanosecond exposure, H. Fischer and A. Fritzsche, *Applied Optics*, 3: 1235, Nov. 1964.

Adequately timed high repetition rate nanosecond flashes for photographic observation of nonluminous particles of minute size are obtained by application of d-c voltage, and short rates up to 10 kc/sec are produced by such a free-firing source with a time jitter totaling ~0.3 msec. This simple method is satisfactory for the microscopic evaluation of fluid dissipation processes. Studies of the statistics of overall fluid motion require more exact timing if evaluated by a motion-picture presentation.

High-speed photography for micrography, J. S. Courtney-Pratt, *Applied Optics*, 3: 1201, Nov. 1964.

A brief review is given of those methods of high-speed photography that are or may be useful for micrography. When

recording an event at a high lateral magnification, the image is moving much faster than the object, so that exposure times must be proportionately reduced. Moreover, at high lateral magnification, the available light flux per unit area of the photographic emulsion is in general much less. These two effects make high-speed micrography the most difficult branch of high-speed photography. In some ranges of speed and magnification, relatively conventional equipment is adequate, but there is no single technique that will cover all situations.

Ultrarapid cinematography and boiling at high pressure (in French), R. Séméria, *Houille Blanche*, 18: 679-686, No. 6, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 10.46.-203, 1964.

Results are given of the study by high-speed cinematography (8,000 frames/sec) of the boiling of a large volume of water under a wide range of pressures (from the order of 1 atmosphere to 140 kg/cm²).—S.C.G. (Abridged from *Ref. Zh., Fotokinetekh.*)

Ultrarapid cinematography with the aid of glass fiber optics (in Dutch), P. Tegelaar, *Polytechn. Tijdschr.*, A18: 1101-1103, No. 24, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 10.46.201, 1964.

A description is given of a high-speed camera made by the firm of Langham Thompson. It takes 160,000 frames/sec with a picture area of 10 by 12.5 cm. Image dissection is carried out by means of a fiber optics system made of glass threads, giving 25 points to 1 cm.—S.C.G. (Abridged from *Ref. Zh., Fotokinetekh.*)

A modern Cranz-Schardin spark high-speed camera (in German), *Wehrtechn. Monatsh.*, 60: Teil. 3, 132-138, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 5.46.-215, 1964.

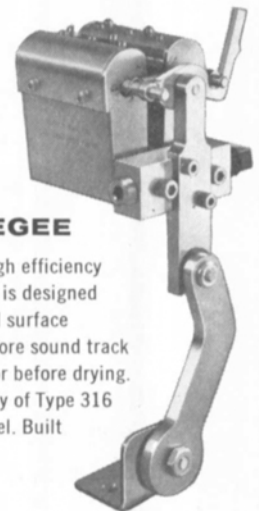
The spark generator described gives a rapid succession of sparks at determined intervals of time to serve as a light source in high-speed photography.—S.C.G. (Abridged from *Ref. Zh., Fotokinetekh.*)

Combined frame and streak exposures (in German), W. Thorwart, *Explosivstoffe*, 11: 261-265, No. 12, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 7.46.163, 1964.

In the study of rapidly occurring processes it is often very convenient to carry out, simultaneously, high-speed photography to give a series of single images and photography to give a continuous record. By thus fixing the results of both kinds of photography on a single film, they can be connected in time and place. In particular, such a combination film can be used to separate two processes occurring in a single part of space. In this case a self-luminous process is photographed as a continuous streak image, while the illuminated process is recorded as separate images. Examples are given of the practical use of such combined photography for studying the processes of ignition in gaseous mixtures, the burning out of electrical fuses and the burning through of steel plates by laser beams. The cameras and equipment used for this photography are mentioned briefly.—S.C.G. (Translated from *Ref. Zh., Fotokinetekh.*)

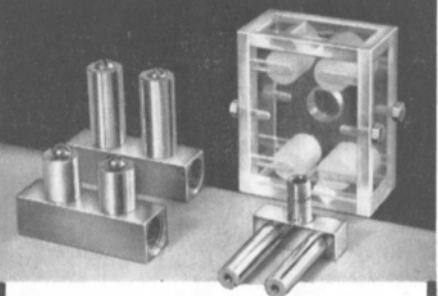
Looking for an easy way to remove surface moisture from films?

use **TREISE**
"HIGH-EFFICIENCY"
SQUEEGES!



OTT SQUEEGEE

Extremely high efficiency air squeegee is designed to remove all surface moisture before sound track application or before drying. Made entirely of Type 316 stainless steel. Built to very fine tolerances.



SQUEEGEES

High efficiency box-type squeegee is ideal for final squeegeeing before drying. Unit is made of teflon and plexiglass. Also shown are stainless steel knife squeegees for preventing carry-over of both chemicals and water. Knife and box-type squeegees come in 16mm and 35mm sizes, (also 70mm-box squeegee only).

Write for FREE CATALOG!

TREISE
ENGINEERING, INC.

1949 First St. • San Fernando, Calif.
Phone: (213) 365-3124

OUR CLAIM
that a

**BLOWN ARC
PROJECTION
LAMP
WILL
DELIVER
50% MORE
LIGHT**

than any other
commercially
available lamp has

**NEVER
BEEN
REFUTED!**

See
your dealer
now.

THE

Strong

ELECTRIC

CORPORATION

79 City Park Avenue
Toledo, Ohio 43601
Phone (419) 248-3741

LIGHT SOURCES

Calculation of the points of aspherical surfaces of lighting systems (in Polish), W. Rupp, *Pomiary, automat. kontrola*, 9: 336-337, No. 8, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 6.46.89, 1964.

A method is described for calculating the points of an aspherical surface for an arbitrarily chosen direction of the rays at different heights of incidence. The method is worked out for condensers most frequently used, in which the first surface is spherical and positive while the second is aspherical. The scheme can easily be modified for systems with a supplementary meniscus in front of the aspherical lens. As an example, points are calculated for the aspherical surface of the condenser of the lighting system of a narrow-gage motion-picture projector. Such a condenser did not deviate from the technical specifications.—S.C.G. (Abridged from author's abstract.)

MEDICAL PHOTOGRAPHY

Fluorescence motion-picture photography of the retinal circulation, a description of technique and normal retinal blood flow, L. M. Hart, A. Heyman, J. W. Linhart, H. McIntosh and N. J. David, *J. Lab. Clin. Med.*, 62: 703-709, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 4.46-221, 1964.

