

120th SMPTE Technical Conference and Equipment Exhibit

29 October–2 November 1978, Americana Hotel, New York City

Program Chairman **John Zeman**, under the supervision of the Editorial Vice-President K. Blair Benson, is enthusiastically working with his Associate Program Chairmen to put together an interesting and provocative program using the theme Imagery—Today/Tomorrow. A complete session on the Public Broadcasting Service's Satellite program has already been planned. The Associate Program Chairmen and their topics are listed below:

Edward J. Messina, ABC-TV, 67 West 66 St., New York, NY 10023, phone (212) LT 1-7777 x 7271, is the Associate Chairman for all film subjects.

C. Robert Fine, Fine Communications, 570 North St., Harrison, NY 10528, phone (914) 967-1317, will cover the following topics: Audio in Post Production; Stereo Sound in Video Broadcasting and Theatrical Applications; Production Techniques; Special

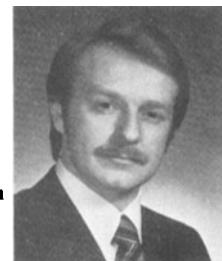
Effects in Film and Video; and Film to Tape and Tape to Film.

L. Merle Thomas, Public Broadcasting Service, 475 L'Enfant Plaza West SW, Washington, DC 20024, phone (202) 488-5000, is responsible for Electronic Editing; Video Processing; Film Laboratory Practices; and Status Reports on Standards and Satellites.

The Associate Chairmen will announce their Topic Chairmen during next month.

CALL FOR PAPERS

Those interested in presenting papers at the New York Conference are invited to submit their manuscripts for consideration. The procedure for submission of papers is as follows. Write to Program Chairman Zeman, or one of the Associate Chairmen at the addresses given above, or to the Conference Programs Secretary (Lynne Robinson) at SMPTE Headquarters, 862 Scarsdale



John R. Zeman
Program Chairman

Ave., Scarsdale, NY 10583; or call (914) 472-6606 for the necessary forms. The appropriate forms and information will be sent out immediately.

The required forms, plus a 500-700 word synopsis of each paper, are due at Headquarters by **1 June**. Before **14 August**, the original manuscript must be sent to Headquarters for evaluation by the Program Chairman and Associate Program Chairman. Authors will be notified in early September of how their papers fit into the program.

L. I. Zaets, *Tekh. Kino Televid.*, 8-12, Feb., 1977.

An investigation has been made into the sources of noise from certain Soviet-made motion-picture cameras, and some suggestions are made for their limitation. — S.C.G.

What a Professional 35mm Motion-Picture Camera Should Be Like (in Russian), E. I. Ivanov, *Tekh. Kino Televid.*, 34-35, March 1977.

Following earlier papers in the discussion, the author presents his suggested specifications for studio and handheld 35mm motion-picture cameras for professional use. — S.C.G.

A System of Coding Film Materials in Synchronized Shooting (in Russian), A. I. Potashnikov, V. L. Seredin and V. L. Trus'ko, *Tekh. Kino Televid.*, 8-13, April 1977.

The system described is intended for encoding frame numbers, take numbers, and other operational information and recording it on the film in the camera, the tape in a magnetic sound recorder, and the tape in a videorecorder, so as to facilitate replay, editing, etc. The circuit of a code pulse generator is described. The system is in use in the Slavutich cine and television complex. — S.C.G.

COMPUTER USE

Microelectronics and the Personal Computer, Alan C. Kay, *Scientific American*, 237: 230-244, Sept. 1977.

Rates of progress in microelectronics suggest that in about a decade many people will possess a notebook-size computer with the capacity of a large computer of today. Ability of the per-

Abstracts of Papers From Other Journals

Abstracts of papers appearing in other journals chosen for their importance and possible value to researchers, as well as those of timely interest, are published in the *Journal* from time to time. Many translations of abstracts from foreign journals, chiefly those of the USSR, are made available to the *Journal* by the Research Laboratories of the Eastman Kodak Company. As a rule, translations are made of the abstracts and not of the papers. The journals in which the papers appear can be consulted at some libraries. Current issues of *Tekhnika Kino i Televideniya* can be consulted at, or borrowed from, the Society's Headquarters Office.

The subject areas are grouped below:

Animation
Cameras
Computer Use
Film
High-Speed Photography and Instrumentation
Information Storage
Laboratory Practice
Optics
Photographic Theory and Materials
Projection
Sound
Television

ANIMATION

The Use of Computers in Making Animated Films (in Russian), M. S. Bezrodnýi, E. Sh.

