

Abstracts

Abstracts from other Journals, chosen for importance and timeliness, are published in the *Journal* from time to time. The greater number of these abstracts are translations, chiefly from the U.S.S.R., and made available by the Research Laboratories of Eastman Kodak Company.

The subject areas are grouped below

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

AERIAL PHOTOGRAPHY

A Study of the Distortion of Aerofilms (in Russian), V. Ya. Mikhailov, *Trudy Tsentral. Nauch.-Issled. Inst. Geod., Aeros'emki i Kartogr.*, No. 142, 97-122, 1961; *Referat. Zhur., Fiz.*, Abstract No. 2G224, 1962.

A study has been made of the distortion of aerial photographic materials used for accurate photogrammetric work and coated on different bases, nitrate or acetate. Drying off the base before coating significantly decreases the initial distortion, but during storage the distortion gradually increases, more for nitrate base than for acetate. The initial distortion of color and black-and-white films is approximately the same, but the growth of the distortion during storage is greater with the first than with the second. The introduction of certain substances into the last wash water lowers the distortion; glycerine (4 to 6%) and urea (2%) are better than others in this respect. For nitrate base a similar lowering is observed both for the initial distortion and for subsequent distortion, while for acetate base the influence on the distortion during storage is small, especially when urea is used. Increasing the humidity during storage decreases the distortion; a humidity of 70 to 80% can be recommended as the best. It was noticed that, contrary to results in the literature, the distortion was decreased by the introduction of alum into the fixing solution. On the basis of the results obtained, conditions are recommended for the storage of films to obtain the smallest distortion, and the substitution of acetate base for nitrate is also recommended.—S.C.G.

A Study of Developers for the Processing of Aerial Films for the Aerial Photography of Mountainous Landscapes (in Russian), M. N. Tsyganov, *Trudy Tsentral. Nauch.-Issled. Inst. Geod., Aeros'emki i Kartogr.*, No. 142, 123-136, 1961; *Referat. Zhur., Fiz.*, Abstract No. 2G222, 1962.

Peculiarities of the distribution of brightness in mountainous landscapes photographed from the air are the simultaneous presence of very bright (snow) detail and very dark detail (certain rock formations and forest masses). To obtain satisfactory reproduction of all details on the negative, especially in shadows, developers are necessary which differ from the Metol-hydroquinone developers generally used. The author has studied the development of Pankhrom Aerial film type 10-1000 in developers with para-aminophenol (Rodinal type) and amidol and has found that both are suitable for the purpose, giving an improvement in the processing of detail in the shadow and in the highlights without loss of resolution. Desensitizers for both these developers are tested.—S.C.G.

Apparatus for Automatic Stopping of an Aerial Camera Objective (in Russian), N. A. Belyaev, *Trudy Tsentral. Nauch.-Issled. Inst. Geod., Aeros'emki i Kartogr.*, No. 142, 51-68, 1961; *Referat. Zhur., Fiz.*, Abstract No. 2G256, 1962.

Aerial photographic tests on the aerial camera K-17B with a device for the automatic control of the aperture of the objective at heights of up to 300 m have shown that the apparatus is simple to operate, works reliably and generally ensures the automatic control of the objective aperture under different conditions of lighting encountered on summer and winter days. The average integrated density of the negatives was kept about the average normal value over different frames of film obtained with the automatic aperture control under different conditions of lighting and also in the presence of cumulus cloud. The density of negatives on separate frames deviated from the mean value of the film by about ± 0.05 , which is close to the expected accuracy of operation of the apparatus.—S.C.G.

Effect of Atmospheric Haze upon Aerial Color Photography N. I. Bogachkov, *Zhur. Nauch. i Priklad. Fot. Kinemat.*, 7(2): 112-120, 1962.