A method is described for taking motion pictures (10 to 16 frames/sec) of the passage of fluorescein through the retinal vessels. Fluorescein dye injected into an antecubital vein has been photographed during its passage through the retinal vasculature with a specially adapted motion-picture camera and binocular ophthalmoscope. The entire sequence of retinal flow can be continuously visualized without resort to multiple injections and the grouping arrangements necessary with "still" techniques. This technique provides a safe, convenient and reliable means for observing the hemodynamic changes in the retinal circulation due to a variety of physiologic stimuli and for studying the alterations in retinal blood vessels in a number of disease states affecting the optic nerve and retina.

MISCELLANEOUS APPARATUS

A combined underwater camera and bottom grab: A new tool for investigation of deep-sea benthos (in English), R. J. Menzies, L. Smith and K. O. Emery, *Intern. Rev. ges. Hydrobiol.*, 48: 529-545, No. 4, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 6.46.214, 1964.

A description is given of the construction of a large deep-sea bottom grab combined with an autonomous system of underwater photography and lighting for the study of marine flora and fauna. This combination makes it possible not only to raise samples of the sea bed and animal and plant life, but also to make a preliminary photograph of their natural disposition, the relief of the bottom and tracks on the sea bed. Technical details of the waterproof housing for a Hasselblad camera and of the lighting are given.—S.C.G. (Abridged from *Ref. Zh., Fotokinetekh.*)

Facilities for dynamic cinematography and camera transport (in Russian), V. I. Grigor'ev, *Tekh. Kino i Telev.*, 8: 38-45, June 1964.

A number of cranes, dollies and other equipment for making dynamic shots in cinematography, designed in the Mosfil' Studios, are described.—S.C.G.

Helivision—a new camera mounting system, P. Lambermont, *Helicopter and Hovercraft World*, 7: 76-77, No. 3, 1964; *Ref. Zh., Fotokinetekh.*, Abstract No. 10.46-151, 1964.

A method of mounting a motion-picture or television camera on a helicopter is described. A support having the shape of a question mark is fastened to the floor of the helicopter; this support has a square cross section. To its upper part an antivibration device is fastened, which carries two Cardan suspensions. The camera hangs on one of these and a counterweight on the other.—S.C.G. (Translated from *Ref. Zh., Fotokinetekh.*)

Apparatus for the automatic analysis of photographically recorded curves (in French), M. Planchais, *Recherche aéro-naut.*, No. 92, 55-56, 1963; *Referativnyi Zhur., Fotokinetekhnika*, Abstract No. 1.46.200, 1964.

The device automatically determines the coordinates of the curve being studied, which is constructed in the system of rectangular coordinates. The numerical information that is obtained is transferred to perforated tape for use in computers. The picture containing the curve being analyzed is fixed onto a cylinder rotating evenly at 67 rpm. A narrow beam of light is directed onto the surface of the cylinder, is reflected and then falls onto a photoelectric cell. The passage of the curve across the illuminated portion causes a voltage pulse in the photocell circuit. At each point on the abscissa the height of the ordinate is determined by two pulses, the first switching on the counter and the second switching it off. As the cylinder rotates, it moves along a screw with a very small pitch of 0.25 mm. The abscissa counter is tripped at each rotation of the screw. Hence the value of the coordinate is evaluated at every 0.25 mm. The return to zero is carried out by a second screw with a larger pitch. The drive is made from a synchronous motor. The pulses from the counters are passed on to a coding unit to the perforator. The device can measure both black curves on a white background and white curves on black. The processing of a curve comprising 1,000 points takes place in 20 min.—S.C.G. (Translated from *Referativnyi Zhur., Fotokinetekhnika*.)

Electronic aerial photography using a computer, V. V. Kol'tsov, *Byull. Nauch.-Tekh. Inform. minister. Geol. i Okhrany Nedr S.S.S.R.*, No. 9 (4), 16-21, 1962; *Referativnyi Zhur., Fotokinetekhnika*, Abstract No. 1.46.220, 1964.

In electronic aerial photography use is made of a method of scanning the terrain with an optical-mechanical, or an electronic system. Electrical signals proportional

to the brightness of the subject form an image on the screen of a cathode-ray tube which is photographed in the form of frames or a strip. One of the main advantages of electronic photography is the possibility of analysis and transformation of the electrical signals directly during the process of photography, which makes possible the automation of the decoding. It is also possible to carry out photography in much more extended regions of the spectrum than with ordinary aerial photography.—S.C.G. (Translated from *Referativnyi Zhur., Fotokinetekhnika.*)

Photorecording for the control of a technical process (in German), M. Reishuas, *Maschinenmarkt*, 69: No. 67, 17-20, 1963; *Referativnyi Zhur., Fotokinetekhnika*, Abstract No. 1.46.199, 1964.

An account is given of the use of recording cameras in controlling technical processes and a number of suitable cameras are described.—S.C.G. (Abridged from *Referativnyi Zhur., Fotokinetekhnika.*)

New electric drive systems for cinematography (in Russian), E. I. Usyshkin and L. I. Sazhin, *Tekh. Kino i Telev.*, 8: 1-11, May 1964.

The hysteresis motor shows promise as a compact, low-noise electric drive for cinematography with synchronized sound. A circuit for a frequency converter for use with the motor makes full use of transistors.—S.C.G.

New image-recording processes. The utilization of electroluminescence (in French), P. H. *Atomes (Paris)*, 18: 313-315, No. 204, 1963; *Ref. Zh., Fototekh.*, Abstract No. 5.46.109, 1964.

A form of image-retaining electroluminescent panel is described.—S.C.G. (Abridged from *Ref. Zh., Fotokinetekh.*)

MOTION PICTURES

Techniscope, a new method of cinematography, F. N. Bush, *Phot. J.* 104: 297-300, Nov. 1964.

The awkwardness and the optical deficiencies of anamorphic systems for camera work are avoided in the Techniscope system in which ordinary lenses are used to achieve a 2-hole-high negative image of aspect ratio 2.32:1 on standard 35mm film. This negative image is printed, using a 2X vertical expansion, to give a standard, squeezed print image for anamorphic projection. In this way a wide-screen color negative can be obtained at the same price as a conventional black-and-white negative.—G.I.P.L.

Transport of growth substances in the hypocotyl of the germinating pea seed (*Pisum Sativum L.*) studied by cinematography (in English), M. Spurny, *Forschungsfilm*, 4: 536-543, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 7.46.219, 1964.

