ABSTRACTS OF PAPERS FROM OTHER JOURNALS

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Those requiring definitive and thorough searches of current literature and patents are referred to *Abstracts of Photographic Science & Engineering Literature (APSE)*, produced by the Graphic Arts Research Center, College of Graphic Arts and Photography, Rochester Institute of Technology, Rochester, NY 14623, with the editorial cooperation of the Society of Photographic Scientists & Engineers.

The subject areas are grouped below:

Photographic Theory and Materials
Sound
Television

PHOTOGRAPHIC THEORY AND MATERIALS

Some points in the preparation of 35mm originals for printing 8mm films (in Russian), I. P. Antonov. *Tekh, Kino i Televideniya, 15:* 70–71, May, 1971.

When 35mm films are shot with the intention of printing them onto 8mm film, a number of special features must be taken into account. These are discussed.—S.C.G.

The nature of stroboscopic flicker (in Russian), D. G. Lebedev, *Tekh. Kino i Televideniya, 15:* 19–22, Mar. 1971.

An analysis is made of the influence of certain main factors which are well known in practice on the onset of stroboscopic flicker: they are movement of the subject on the screen, the relative brightness of subject and background, the size of the subject, the viewer's point of attention, etc.—S.C.G. (Translated from *Tekh. Kino i Televideniya.*)

Apparatus for the measurement of the thickness of the magnetic layer in the coating of magnetic powders on motion-picture film (in Russian), V. S. Pedorenko, *Tekh. Kino i Televideniya, 15:* 73–78, Mar. 1971.

The measurement of the thickness of the magnetic soundtrack coatings is reviewed on the basis of the German literature on the subject.—S.C.G.

Review and analysis of electronic-optical (image-converting) systems of reading information from photographic films (in Russian), M. A. Kuz'minchev, A. M. Pryanitskin, A. A. Chastyukin and A. V. Shatokhin, *Priborȳ i Systemȳ Avtomatiki. Resp. Mezhved. Nauch.-Tekh. Sb.*, 67–75, No. 14, 1970; *Ref. Zh. Fotokinotekhnika*, Abstract No. 4.46.287, 1971.

A discussion is given of electronic-optical systems of reading information from photographic film used for the study of recognition algorithms, the modelling of different methods of image transmission, and the automatization of the laborious process of finding and measuring particle tracks in the processing of bubble chamber photographs. The requirements of these systems are formulated, and a classification of methods of inputting photographic image into a digital computer is suggested.—S.C.G. (Translated from *Ref. Zh., Fotokinotekhnika.*)

Apparatus for the recovery of films base (in Polish), *S. Szulc. Kinotekhnik, 24:* 19–20, No. 270, 1971; *Ref. Zh., Fotokinotekhnika*, Abstract No. 6.46.186, 1971.

A description is given of apparatus for the recovery of film base from 35mm and 70mm films by a method of coating with solvent. It consists of a winding device, a solvent coating unit, a drying cabinet and a rewind spool. The method is claimed to cause less damage to the surface than other methods.—S.C.G. (Abridged from *Ref. Zh., Fotokinotekhnika.*)

The drying of motion-picture films in cabinet-type developing machines (in Russian), V. M. Bondarchuk and A. Sh. Shamilova, *Tekh. Kino i Televideniya, 15:* 21–25, June 1971.

Results are given of working tests on drying equipment in which intensive drying of different motion-picture films is carried out by a convection method. Constructional details, principles of operation, and other technical features are presented.—S.C.G. (Translated from *Tekh. Kino i Televideniya.*)

The influence of the tension of triacetate support in the drying section of the casting machine on its properties (in Russian), N. K. Ivanov, M. T. Ishmetov and N. A. Grishin, *Tekh. Kino i Televideniya, 15:* 37, Mar. 1971.

Measurements are given showing the relation between the tension on triacetate support during drying after casting and its physical and mechanical properties.—S.C.G.

Changes in composition of a color developer during use (in Russian), G. P. Faer-

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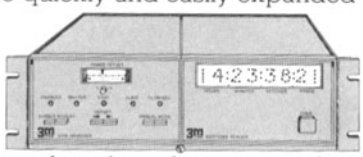

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man, L. K. Guseva and M. V. Yulegina, *Tekh. Kino i Televideniya, 15:* 32-33, Mar. 1971.

The color developer used in the processing of the Soviet TsP-8 multilayer color film has been analyzed during use, and changes in composition are recorded.—S.C.G.

The type of aging of x-ray films from production (in Russian), L. M. Bogdanov, M. K. Grechko and S. A. Donskaya, *Zh. Nauch. i Prikl. Fotogr. i Kinematogr. 16:* 293-295, No. 4, July/Aug. 1971.

Measurements have been made of the speed and fog density of a number of x-ray films made in the Shostka factory during the period 1966-69 and all kept under the same archive conditions: RH 65-70% and temperature 20°. It was found, rather unexpectedly, that all films, in spite of their different types and conditions of manufacture, showed the same type of aging, namely "normal" aging in Sheberstov's classification, i.e., a loss of speed with a rise in fog density. Possible reasons for this uniformity are discussed.—S.C.G.

SOUND

Miniature condenser and close talking microphones, Nippon Hoso Kyokai, *Asian Broadcasting Union, 17:* 20-22, Nov. 1971.

TV programs require, in most cases, microphones of small dimensions that will not obstruct the view of the performer. To fulfill this demand the NHK has developed a prototype model of a miniature unidirectional condenser microphone. This employs the dc bias system which provides a wide dynamic range, at a low bias voltage. It has also been designed to ensure sufficiently high sensitivity and signal-to-noise ratio.