A formula is derived for calculating the effective gamma of a photographic negative when exposure is made through atmospheric haze. Exposure is made on a color film at first from a low altitude with an ideal aerial photographic camera without light scattering, where the atmospheric haze and scattering inside the aerial photographic camera can be neglected, and then from definite higher altitudes at definite atmospheric conditions, the effect of which on the effective gamma material must be estimated. The effective contrast of negative material depends considerably upon the altitude of exposure, the angle of sighting during perspective aerial exposure and the reflectance of aerial landscape.—C.A.B.

Rapid Shutters for Aerial Photography Based on the Use of "Exposure Fields" (in Russian), L. A. Malkin, *Izvest. Vyssh. Ucheb. Zavedeniñ Geod. i Aerofotos'emka*, No. 1,

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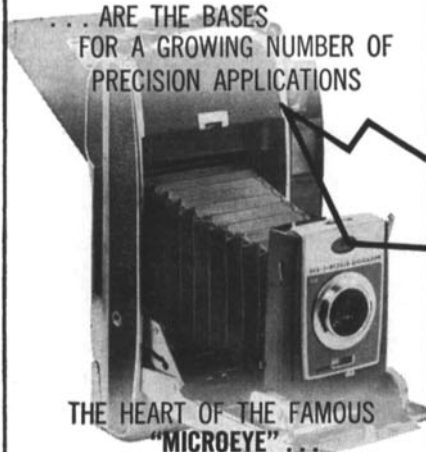
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73-86, 1961; *Referat. Zhur., Fiz.*, Abstract No. 2G255, 1962.

A description is given of the principles of operation and calculation of a shutter construction giving small exposures (1/200 to 1/1000 sec) based on the use of exposures which take place on the periodical meeting of sectors in two coaxial parallel discs rotating with different angular velocities in opposite directions.—S.C.G.

The Value of 70mm Air Cameras for Winter Air Photography, H. E. Seeley, *Pulp Paper Mag. Canada*, 63: No. 5, WR218, WR223-WR226, May 1962.

Preliminary experiments in large-scale aerial photography of forests with a 70mm camera have been conducted under winter conditions with considerable success. It has been demonstrated that visibility of forest detail (and tree measurements) reaches a maximum under winter conditions because of the absence of deciduous foliage and the illumination of shadowed areas by reflections from the snow. The photographic equipment included a Vinten 70mm camera equipped with 4-in. (100mm) and 12-in. (300 mm) lenses. Photographs were 2 1/4 in. by 2 1/8 in. on 70mm perforated film. The angles of view were 31° and 11°, respectively, or equivalent to those angles that would result if 16-in. and 48-in. lenses were used with the usual 9-in. by 9-in. format. Shutter speed was 1/1000 sec at 2 frames/sec, which was accomplished by utilizing an intervalometer control. A forward overlap of about 80% was obtained. Eastman Super XX film was used. Illustrations show contact prints at 200 ft/in. and enlargements at 50 ft/in.—L.E.M.

The Influence of the Conditions of Aerial Photography on the Deformation of Aerial Film (in Russian), V. D. Derviz, *Trudy Ientral. Nauch.-Issled. Inst. Geod., Aeos'emki i Kartogr.*, No. 142, 69-95, 1961; *Referat. Zhur., Fiz.*, Abstract No. 2G223.

A study has been made of the different deformations of aerial film: irreversible deformations arising during processing, reversible deformations connected with changes in the temperature and humidity of the air and elastic deformations due to the tension of the film in the cassette during exposure, all of which influence the results of the photogrammetric processing of aerofilms. On the basis of the results obtained the author formulates the requirements that must be satisfied by aerofilms in relation to the degree to which they are subjected to one deformation or another, and recommendations are given for the conditions of storage, exposure and processing of the films, measures to be taken to decrease the deformation and methods of controlling the latter.—S.C.G.

CAMERAS AND EQUIPMENT (Except High Speed)

Photoelectric Brightness Meter (in Russian), S. A. Drukker, *Svetotekhnika*, No. 7, 1-10, 1961; *Referat. Zhur., Fiz., G. Optika*, Abstract No. 5G240.