An account is given of a study of plant growth carried out with a Cinephon 35mm motion-picture camera at taking speeds of 10 and 0.3 frame/sec.—S.C.G.

New Methods of Composite Cinematography (in Russian), E. V. Ksandrov and Ya. S. Kulish, *Tekh. Kino i Telev.*, 8: 6-12, Aug. 1964.

A method of composite cinematography is discussed which is based on the simultaneous superposition in perspective of parts of a frame taken on location, from drawings and from models. A description is given of apparatus for this purpose and examples are given of its use in some experimental shots.—S.C.G.

PHOTOGRAPHIC THEORY AND MATERIALS

The Colloquio Internazionale sulla Scienza della Fotografia-Turin, 23-28, Sept. 1963; W. F. Berg, J. Eggert, E. Klein, A. Langner and E. Moisar, *J. Phot. Sci.*, 12: 241-268, No. 5, Sept.-Oct. 1964.

A selective summary of the Turin Colloquium is given. Klein and Moisar cover the sessions on the properties of photographic emulsion grains, including crystal form and growth, lattice properties and adsorption on crystal faces. The section on fundamental processes of latent-image formation is summarized by Berg. The physical properties of the developed image were dealt with in two sections: information aspects of the photographic image, and image color and covering power, reviewed by Langner and Eggert, respectively.—S.C.G.

Investigations into the accuracy of measurement of aperture errors in photographic objectives with two different methods (in German), H. Truckenbrodt, *Wiss. Z. Hochschule Elektrotechn. Ilmenau*,

9: 363-371, No. 3, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 4.46.62, 1964.

An optical polarization method is based on the coincidence, in the focal plane of the objective being tested, of two images of a slit which are constructed from rays separated by a zone diaphragm. The slit is in the focal plane of the collimator; it is divided horizontally into two parts by two films with mutually perpendicular planes of polarization. Between the objective of the collimator and the diaphragm is a second pair of films, selected so that half of the slit is imaged by rays proceeding only through the zone of half of the objective, separated by a diaphragm. Coincidence of the images observed in a microscope is brought about by moving the microscope or the objective being studied. In another method, not a slit but a point diaphragm is used as a test object, the images of which are brought together in a similar manner. The systematic errors of the methods and experimental apparatus are discussed and a study has been made of the influence of the dimensions of the diaphragm aperture on the accuracy of measurement. A method of treating the results and determining the errors is described. It is shown that the optical polarization method makes it possible to attain a higher accuracy if defects in the film and errors in the scale measuring the displacement of the objective are sufficiently small.—S.C.G. (Translated from *Ref. Zh., Fotokinetekh.*)

Points in the use of LN-5 film for outdoor and studio cinematography (from experience in the production of the film



THE REVOLUTION IS IN PRODUCTION*

BLACK & WHITE RELEASE PRINTS

featuring . . .

- No darkroom
- No chemicals
- Heat development
- Dual printing heads
- Contiguous operation
- Exposure control
- Long shelf life
- Scratch resistance



* The revolutionary new Metro/Kalvar 16mm Motion Picture Printer-Processors are now in production manufacturing at Chicago Aerial Industries, Barrington, Illinois.

For prices and delivery information write:

METRO/KALVAR, INC. 550 FIFTH AVENUE, N.Y., N.Y. 10036

LaVeZZi
high
precision
drive
sprockets
for
Tapes,
Film,
Charts

Whether your tapes, charts or films have round or rectangular perforations, the ideal drive units are LaVeZZi sprockets — Precision parts with every tooth perfectly formed, exactly sized and wholly free of burrs. Inquiries, quote requests invited. Stock items or made to your specs.

BROCHURE SENT ON REQUEST

SPROCKET SPECIALISTS SINCE 1908

LaVeZZi
MACHINE WORKS
4635 W. LAKE STREET
CHICAGO 44, ILLINOIS
AREA 312-378-1636

Meeting at the River Crossing (in Russian), S. A. Sheĭnin, L. I. Arkhipov and G. I. Fabrikant, *Tekh. Kino i Telev.*, 8: 1-6, July 1964.

The Mosfil'm Studios have recently used the new Soviet color negative film LN-5, which is balanced for tungsten light, for both outdoor and studio shooting. Recommendations are given for the choice of correcting filters for the outdoor shots, and observations are made on the lighting, make-up and processing of the film. It is suggested that the use of the new film can be considerably extended.—S.C.G.

Heat stress of motion-picture film and its measurement (in Czech), M. Jiráček, *Jemná mech. a opt.*, 8: 301-303, No. 10, 1963; *Ref. Zh., Fotokinotekh.*, Abstract No. 4.46.178, 1964. (Title only.)

Lichtenberg figures observed on color negative films in low atmospheric pressure (in English), Arai Bunji, *Sci. Repts. Yokohama Nat. Univ.*, 31-41, Sec. 1, No. 8, 1961; *Ref. Zh., Fotokinotekh.*, Abstract No. 6.46.142, 1964.

A number of studies on the formation of Lichtenberg figures by voltage pulses onto color film are reported. Lowering the pressure shows a considerable influence on the dimensions of both positive and negative figures. Lengthening of the negative branches is much greater than that of the positive branches under the same conditions, and the dimensions of the branches alter continuously with the change in pressure. The envelopes of the negative figures penetrate into deeper layers of the emulsion and so form a spatial figure, while positive figures are formed only on the surface. The envelopes of negative figures are also formed in the deep layers at normal pressure, but with considerably higher peak values for the voltage impulse; as pressure is lowered, deeper layers are reached with lower peak voltages. Below a certain critical pressure and with a given voltage, the three-dimensional structure of the negative figures disappears and both types of figure are confined to the surface. Typical photographs of Lichtenberg figures are displayed.—S.C.G. (Abridged from *Ref. Zh., Fotokinotekh.*)

Modern motion-picture film stock (in Russian), E. A. Iofis, *Tekh. Kino i Telev.*, 8: 60-67, Nov. 1964.

A survey has been made of current motion-picture film stock of Soviet and foreign manufacture and the main photographic characteristics are tabulated. The survey covers black-and-white negative, color negative, reversal (black-and-white and color) and print stock.—S.C.G.

A new set of motion-picture negative films for feature cinematography (in Russian), N. V. Makarov, V. L. Zelikman and A. C. Kandakhehan, *Tekh. Kino i Telev.*, 8: 6-9, Nov. 1964.