On the acoustics of multitrack recording studios, Michael Rettinger, *Jour. Audio Eng. 19:* 651-655, Sept. 1971.

Acoustic isolation between band sections may be defined as the difference in the output level of two spatially separated microphones energized by a single source. The equations reveal that to achieve frequency independent isolation, it becomes necessary to provide more low than high-frequency absorption in the studio on account of the less directional radiation characteristic of the bass instruments.

Optimum parameters of an AM-FM signal for measuring fill-in distortions of photographic soundtracks (in Russian), N. N. Larionov, *Tekh. Kino i Televideniya, 15:* 12-15, Apr. 1971.

A signal modulated for both amplitude and frequency is used for testing the tendency of a variable-area photographic soundtrack to fill in, particularly at the higher frequencies. The best choice of characteristics for such a signal, and its use in measuring the distortions due to fill in are discussed.—S.C.G.

A universal design for an automatic unit for scoring motion-picture films (in Russian), A. F. Podlesnyi, *Tekh. Kino i Televideniya, 15:* 70-71, Mar. 1971.

The principles of a unit for several operations in the addition of an optical soundtrack to a motion-picture film are discussed.—S.C.G.

TELEVISION

A novel digital method of generating a circle test pattern for television, P. Lappalainen and L. Ojala, *Radio and Electronic Eng. 42:* 21-27, Jan. 1972.

Numerical computation of the coordinates of the circle points needed is based on simple incremental algorithms. The organization of the special-purpose computer is described. A major advantage over the analog methods commonly used is the accuracy and the stability of the pattern.

16mm film: image steadiness in television presentation, D. T. Wright, *Brit. Kinemat. Sound and TV, 53:* 360-365, Oct. 1971.

The relative positional errors between successive displayed pictures from film have in the past been assumed to have a Gaussian distribution and the subjective impairment due to this unsteadiness was assumed to be related to the long-term "peak-to-peak" displacement of the image. Where two or more sets of positional errors were involved, each set being normally distributed the overall effect was calculated by adding variances. Thus the standard deviation of the overall errors was obtained by taking the square root of the sum of the separate mean-square values, the latter having an assumed relationship to the "peak" values. Measurements of the overall steadiness of television film reproduction have shown that the error distribution is often not Gaussian. Since the frequency spectrum of the image displacement, regarded as a function of time, can vary considerably for different films, account must be taken of the relative subjective visibility of different frequency components in a disturbance. The subjective tests leading to this paper have established the relative visibility as a function of frequency. In addition a method has been devised for predicting, from a picture-by-picture measurement of positional errors, the subjective impairment which these errors will cause when the film is reproduced on television.

The quality of reproduction of films on color television (in Russian), I. V. Ruzanov and V. L. Mazurenko, *Tekh. Kino i Televideniya, 15:* 53-54, June 1971.

Factors affecting the quality of television showing of color films and possible ways of improving it are discussed.—S.C.G.

Telecine projection on a vidicon (in Russian), A. V. Vykhodets, *Tekh. Kino i Televideniya, 15:* 58-63, May, 1971.

An analysis is made of automatic systems for controlling the illumination of the photolayer of a vidicon and the level of the video signal at the output vidicon in the static mode. Recommendations are given

for using these devices in a television motion-picture channel.—S.C.G. (Translated from *Tekh. Kino i Televideniya.*)

New methods of recording and reproducing color television pictures (in Russian), N. I. Tel'nov, *Tekh. Kino i Televideniya, 15:* 74–84, May, 1971.

Recent developments outside the USSR in the recording and reproduction of television images are reviewed. (Bibliography of 22 items).—S.C.G.

Assessment of TV picture quality, C. R. Ainsworth and D. J. Bell, *Marconi Instrumentation, 13:* 2–7, Apr. 1971.

Test signals inserted into the field blanking interval of television signals are used for "on air" monitoring and testing of video channels. Frequent national and international interchange of live program material has led to widespread agreement on the requirements of video test signals, and a general specification for these has been laid down by the EBU. Test line Generator and inserter type TF 2913 has been designed to meet this specification. It consists of a complete system in one unit for the generation of such waveforms, and their insertion on to the correct lines of a television picture signal.

The television performance of the klystron amplifier, C. J. Edgcombe and C. N. O'Loughlin, *Radio and Electronic Eng., 41:* 405–415, Sept. 1971.

The paper describes the electrical behaviour of multicavity klystrons, now extensively used as high-power amplifiers in UHF television transmitters. The factors affecting the frequency response are reviewed, with descriptions of the particular conditions required for output coupling and cavity tuning. The response of the klystron to the television tests for nonlinearity is discussed in detail, and it is suggested that (a) differential phase shift is produced by the basic a.m.-p.m. characteristic of the tube; and (b) the discrepancy between observed results of line-rate linearity and differential gain tests is due to differing amplification of single and double sidebands, to be expected with any nonlinear transfer characteristic. This discrepancy can be removed by suitable signal processing in the transmitter.

A standard color monitor matching comparator, Ray E. Knight, *Radio and Electronic Eng., 41:* 330–336, July 1971.

This paper surveys the problem of matching color television monitors and the relative merits of optical or electronic aids. An optical design for assessing the normalizing white of a color monitor is then discussed at length, and comments are made in detail on the alternative solutions at each stage of the design. It is concluded that a Lummer-Brodhun matching field, together with a tungsten lamp and glass filter combination for the reference D_{65}, form an economical solution to the problem of a standard reference illuminant. Design flexibility allows the instrument to be used for other applications such as checking film review screens, and shadow mask tube phosphors.