Manual equipment intended basically for measurement of the brightness of movie

screens is described. The angular field is 1.5°; the device shows no dependence on the distance of the measured object between 4 and 50 m. The detector is a bismuth-silver-cesium photocell F-6, corrected with OS6 and S3S10 filters. A direct-current amplifier is used with an electrometer lamp; the current amplification is 200 to 300 thousand. The limits of measurement of brightness are 64 and 191 nit. The relative error of measurement is 5% at the upper limit of the scale.—A.E.M.

Anamorphic Motion-Picture-Taking Systems and Attachments (in Russian), F. S. Novik and M. M. Shcheglov, *Tekh. Kino i Televideniya*, 6: 75-82, March 1962.

A number of non-Russian anamorphic systems and attachments have been studied by NIKFI. The different types are described and their performance is discussed. Preference is given to the Diascope system made by the French firm of Satec.—S.C.G.

A New National Standard on Motion-Picture-Taking Lenses for 16mm Films (in Russian), F. S. Novik and N. V. Khazova, *Tekh. Kino i Televideniya*, 6: 67-69, March 1962.

The Soviet Union has been paying increasing attention to 16mm cinematography. On the basis of a study of Soviet-produced and -imported lenses, a standard (GOST 9695-61 motion-picture-taking objectives for 16mm films) has been issued. It specifies a series of focal lengths, numerical values of geometrical and effective relative apertures and the dimensions of the screw thread on the lens mount. Technical requirements, method of testing and the marking of the lenses are also covered. The reasons for making the decisions embodied in the standard are discussed.—S.C.G.

COLOR PHOTOGRAPHY AND COLOR DEVELOPMENT

A Study of the Character of the Reproduction of a Color Film by a Three-Color Kinescope (in Japanese).
(See Television)

The Color-Separating Characteristics of Color Negative and Positive Films (in Russian), L. F. Artysushin and N. F. Semenova, *Tekh. Kino i Televideniya*, 6: 1-9, Feb. 1962.

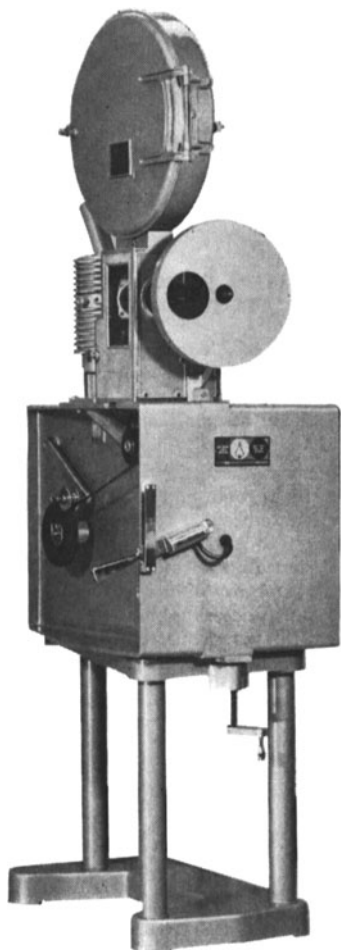
Color-separation testing allows a quantitative characterization to be made of the color-separating properties of the light-sensitive layer of color photographic materials when new sensitizers are introduced into them, and also makes it possible to evaluate the effect of the filter layer on color separation or the efficiency of the filter dye layer. Color-separation testing makes it possible to observe the diffusion of couplers or of sensitizers from one light-sensitive layer into another. The article gives the color-separation characteristics (1) for color-negative films with different sensitizations of the lower layer, (2) of samples with diffusion of sensitizer and coupler and (3) of positive films without filter and normal films with a filter layer.—S.C.G.

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The projector is a converted front shutter Simplex with a two pin intermittent. 16mm or 35/32 film runs at a speed of 144 ft. per minute while 35mm film runs at a speed of 165 ft. per minute.