A new set of four negative films is now in production in the USSR. They vary in speed, ranging from a slow film with very fine grain, for special purposes, to a high-speed film for use with poor lighting conditions. Compared with earlier Soviet cine-negative films, the new set has a thinner emulsion layer and smaller grain size, and gives increased resolving power and

acutance, a wider latitude and improved rendering of colors. In addition, the films have been given a high degree of hardening, thus allowing quick drying. They can be used under tropical conditions and can be processed at high temperatures. Their photographic characteristics are discussed.—S.C.G.

NIKFI photographic materials for the vacuum ultraviolet region of the spectrum and their characteristics (in Russian), T. A. Kalinkina, A. N. Kovanova, A. A. Pankova, N. K. Sukhodrev, V. M. Uvarova and M. R. Shpol'skiĭ, *Zh. Nauch. i Priklad. Fot. i Kinemat.*, 9: 286-288, No. 4, July-Aug. 1964.

Data (sensitometric, grain-size, stability) are given for five new Soviet films, developed by the research institute NIKFI, for use in the vacuum ultraviolet ($\lambda < 2000 \text{ \AA}$).—S.C.G.

The possibility of improving the signal/noise ratio of photographic images. Pt. I. Theoretical foundations of the method of superposition of partial signals (in Russian), M. A. Aĭngorn, *Zh. Nauch. i Priklad. Fot. i Kinemat.*, 9: 289-296, No. 4, July-Aug. 1964.

The method of increasing the signal/noise ratio under consideration consists in the preparation of N photographs (either simultaneously or sequentially), each with $1/N$ of the total exposure required, and their superposition. The mathematical basis of the method is studied and it is shown that the improvement in the signal/noise ratio is proportional to \sqrt{N} . The method has some obvious uses, such as in astronomy and the study of spectra.—S.C.G.

The processing of sound and image in a motion-picture printing laboratory (in French), G. Giniaux, *Rev. son.*, No. 489-491, 127, 1963; *Ref. Zh., Fotokinotekh.*, Abstract No. 5.46.158, 1964.

A short description is given of work in the CTM Motion-Picture Printing Laboratories in France.—S.C.G. (Abridged from *Ref. Zh., Fotokinotekh.*)

The production of black-and-white film prints and its photographic control (in Russian), L. P. Krylov and L. M. Greĭdinger, *Tekh. Kino i Telev.*, 8: 7-12, July 1964.

These are deficiencies in the production of motion-picture prints in Soviet film laboratories. The different stages in the process are not adequately linked, which results in a fall in the quality of the prints. It is suggested that continuous photographic control should be introduced, control scales and densities being included in the negative for measurement of all stages of the process. Recommendations for the control of the different stages of the process are given.—S.C.G.

Recent advances in recording of 8mm release prints, G. H. Newberry, *Brit. Kinemat.*, 45: 75-78, Sept. 1964.

Current practice in the recording of 8mm release prints is reviewed. It is expected that 8mm standards will conform with the future $3\frac{3}{8}$ in./sec magnetic-tape standard. 16mm magnetic recording equipment is the best foundation for 8mm transfers.

The design of magnetic heads has been improved. Because of the smallness of 8mm prints, extreme care is necessary in all phases of production work.—G.I.P.L.

The relation between the induction period of development and the pH of the developing solutions (in Russian), V. A. Veldenbakh and P. I. Levina, *Zh. Nauch. i Priklad. Fot. i Kinemat.*, 9: 248-254, No. 4, July-Aug. 1964.

The explanation of the induction period of chemical development is more complicated than would appear from the way in which it is generally treated in the literature. The induction period depends on the oxidation-reduction potential of the developing agents, the potential of the silver system being held constant; on the distribution, number and chemical nature of the active groups of the developing agent; and also on the nature and degree of dissociation of these groups.

Developing agents and pyrocatechin, singly charged over a certain range of pH, show an unambiguous relation between the induction period and the oxidation-reduction potentials. These developers work without an induction period up to a definite value of the potential, and then after exceeding this value they show a small induction period.

Developing agents of the polyhydroxy-compound type (except pyrocatechin at certain pH's) and glycine begin to develop at larger differences of potential between the silver and the developing system than developers that are singly charged. An especially large difference in potential is required by development with hydroquinone, in which the two active hydroxyl groups are set in the para position.

A difference is observed in the action of undissociated hydroxyl and amino groups in the developing agents. The former, unlike the latter, do not show any capacity for development. Developing agents containing only amino groups develop with a larger induction period in the molecular state than when singly charged.—S.C.G. (Translation of author's abstract.)

The spectral sensitivity of black-and-white negative motion-picture films (in Russian), M. K. Grechko, S. V. Natanson, E. M. Savel'eva and Yu. B. Vilenskii, *Tekh. Kino i Telev.*, 27-30, May 1964.

For the most natural reproduction of colored objects a black-and-white film should have a spectral sensitivity distribution similar to that of the eye. Four films (two Soviet films, an experimental film and Kodak XX film) were studied for their color response. As expected from the theory, the latter two films, which have similar spectral sensitivity curves closer to that of the eye, gave the best reproduction. There is still room for improvement in the black-and-white rendering of color.—S.C.G.

A study of the temperature dependence of high-speed development (in Russian), I. V. Blyumberg, R. V. Dimitrov and Yu. D. Usanov, *Zh. Nauch. i Priklad. Fot. i Kinemat.*, 9: 405-410, No. 6, Nov.-Dec. 1964.

Experiments have been carried out to determine the effect of temperature on the

rate of development of a high-speed developer, giving consideration to the processes of swelling, diffusion, the chemical reaction and the induction period. The results confirm the findings of two previous papers. (*Zh. Nauch. i Priklad. Fot. i Kinemat.*, 9: 254, 1964; 9: 336, 1964).—S.C.G.

Taking into consideration data on motion-picture positives in the automation of telecine projection (in Russian), A. V. Vykhodets, *Tekh. Kino i Telev.*, 8: 17-22, Sept. 1964.

A survey has been made of the spread of sensitometric values in a number of motion pictures produced in Soviet studios, for the purpose of regulating the automatic scanning control in telecine projection.—S.C.G.

A new set of black-and-white duplicating motion-picture films (in Russian), V. V. Vasil'ev and L. P. Krylov, *Tekh. Kino i Telev.*, 8: 50-52, Oct. 1964.