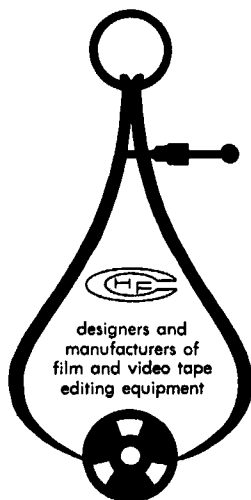
1. A variac controls the light intensity.
2. A 500 watt lamp is used for 16mm and a 1,000 watt for 35mm (a blower is used to cool the lamphouse).
3. A 2½ inch projection lens is furnished with each unit.
4. A start-stop lever controls the power to the lamp and motor.
5. The magazine and take up core takes up to 3,000 ft. of film.
6. Upper guide rollers are made to handle the film from either direction of the feed reel.
7. A free wheeling take off flange is provided in the magazine.
8. A lamp near the takeup reel permits hand inspection of the film prior to takeup.



NOUVEAU

Le projecteur contient un obturateur Simplex anterieur transformé avec deux clavettes intermittent. Les films de 16mm ou 35/32 tournent avec une vitesse de 144 pieds à la minute, tandis que les films de 35mm tournent avec une vitesse de 165 pieds à la minute.

1. Le regulateur de voltage d'intensité d'eclairage.
2. La lampe de 500 watt est nécessaire pour les films de 16mm, et de 1000 watt, pour les films de 35mm (un ventilateur est mise pour rafraichir la chambre de la lampe).
3. L'objectif de 2½ est installé.
4. La manette de mise en marche et d'arret controle en meme temps la lampe et le moteur.
5. La boite de films avec noyau peut contenir 3000 pieds du films.
6. La roue supérieure est construite de manière de recevoir le film dans les deux directions, nourrie par la bobine centrale.
7. Une roue est installée pour libérer rapidement le film de la boite.
8. La lampe se trouve pres de la bobine recepteuse, et donne toute facilité pour inspecter le film a main dans le projecteur.



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Questi proiettori sono Simplex trasformati, otturatore al fronte, meccanismo di scatto di due punte. La velocità di proiezione in 16 o 35/32mm è di 144 piedi per minuto, e in 35mm, di 165 piedi per minuto.

1. Controllo manuale della luminosità della lampada.
2. Lampada di 500 watt per 16mm e di 1000 watt per 35mm.
3. Obiettivo di proiezione di 2½".
4. Maniglia per controllo di motore e lampada di proiezione.
5. La cassetta porta pellicola può contenere 3000 piedi.
6. I rulli superiori di guida sono costruiti per operare con film proveniente di entrambi i lati della bobina svolgitrice.
7. Disco con montatura sporgente nel magazzino.
8. Una lampadina illumina la bobina avvolgitrice, permettendo l'ispezione manuale del film prima che si avvolga nel proiettore.

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Esta máquina es un proyector simplex convertido, obturador al frente y movimiento intermitente a doble grifa. Para 16mm o 35/32mm, la velocidad fija de proyección es de 144 pies por minuto, para 35mm es de 165 pies por minuto.

1. Un reostato controla la intensidad de la lampara de proyección.
2. Para 16mm se usa una lampara de 500 watt, y una de 1000 watt para 35mm (un chorro de aire ventila las lámparas en ambos casos).
3. Cada unidad está provista de un lente de proyección de 2 pulgadas y media.
4. Una palanca de control opera el motor y la lampara simultáneamente.
5. Capacidad de proyección: rollos de hasta 3000'.
6. Los rodillos de guía superiores operan con la película en ambas direcciones.
7. La tapa de la bobina de carga es desenroscable.
8. Una lámpara ubicada junto a la bobina de toma permite la inspección manual de la película antes que se rebobine en la bobina superior del proyector.

Speeding Up the First Development of Color Reversal Films with Nondiffusing Couplers (in Japanese), *Takagi Takusiro*, *Tech. Jl. Japan Broadcast. Corp.*, 13: No. 1, 57-60, 1961; *Referat. Zhur., Fiz.*, Abstract No. 2G237, 1962.

It is shown that the duration of the first development of reversal color films with nondiffusing couplers may be reduced to 3 min by using an amidol developer in a neutral medium at 30C. There is practically no change in the color quality of the image in doing this. The use of a fast-acting stop bath does not influence the color balance. In view of the high temperature of the developer, very careful handling of the film is necessary. The flash exposure is best carried out by means of fluorescent lamps, which give out less heat.—S.C.G.

FILM AND ITS PROPERTIES

Dimensional Standardization in Wide-Screen Cinematography (in Russian), S. D. Karipidi, *Tekh. Kino i Televideniya*, 6: 58-62, Feb. 1962.

An account is given of the work that has been carried out on the standardization of dimensions of the frame and soundtracks on 35mm film, and the difficulties still to be overcome are discussed.—S.C.G.

EFKA 17 and 20 Negative Films (in Serbo-Croat), V. Branis, *Kem. u Ind.*, 9: No. 9, F67-F69, 1960; *Referat. Zhur., Fiz.*, Abstract No. 12G401, 1961.

A review is given of the present state of production of the EFKA 17 and EFKA 20 motion-picture films made by the Fotokemika factory. Curves showing the characteristics of the materials and the kinetics of development are displayed.—S.C.G.

Information Approach to Evaluating Sensitivity in Photography and Television C. B. Gurevich, *Zhur. Nauch. Priklad. Fot. i Kinemat.*, 7: No. 2, 133-140, April 1962.

Is There a Future for Wide-Screen Cinematography with a Cropped Frame? (in Russian), L. G. Tarasenko, *Tekh. Kino i Televideniya*, 6: 23-32, Feb. 1962.

FILM PROCESSING (APPARATUS AND CHEMICALS)

Technology of Cleaning and Renovating Release Prints in Film-Renting Organizations (in Russian), I. Fridman and G. Kudryashov, *Kinomekhanik*, No. 11, 28-32, 1961. (No. 65.)

A general discussion of the subject is given. It is recommended that sodium salts of sulfonated fatty alcohols (washing powder "Novost") or detergents, that is, polyethyleneglycol esters, which do not affect the stability of image dyes in storage, be used for processing black-and-white and color multilayer prints. Only acid swelling agents of gelatin, especially 0.5% sulfuric

acid solution, can be used for processing dye-transfer color release prints. A mixture of acetone (90 to 80%) and amyl acetate (10 to 20%) is used for matting cellulose nitrate support. A mixture of 90% acetone and 10% ethyl alcohol is used for making the film glossy. A mixture of 90 to 80% acetone and 10 to 20% ethyl alcohol is used for matting and making safety supports glossy. Pure acetone can be used for matting diacetate support; triacetate needs methylene chloride and its mixture with ethyl or methyl alcohols.—C.A.B.

HIGH-SPEED PHOTOGRAPHY AND INSTRUMENTATION

A System Consisting of a Rotating Mirror and a Series of Lenses for High-Speed Motion-Picture Camera (in Russian), A. S. Dubovik and A. B. Granigg, *Zhur. Nauch. i Priklad. Fot. i Kinemat.*, 7: No. 1, 36-47, Feb. 1962.

Basic parameters and methods of calculating the components and the operation of high-speed motion-picture cameras built on the principle of a rotating mirror and a series of lenses are described. An equation is given relating the fundamental characteristics of the camera (such as frequency of exposure, speed of lenses, number of frames and resolving power) with design elements (such as scanning radius, size of frame and size and rpm of the rotating mirror) and with parameters of the process studied (such as scanning speed, temperature and other dimensions). A method is presented for calculating the parameters by using nomograms graphically interrelating the values determining the design of the camera, its characteristics and the parameters of the phenomena studied.—C.A.B.

A Drum Camera for the Vacuum Ultraviolet (in Russian), V. S. Vasil'evskii, N. V. Krasnov and V. S. Mukhovatov, *Priory i Tekh. Eksp.*, No. 2, 138-139, 1961; *Referat. Zhur., Fiz.*, Abstract No. 1G341, 1962.