A new and improved internegative film and an interpositive film have been produced for use with current Soviet black-and-white negative and print stock. Their sensitometric characteristics are discussed and compared with those of previous versions of these films.—S.C.G.

Magnetic recording media using a thermoset coating on a polyolefin base (U.S. Pat. 3,144,353), J. G. Hargis and D. L. Flowers; assigned to Ampex Corp., Mar. 8, 1963-Aug. 11, 1964.

A magnetic recording media, having good adherence to polyolefin tape bases, consists of three components, i.e., (1) 20 to 70% of a copolymer of styrene (20 to 80%) and butadiene, isoprene, etc. (80 to 20%), (2) 5 to 20% of a melamine-urea-formaldehyde condensation product with an acid number of from 0 to 15, and (3) 15 to 70% of a catalyst that is a poly (fatty acid amide) having the formula: $\text{HO}-(\text{OC}-\text{R}-\text{CONHR}'-\text{NH})_n-\text{H}$, in which R and R' represent straight-chain or branched-chain radicals of from 10 to 22 carbon atoms and n is such that the molecular weight of the amide is from 3,000 to 8,000. These components are mixed together in the presence of a solvent, e.g., toluene, xylene, etc., to provide a coating in which suitable magnetic particles may be dispersed. The base may be polypropylene having a thickness between 0.5 and 1.5 mil; the magnetic coating may be between 0.005 and 0.5 mil. The coating may be applied directly on the polyolefin base or it may be used as a sub-coating—either cured or uncured—on a polyolefin base prior to the application of a conventional coating formulation.—M.B.K.

PROJECTORS AND VIEWERS

A combined speed stabilizer for a universal motion-picture projector (in Russian), A. V. Solomonik, *Tekh. Kino i Telev.*, 19-26, May 1964.

The speed-stabilizing device on the magnetic-sound portion of the Soviet KP30-A projector does not give as good a performance as do the triple-stage and block stabilizers.—S.C.G.

PORTABLE SPOT-FLOOD SUN REFLECTOR!

① "Floods" like a spot light; finger-tip, 3 to 1 brightness control.

② Large (404) model travels everywhere in 7"x42" case.

③ Washable! Mylar surface, (photo shows back side).

④ Tilts, pans, elevates and (new model) rotates to horizontal.

⑤ Leg extends on unlevel ground — center "spike" increases wind stability.

2 sizes, 3 models
\$29.50 to \$149.50

LOWEL-LIGHT
Vari-Flector

PAT. PEND.

STAND ADAPTER

mount hand held lights, Sun Guns, electronic units, etc. on stands and have precise, directional control.

\$5.75

LOWEL-LIGHT
tilter

COMPLETE, COMPACT LIGHTING KIT:

- 6 Lowel-Light tape-up, clamp-on units
- 6 L-L Barndoors
- 2 9 ft. stands
- 3 25 ft. extensions
- 1 L-L Gaffer Tape
- 2 Fuses
- 6 Shockproof compartments hold R40 lamps
- fibreglass case 6" x 23" x 15"
- \$124.50 (less lamps)

LOWEL-LIGHT
UNI-6

LOWEL-LIGHT

429 West 54th Street, New York 19, N. Y.

SMPTE test films for television



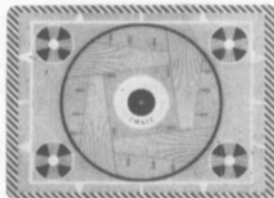
NETWORK, LOCAL, CCTV...

a test film library for
engineering and telecine

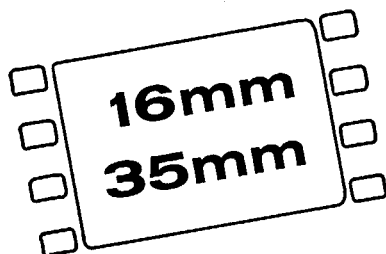
VIDEO TEST FILMS

TEST FUNCTIONS:

- alignment • resolution
- focus • linearity
- low and medium frequency response
- storage and transfer characteristics
- automatic brightness control
- qualitative picture analysis



FOR COLOR TELEVISION



Grey Scale—for setting-up and adjusting
signal generators

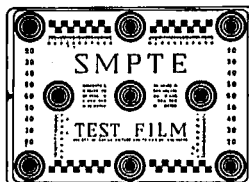
comparative and qualitative test of system's
ability to reproduce color

representative quality Technicolor and Eastman
color prints

PROJECTOR PERFORMANCE

Test and Adjust:

- picture steadiness • jump and weave
- shutter timing (travel ghost)
- framing • focusing
- aperture alignment



SOUND REPRODUCTION *optical / magnetic*

Test, Adjust and Calibrate Projector

- scanning beam slit position
- multi-frequency response
- azimuth and focus of sound optical train
- signal level and balancing, output
- flutter
- scanning beam illumination



FOR THE SCREENING ROOM

Jiffy Test Film: a time saving quick evaluation of 16mm sound projector system performance

for further information
and for a complete listing of test films, write to Department TF

Society of Motion Picture and Television Engineers

9 EAST 41st ST., NEW YORK, N.Y. 10017

Continuously-operating film magazines (in Russian), E. Korobkin and A. Kuperman, *Kinomekhnika*, 30-34, Apr. 1964.

Several continuously-operating film magazines for use in the automatic screening of motion-pictures are described. They have all been designed in the USSR.—S.C.G.

A nonrewind device for a motion-picture projector (in Russian), A. D. Bodrov, V. V. Petrov and I. M. Fonar', *Tekh. Kino i Telev.*, 8: 9-14, Dec. 1964.

A nonrewind spool has been designed in which the film is drawn from the center and is taken up on a similar spool which can serve immediately as a feed spool. Apart from the saving in time, another advantage of eliminating re-winding is the reduction of wear on the film. It is recommended that spools of this type should be a regular feature of Soviet-made motion-picture projectors.—S.C.G.

Telecine—Simplex or Multiplex? A. D. Stevens, *Brit. Kinemat.*, 45: 125-130, No. 4, Oct. 1964.

Simplex operation—one projector per vidicon—results in substantially improved performance, particularly in respect to resolution and contrast range, as compared with multiplexed operation, i.e., two or more projectors per vidicon. Simplex operation, though more expensive than multiplex, will become more popular because of the demand for improved technical performance.—G.I.P.L.