A device is described for obtaining streak photographs of a plasma string of a spark discharge in the vacuum ultraviolet region. The discharge is projected by means of a diaphragm onto a photographic film fixed to a rotating drum placed in a vacuum camera (the working pressure in the camera was 1 to 2×10^{-6} mm mercury). Streak photographs have been made of a plasma string obtained with the toroidal device Tokamak-2. The diameter of the diaphragm aperture was 3 mm. The time scale on the film was $720 \mu\text{sec}/\text{cm}$. The temporal resolution was $810 \mu\text{sec}$; the spatial resolution (ratio of the diameter of the image of a radiating point located in the string to the size of the image of the string) was 0.1. After microphotometry of the densities, the distribution of the intensities could be obtained, cylindrical symmetry being assumed.—S.C.G.

The 70 KSK High-Speed Motion-Picture Camera (in Russian), I. E. Leites and G. A. Schmidt, *Tekh. Kino i Televideniya*, 6: 10-13, Feb. 1962.

A description is given of the construction of the 70 KSK motion-picture camera

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which is designed to take films on 70mm gage film at frame frequencies to 24 to 90/sec. The camera has been designed by the Moscow Constructional Bureau for Motion-Picture Apparatus in collaboration with NIKFI and the motion-picture studios.—S.C.G.

Studies on an Arc Light with a High-Speed Camera (in German), H. Krabiell, *Elektrowarme*, 19: No. 5, 183-184, 1961; *Referat. Zhur., Fiz.*, Abstract No. 12G439, 1961.

A motion-picture camera operating at 2000 frames/sec has been used to study the influence of movement of a dc arc in a melting furnace on the instantaneous value of the current and the voltage on the arc electrodes. Values of the latter were obtained by means of an oscillograph.—S.C.G.

HISTORY

Cinematographic Co-production, *Lettre de Paris, Revue de KodakPathé exportation*, No. 10.

It was not until recently that motion-picture films were produced by associates from several countries. Before World War II, American motion-picture production prevailed in European countries, as being the only one existing on an industrial scale. To cope with Hollywood, the American giant, there were only national motion-picture firms, whose ambitions were limited. During the war, the Italian and French governments issued laws for assistance to their motion-picture industries. One day, a French producer and an Italian producer pooled their film stars and practical and financial means, as well as their prospects: co-production was born.

Out of 167 motion-picture films produced in France in 1961, only 69 are French; the remaining 98 were made in co-production, 87 of them with Italy. Co-production increases production means and reduces exhibition risks. A few drawbacks are, of course, involved; for instance, dubbing is quite a problem. However, the advantages of co-production far outweigh the disadvantages. For example, only by co-production is it possible to make significant use of the more costly processes of color films. In 1961, five out of 69 French films were made in color, but 37 out of 98 films made in co-production were color films and 32 of them were made with Eastman color. French-Italian co-production became so efficient that it gave rise to a French-Italian company, Carlo Ponti-Georges de Beauregard, and the great production and distribution companies, Pathé, Gaumont, Cinedis, have close relations with the corresponding Italian companies.

Co-production with companies in Spain and Germany did not give satisfactory results, as the motion-picture business is quite national in such countries; efforts are directed toward making them associates rather than participants in the French-Italian companies.

French-Japanese, French-African, French-Austrian, French-Greek, French-Israeli, and French-Brazilian co-produced films have been made. Borderlines are

gradually disappearing. French-Italian and other European co-productions are only the first step. A few tentative steps have been taken toward co-production with Eastern countries. The American motion-picture business cannot remain apart from the present trend. Hollywood producers have their films made in Boulogne, Cinecitta and Madrid; the best specialists are from Hollywood and fashionable actors are provided by Europe.

PRINTING AND OPTICS

A New Method of Photographic Super-Enlargement for Motion-Picture Sets (in Russian), K. A. Fridovskaya and K. K. Pronskii, *Tekh. Kino i Televideniya*, 6: 69-72, Jan. 1962.