The problem of the optimal curvature of a cinema screen (in Russian), M. R. Savchenko, *Tekh. Kino i Telev.*, 8: 43-49, Aug. 1964.

An analysis of the conditions of viewing in a cinema leads to the conclusion that a screen of radius 0.33 times the sum of the distances to the nearest and farthest rows of the audience gives the maximum viewing angle for the largest number of members of the audience. For the projection of wide-gage films, a radius of about half the length of the auditorium is indicated. The subjective distortion for the majority of viewers is then a minimum over the whole screen. If the radius is increased to the full length of the auditorium, the subjective distortion appears to increase although the objective distortion due to the geometry of the projection is reduced to zero. It is concluded that, with some counterdistortion introduced at the edges of the screen, a cylindrical screen with a radius equal to half the length of the auditorium provides the best surface for film shows.—S.C.G.

Depth of field in projection on a cylindrical screen (in Russian), A. A. Lapauri, *Tekh. Kino i Telev.*, 8: 23-27, Dec. 1964.

Owing to the depth of field of a projection system the screen can be moved forward a certain distance before the loss of sharpness becomes objectionable. This allows a certain curvature to be introduced into the screen before loss of sharpness at

the sides of the picture becomes noticeable. Projection onto a cylindrical screen is analyzed from this point of view, and the calculation of the maximum allowable curvature is discussed.—S.C.G.

Audiovisual projection system (British Pat. 978,124), P. C. Dimitracopoulos and C. D. Pezaris, July 11, 1961–Dec. 16, 1964. 9 pp., 4 plates.

Audiovisual projection slides, (British Pat. 978,125), P. C. Dimitracopoulos and C. D. Pezaris, July 11, 1961–Dec. 16, 1964. 4 pp., 2 plates. (Divided out of British Pat. 978,124.)

The slides consist of a central area in which the transparency is mounted, and which is surrounded by a fixed spiral sound record. The projector incorporates a moving sound pickup which follows the spiral track to reproduce the sound record, the slide being held stationary.—H.J.L.

SOUND RECORDING AND REPRODUCTION

An eight-channel soundtrack on wide-format film prints (in Russian), G. K. Klimenko and S. V. Marsov, *Tekh. Kino i Telev.*, 8: 26–32, June 1964.

The number of soundtracks on 70mm prints can be increased from 6 to 8 without any appreciable loss in quality.—S.C.G.

Improvements relating to the production and reproduction of pictures and sound (British Pat. 973,727), D. Safir, Apr. 29, 1963–Oct. 28, 1964.

Sequential pictures (cine or still) and an associated sound record are arranged in a spiral on a flat disc similar to a gramophone record. The recorded information is reproduced by means of a specially designed turntable and projector system.—H.J.L.

The method of synchronized sound recording used in the central studio for documentary films (in Russian), V. A. Nesterov and V. K. Markhon'ko, *Tekh. Kino i Telev.*, 8: 36–41, July 1964.

A method is described of primary synchronized sound recording on unperforated 6.25mm magnetic tape and recommendations are given for the synchronization of the sound carrier of portable magnetic sound reproducers of Soviet manufacture—the “Reporter-2” (M30), the “Reporter-3” (M75) and the motion-picture cameras “Konvas-Avtomat” and “Rodina” with autonomous power supply—and also for the synchronization of the sound carrier with the a-c mains supply.—S.C.G.

New apparatus for synchronized magnetic sound-recording on an unperforated sound carrier (in Russian), Yu. G. Chizhevskii, *Tekh. Kino i Telev.*, 8: 12–19, May 1964.

New Soviet apparatus for recording and reproducing sound on 6.25mm unperforated magnetic tape is described.—S.C.G.

Some problems in the recording and reproduction of sound on 16mm film prints with magnetic soundtrack (in Russian), N. I. Smirnov, *Tekh. Kino i Telev.*, 8: 32–40, Oct. 1964.

The problem of sound quality on 16mm motion-picture prints with magnetic soundtrack is discussed from the point of view of Soviet conditions. The possibilities of improvement and some problems in the use of 16mm prints in professional studios are also considered.—S.C.G.

Soundtrack response of color films on multilayer stock (in Russian), N. I. Kirillov and A. P. Strel'nikova, *Tekh. Kino i Telev.*, 8: 31–32, May 1964.

Some data concerning the effect of printing and developing conditions on the soundtracks of current multilayer color films are discussed.—S.C.G.

The use of a “positive” photographic soundtrack on film prints (in Russian), A. I. Seredinskii, *Trudy Leningrad. Inst. Kinoinzh.*, No. 10, 103–110, 1964; *Ref. Zh., Fotokinetekh.*, Abstract No. 9.46.180, 1964.

Attention is drawn to the necessity of raising the quality of the sound on single-channel film prints in which a photographic soundtrack of comparatively low quality is obtained by printing. The soundtrack can be improved by using the method of (positive) intensive recording, which eliminates the distortions which result from copying and defects in reproduction. Correction of the nonlinear transmission curve in intensive (positive) recording must be carried out by an optical-mechanical method, using for this purpose light-modulating systems with electromechanical modulators, with which the optimum quality may be obtained. The use of fine-grain positive motion-picture films makes it possible with this positive recording to obtain qualities much higher than those obtained with magnetic recording on single-channel motion-picture films on 35mm film. The study of the positive system of recording should be extended with the aim of using it in film-printing apparatus for obtaining soundtracks starting from magnetic soundtracks prepared in the studio.—S.C.G.

SPECIAL APPLICATIONS

Conference on the applications of stereocinematography and stereophotography in scientific research (in Russian), A. A. Sakharov, *Zh. Nauch. i Priklad. Fot. i Kinemat.*, 9: 472–473, No. 6, Nov.–Dec. 1964.

A brief report is given on a conference held in Moscow, May 19–20, 1964. The contributors and the titles of their papers are listed.—S.C.G.

Photographic recording for overseeing a technical process (in German), M. Reishaus, *Maschinenmarkt*, 69: 18–20, No. 86, 1963; *Ref. Zh., Fotokinetekh.*, Abstract No. 5.46.213, 1964.

A stroboscope is used in photographic recording with an electronic flashlamp, the frequency of firing of which can be altered over the range 0 to 300 cps with a length of flash of 10 μ sec. The apparatus is intended for the observation of moving machine parts; readings are given in cycles per second or revolutions per minute. The instrument error is less than 2%.—S.C.G. (Translated from *Referativnyi Zhur.*, *Fotokinetekhnika.*)

YOUR DIVIDEND

from
LAB-TV

In a word that dividend is quality. The kind of quality processing your investment deserves. Quality that has made Lab-TV the east's #1 source for reversal processing. There are two other dividends you can count on from Lab-TV. 1. Fast Reliable Service. 2. Fair Competitive Prices. Could you want more?

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 • Ultrasonic Film Cleaning • A & B Roll Prints • Fades-Dissolves • Timed Prints • Edge Numbering • 8mm Processing

LAB-TV

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

A small-angle optically focusing x-ray diffraction camera in biological research, Pt. I, G. F. Elliott and C. R. Worthington, Pt. II, G. F. Elliott, *J. Ultrastruct. Res.*, 9: 166-170, No. 1-2, 1963; *Ref. Zh., Fotokinotekh.*, Abstract No. 5.46.198, 199, 1964.

In x-ray diffraction cameras, rotating anodes in the x-ray tubes are recommended to decrease the exposure. In the Frank camera the difficulty is overcome by using double reflections from optically plane surfaces. Attempts were made to use a camera of this type for biological studies, although it was not intended for very long exposures. A method of adjusting the camera is given together with the details of the parts used and the technical possibilities in its use. A

quantitative evaluation is made of the lighting conditions at the image.—S.C.G. (Abridged from *Ref. Zh., Fotokinotekh.*)

TELEVISION

An analysis of film granularity in television reproduction, K. Hacking, BBC Engineering Division Monograph, No. 54, British Broadcasting Corp., London, Aug. 1964, 24 pp.

The transfer of emulsion granularity in a television system when film is the picture source is considered in some detail using the Wiener spectrum of the film grain to describe its near-random statistical properties. The modifying effects of some basic parameters associated with television film-scanning and the subsequent processing of

the generated video signal are discussed and illustrated by numerical examples based on the measured Wiener spectra of several commonly used black-and-white cine-film emulsions. The differences in the character and magnitude of the granularity obtained in the final display, as the result of the several methods and processes employed in the various television applications of film are examined. Displayed granularity curves are deduced for each of four processes, by selecting appropriate emulsions and by assuming specific processing conditions considered to be representative of operational practice. After discussing briefly several important factors associated with the visibility of the displayed granularity, an attempt is made to establish, from existing

Professional Services

Professional Motion Picture Equipment
RENTALS * SALES * SERVICE
Phone or write for latest Rental & Sales Catalogs
Birns & Sawyer Cine Equipment Co., Inc.
6424 Santa Monica Blvd.,
Hollywood, Calif. 90038
(213) HO 4-5166

SELLING?
ALL MARKETING, INDUSTRIAL or RESEARCH SERVICES including IMPORT and EXPORT outlets, LICENSING arrangements, etc.
Write to: E. J. BRUCE-VANDERPUITE LTD.
P.O. BOX 90, ACCRA, GHANA. Telex: 207 OVERSEAS OFFICES *
UNITED KINGDOM U.S.A.
724, FULHAM ROAD 10 WEST 33 STREET
LONDON S.W. 6 NEW YORK, N.Y. 10001

MUSIC FOR EVERY MOOD
Complete background music library cleared for RADIO-TV-MOTION PICTURES
Quality recordings by full-sized orchestras
Complete selection of sound-effects records also available
WRITE FOR CLEARANCE APPLICATION FORMS AND CATALOGS
THE CAMERA MART, INC.
1845 Broadway, New York 23

CRITERION
FILM LABORATORIES, INC.
Complete laboratory facilities for 16 & 35mm black-and-white and color
33 West 60th St., New York 23, N. Y.
Phone: COLUMBUS 5-2180

ELLIS W. D'ARCY & ASSOCIATES
Consulting and Development Engineers
8mm Magnetic Sound Printers
Motion-Picture Projection
Magnetic Recording and Reproduction
Box 1103, Ogden Dunes, Portage, Ind. 46368
Phone: (219) 895-2585

World's Largest Library of
SOUND EFFECTS RECORDS
Write for free catalog covering every needed sound effect—airplanes, autos, animals, birds, crowds, industrial, marine, trains, war, guns, weird—also background and mood music.
FLORMAN & BABB, INC.
68-a West 45 St, New York 36, N. Y.

RENT
SEND FOR CATALOG
16mm, 35mm, 70mm Motion Picture Cameras
High Speed Cameras
Special Cameras
Lenses
Lights
Processing Equipment
Editing Equipment
GORDON ENTERPRISES
5362 N Cahuenga, North Hollywood, Calif.

REELS • CANS • FIBER CASES
MOTION PICTURE ENTERPRISES
Tarrytown, N. Y. 10592
N.Y.C. Tel: 212 CI 5-0970

TUFF COAT
Cleans, kills static, lubricates and invisibly coats and protects all types of film against scratches and abrasions. SAFE, easy to use. NO carbon tet. Special type available for magstripe and video tape. Write for brochure "S"
NICHOLSON PRODUCTS COMPANY
3403 Cahuenga Blvd. Los Angeles 28, Calif.

FOR RENT
Motorized 16mm Editing Tables with magnetic/optical Moviola soundhead and Zeiss viewer
M. W. Palmer, 73-40 Vlegh Pl.,
Flushing 67, N.Y.

SAVE 25-50% ON PRINT COSTS
Users of Permafilm Protection and Perma-New Scratch Removal show savings ranging from 25% to 50% and more by lengthening the life of their prints. A money-back test will convince you.
PERMAFILM INCORPORATED
79 Fifth Ave., N. Y. 3, AL 5-5757-8-9
PERMAFILM INC. OF CALIFORNIA
7264 Melrose Avenue
Hollywood Webster 3-8245

PHOTO ANALYSIS
Motion Picture Special Applications
Photographic High Speed
Time Lapse
Underwater
Aerial
Services Equipment Rental
PHOTO INSTRUMENTATION CORP.
630 Ninth Ave., N.Y. 36, N.Y. (212) PL 7-5730

DAMAGED FILM HOSPITAL
Why Junk Damaged, Scratched, Brittle, Stained, "Rainy," Worn Film?
"THE FILM DOCTORS" Can Restore It To Original Screening Quality With Amazing R & R Treatments:
RAPIDWELD: restores damaged originals of negatives and prints
RAPIDTREAT: completely protects and prolongs the life of new prints
Rapid Film Technique, Inc., 37-02 27 St.,
Long Island City 1, N.Y. STilwell 6-4600