A simple automatic printing machine for the preparation of outsize enlargements for use in indoor sets in the Mosfil'm Studios is described. In order to avoid the need for a large printing area, the machine prints onto a moving band of photographic paper, the negative being moved in the opposite direction at the correct speed to compensate for the motion of the paper. A processing machine has been designed for use in conjunction with the printer.—S.C.G.

Tape Controls Full-Speed Printing of Color Movies, *Control Eng.*, 9: No. 7, 30, 32, July 1962.

A punched-tape-controlled motion-picture printer for printing color negatives

or positives corrects color imbalance in the original film by an additive technique instead of the usual subtractive technique with filters. In this printer, developed by Bell & Howell, white light is split prismatically into red, green and blue components (channels). The light of each channel is attenuated by means of a slit of variable width. Fifty different levels of exposure can be achieved on each channel, the level being automated by the servo-mechanism, which is activated from a punched tape. The original film is synchronized with the punched tape by either of two methods: (1) the film is edge notched at each scene change to be sensed by a roller, or (2) a 0.1-in. diameter aluminum patch is placed between scenes to be sensed by an fr probe. The color correction to be punched into the tape is determined by the eye and judgment of the editor. Printing speed of the printer is 180 ft/min. Other details of the mechanism and the operation are described.—L.E.M.

PROJECTION

A New Universal Motion-Picture Projector with a High-Power Light Source (in Russian), A. N. Bolokhovskii, T. V. Derbisher, G. L. Irskii and A. N. Karal'nik, *Tekh. Kino i Televideniya*, 6: 7-22, Jan. 1962.

A detailed description is given of the mechanical and electrical layout of the Soviet-made SKU-1 projector and of its light source. The projector is a universal

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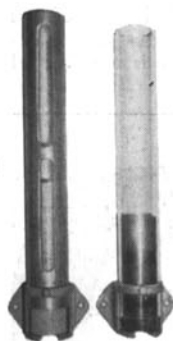
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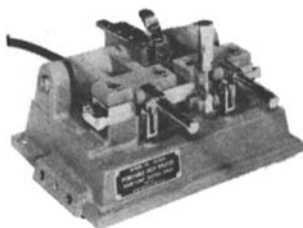
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Effect of the Form and Position of the Motion-Picture Screen on the Uniformity of Illuminance on Its Surface (in Russian), E. M. Goldovskiĭ and S. S. Ryshkov, *Zhur. Nauch. i Priklad. Foti. i Kinemat.*, 7: No. 1, 48–56, 1962. (No. 82).

A general discussion of the distribution of illuminance on flat and bent screens by taking into account the effect of vertical and horizontal angles of projection. Nine illustrations and over 40 equations are included in the text.—C.A.B.

Polycran and Laterna Magica (in Russian), F. Pilat, *Tekh. Kino i Televideniya*, 6: 32–37, Jan. 1962.

The forms of entertainment devised in Czechoslovakia under the names Polycran and Laterna Magica are described. In Polycran, films are projected simultaneously onto a number of screens of different shapes, sizes and orientations to the viewer. Laterna Magica uses films and live performances simultaneously.—S.C.G.

SOUND RECORDING AND REPRODUCTION

A New Method of Measuring Non-linear Distortion in Soundtracks (in Russian), V. V. Rakovskii and E. N. Genina, *Tekh. Kino i Televideniya*, 6: 38–50, Jan. 1962.

A new method is described for the measurement of nonlinear distortions in photographic and magnetic soundtracks in the production of motion-picture films which makes use of a testing signal in the form of a band of "white" noise with limiting frequencies of 3 to 12 cps.—S.C.G.

The Standardization of Some Forms of Acoustic Treatment of Cinema Auditoria of Simple Shape (in Russian), A. N. Kacherovich, *Tekh. Kino i Televideniya*, 6: 14–22, Feb. 1962.