RESEARCH, DESIGN AND DEVELOPMENT OF EQUIPMENT FOR THE PHOTO INDUSTRY
Complete Line of Animation, Filmstrip and Special Effects Equipment
RICHMARK CAMERA SERVICE, INC.
516 Timpson Pl. Bronx, N.Y. 10455
LU 5-0730 LU 5-5995

FILM PRODUCTION EQUIP. RENT • LEASE • SERVICE
World's largest source of equipment for producing, processing, recording, editing, etc.
S.O.S. PHOTO-CINE-OPTICS, Inc.
New York City: 387 Park Ave. S., 212/MU 9-8150
Hollywood, Calif.: 6331 Hollywood Blvd., 407-2124

SONIC FILM RECORDING
The Complete Motion Picture Service
16/35mm Single or Multi-Channel Dubbing
16/35mm Optical Tracks—24-hr Service
Transfer any 1/4" sync signal
Price List-Location Recording-4 Air-cond. Studios-Interlock
1230 W. Washington Blvd., Chicago • CH 3-2604

COMPLETE 16MM PRODUCERS SERVICES send for Brochure
DAILY PROCESSING OF EKTACHROME
COMMERCIAL & EKTACHROME ER*
Licensed by Eastman Kodak
SOUTHWEST FILM LAB., INC.
3024 Ft. Worth Ave. Dallas 11, Texas FE 1-8347

STANCIL-HOFFMAN CORP.
• **MINITAPE PROFESSIONAL BATTERY Operated Portable Recorder, Mono, Stereo, Synchronous**
• **MAGNETIC FILM RECORDERS, Single and Multi-Channel, 16, 17 1/2, 35 MM**
• **BROADCAST LOGGING Recorders, Slow Speed Single Channel to 32 Channels**
• **HIGH SPEED TAPE DUPLICATORS for Full, Half and Two Track Stereo Duplication**
821 N. Highland Ave., Hollywood 38, Calif.

PROJECTION SCREENS
Professional, Seamless, Front & Rear Projection
Consulting service custom sizes for theatres, TV & MP studios, viewing rooms. Rigid rear projection for plotting and display. New "Porta-Pro" portable.
STEWART FILMSCREEN CORP.
Formerly Stewart-Trans-Lux Corp.
1161 W. Sepulveda, Torrance, Calif. 90503
Phone 326-1422 (213)

AURICON & K-100 CONVERSIONS
to 400 & 1200 ft.
Filter slot Auricons & Films
Transistor amplifiers, processors, etc.
Write for details
GORDON YODER
Professional Cine Products
4025 Maple Ave., Dallas, Texas 75219

experimental evidence, realistic thresholds of perceptibility in terms of the standard deviation of luminance in the display. Finally, the probable subjective rating, on a six-point scale, of the displayed granularity is deduced for the specific examples representing the four main processes mentioned earlier.

Considerations in color film production for color television, J. M. Warner, *Brit. Kinemat.*, 45: 157-164, No. 5, Nov. 1964.

Certain factors in color television film transmission and reception which have a direct bearing on the effectiveness of the reproduction of a color motion-picture film make it desirable (1) to limit the density range of the color print and (2) to include a "reference white" and "reference black" in the scene. The recommended maximum and minimum reflectances of fully illuminated materials which are to be reproduced with good detail are 60% for whites and 3% for blacks with existing film products and techniques.

For a fully lighted day interior scene, a lighting ratio of 2:1 is recommended. Higher ratios may be used for special effects and night scenes. It is emphasized that the most important, practical and effective way to control the density range of the color print is in the staging and photography, rather than in the final printing.—(Author's abstract.)

The electronic eye, H. A. McGhee, *Perspective (London)*, 6: 69-76, No. 2, 1964.

The nonentertainment uses of television (largely closed-circuit) are outlined. Television techniques are especially useful for teaching (where a cathode-ray tube display must be shown to a large group); in microscopy, where the illumination on the object must be kept low or where ultraviolet light must be used; for viewing weak x-ray images; for transmitting a radar picture to a ship from a land station; and for observing phenomena where radiation would present a hazard to a human observer. The chief problems are controlling the camera remotely and transmitting the signal without distortion.—F.H.P.

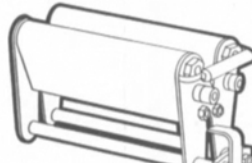
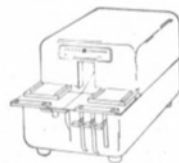
The exposure of the photographic layer in the recording of television images with a motion-picture camera with rapid film pulldown (in Russian), P. G. Tager, *Zh. Nauch. i Priklad. Fot. i Kinemat.*, 9: 368-378, Sept.-Oct. 1964.

A mathematical discussion is given of the exposure received by an element of a photographic layer in the case of the recording of a kinescope image by means of a camera with a pulldown time of the same order as the fly-back time of the kinescope.—S.C.G.

A flying-spot analyzer for slides (in French), R. Monteil, *Télévision*, 3-6, No. 140, 1964; *Ref. Zh., Fotokinotekh.*, Abstract No. 6.46.148, 1964.

In the near future amateurs will probably be able to use television transmitters in the 435-mc and higher bands. A flying-spot method of scanning will be useful in amateur transmissions. The scanning beam from a kinescope is projected from the rear of a slide and after passing through an optical system falls on a photomultiplier which transforms brightness changes into electrical signals. Distortions arising in

Gryphon Air Squeegee



PATENTED

F.O.B.
Burbank, Calif

70MM
\$150.00

35MM
\$100.00

16MM
\$100.00

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

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.

GRYPHON



CORPORATION

P.O. BOX 854 BURBANK

CALIFORNIA

PHONE 848-2411

**Re-recording
systems
compatible
to your
sync-pulsed
taped originals**

Send for literature

MAGNASYNC

CORPORATION

Subsidiary of Monogram Industries, Inc.

5547 Satsuma, No. Hollywood, Calif. 91601
(213) 877-1591 • Cable: "MAGNASYNC"

RECORDERS

synchronous magnetic film

DUBBERS

mixing, assembly, transfer

INTERLOCKS

electrical, mechanical

CONSOLETTES

desk-top studio mixing

ACCESSORIES

a wide variety



International leaders



since

1953

stock & custom