TELEVISION

Perceptibility of the Coloration of the Grey Scale in Color Television (in Russian), N. G. Deryugin, *Elektrosvyaz*, No. 8, 26–34, 1961.

In three-color television, it is essential to know the tolerance as regards the difference between the values of k (amplification factor, and also of λ (of the transfer characteristic), in the three channels. The present article deals with the determination

of this tolerance. The usual method of visual observation of color distortion can lead to erroneous estimates and conclusions. To minimize such errors, the author proposes to use a grey scale on the color receiver screen. To reproduce this scale, it is necessary to have three equal signals at the outputs of the red, green and blue channels. Any variation in one of these signals causes a coloration of the grey scale, which the eye will perceive much easier than it perceives a color shift in the usual observation method.

A Study of the Character of the Reproduction of a Color Film by a Three-Color Kinescope (in Japanese), Genta Kidesaburo, K. Souiti, Oke Sigeru and Sakaguti Tomiya, *Research Repts. Fac. Technol., Chiba Univ.*, 11: No. 19, 1–19, 1960; *Referat. Zhur. Fiz.*, Abstract No. 2G239, 1962

A study has been made of the influence of the reproduction of standard color images (color wedges made from the dyes of a multilayer positive film), with different variations in carrying out the television transmission, on the quality of the color television image. It is shown that the harmful absorption of the dye of the positive film has a strong influence both on the gradient of the reproduction and also on the quality of the color reproduction. Some modifications are suggested in the technology of printing color positives and in the television equipment in order to decrease this effect.—S.C.G.

The French SECAM System of Color Television (in Russian), V. P. Shmakov, *Tekh. Kino i Televideniya*, 6: 64–66, Jan. 1962.

Color Stereotelevision (in Russian), P. V. Shmakov and V. Ye. Dzhakoniya, *Tekh. Kino i Televideniya*, No. 8, 30–40, 1960. EA V, 3/62.

The ways of solving the problem of color stereotelevision are discussed. A system of color stereotelevision can be created either by a mechanical coupling of any color television system or by designing an entirely new system based on the properties of binocular vision. Color TV signals of the stereo image can be produced by (1) a combined operation of two-color TV cameras; (2) a single three-tube camera with a special stereo adapter with, or without, an obturator; (3) two cameras of the sequential color TV system; and (4) a flying-spot camera with two alternately operating scanning tubes. The signal transmission of the stereopairs obtained can be accomplished by means of the following color stereotelevision systems: (1) simultaneous color and picture system occupying six channels; (2) simultaneous picture and sequential color system; (3) simultaneous color and sequential picture system; (4) sequential color and picture system; (5) two-color stereo system; and (6) binocular color mixing system. The principle of operation of the last system is based on the phenomenon of binocular color mixing.

Technical and Economic Factors in Television Program Storage (in Russian), V. G. Chernov and T. A. Syrnikov, *Tekh. Kino i Televideniya*, 5: 54–58, Nov. 1961.

A comparison is made of both the technical problems and economics of direct recording of television programs on film, recording of film from the kinescope image, and picture recording on magnetic tape.—S.C.G.

Telecine Production at Television Studios (in Russian), E. B. Galkin and O. P. Podlipskii, *Tekh. Kino i Televideniya*, 5: 30-34, Oct. 1961.

Production schemes for the production of films for television use, for single showing and repeated showing, are discussed. Flow sheets for the different scheme are provided.—S.C.G.

Frequency Modulation System for a Television Signal Recorder Using a Magnetic Tape (in Russian), V. F. Vorob'yav, *Tekh. Kino i Televideniya*, No. 12, 1-12, 1960. EA V, 3/62.

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Motion-Picture and TV Recording and Scientific Photography, I. K. Malskhov, Ye. N. Arkad'yeva, V. M. Lyubin, L. G. Paritskiy and S. M. Ryvkin, *Byulleten Izobreteniy*, No. 12, 21, 1961. EA V, 3/62.



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