Mamut and A. D. Gol'dfel'd, *Tekh. Kino Televid.*, 40-41, Jan, 1977.

Computer techniques, already in use outside the USSR, are being used with Soviet equipment. The main principles of the technique are discussed. — S.C.G.

CAMERAS

The Recording of TV Images on Motion-Picture Film Without Line Loss (in Russian), A. M. Melik-Stepanyan, O. P. Makarov, and A. K. Kulakov, *Tekh. Kino Televid.*, 43-47, Jan. 1977.

A motion-picture camera has been designed for photographing television tube images, in which a complete television frame is recorded at a time, with intermittent motion of the film. The camera has two film gates, each with its own film transport. While a frame is being recorded in one gate the film is being advanced in the other, there being a small take-up loop of film between them. Frames on the film are out of the normal sequence and cannot be used directly in ordinary projectors. Prints, however, can be made with the normal sequence. — S.C.G.

Construction Principles of Low-Noise Motion-Picture Cameras without Casing (in Russian),

sonal computer to simulate real or imagined phenomena may make it a new medium of communication.

FILM

The Advantages of Shooting Scientific and Educational Films on 16mm Film (in Russian), A. N. Kudryashov, *Tekh. Kino Televid.*, 3-7 Feb. 1977.

Changing patterns of the viewing of popular science and educational films in the USSR have meant that they are more often seen on small cinema screens and on television screens than in the past. It is therefore no longer necessary to make them on 35mm and 70mm film to achieve the required quality of large-screen images. The advantages of 16mm films for these purposes are discussed. — S.C.G.

An Experimental Study of the Winding of Motion-Picture Film with Constant and With Decreasing Tension (in Russian), E. F. Saranchuk, *Tekh. Kino Televid.*, 11-16, March 1977.

A study has been made of the winding of 35mm motion-picture film of different lengths with a constant winding tension and with a decreasing tension, the slippage of the winds of the film in the roll being recorded. A set of recommendations is given for the tensions to be observed in apparatus in which reels of 35mm film of different lengths are wound. — S.C.G.

HIGH-SPEED PHOTOGRAPHY AND INSTRUMENTATION

New High-Speed Cameras With Industrial Possibilities (in Russian), N. A. Dranovskii and N. M. Model', *Materialy Vsesoyuz. Nauch.-Tekh. Konf. "Sovrem. Prikl. Optika i Optich. Pribory,"* Ch. 1, Leningrad, 1975, p. 49.

An account is given of the design, based on the existing SFR camera, of the VFY-1 high-speed unit, capable of carrying out the high-speed stereo photography of rapidly occurring processes, cinematography, and also capable of use as a spectrochronograph and a cine-spectrograph. — S.C.G. (Translated from *Ref. Zh., Fotokinetekhnika*).

The SFR-US High-Speed Photographic Camera for the Ultraviolet Region of the Spectrum (in Russian), A. S. Dubovik, G. I. Belinskaya and T. I. Chernova, *Zh. Nauch. Prikl. Fotogr. Kinematogr.*, 21: 446-449, No. 6, 1976.

The existing Soviet SFR camera for operation in the visible region of the spectrum has been adapted for operation in the UV region. Technical data are given for the new model. — S.C.G.

The Role of Microelectronics in Instrumentation and Control, Bernard M. Oliver, *Scientific American*, 237: 180-190, Sept. 1977.

Microelectronics enables measuring instruments not only to make measurements but also to analyze them. It has also brought closer the fully automatic control of industrial processes and machinery.

Stabilization of the Field of View of Apparatus with an Optical Wedge and Rotating Lens (in Russian), V. Yu. Torochkov, V. B. Kalabin and A. V. Kononov, *Kinoapparatura. Inf.-tekh. Sb.*, 85-88 No. 8, 1975.

The kinematic design discussed has been realized in the form of an attachment for the sta-

bilization of the field of view of optical equipment, and in particular of high-speed cameras. As an example, the stabilization system designed for the IKSР motion-picture camera is discussed. — S.C.G. (Translated from *Ref. Zh., Fotokinetekhnika*.)

A Spark Light-Source With a Kerr Cell (in Russian), S. Yu. Chernyavskii, *Zh. Nauchn. Prikl. Fotogr. Kinematogr.*, 22: 104-116, No. 2, 1977.

A condenser spark light source with the spark discharge stabilized in space by means of a stream of argon has been modified for use with a small Kerr cell to give an exposure of ca. 0.5×10^{-7} s. — S.C.G.

A Wide-Gap Spark Camera with Mylar Walls (in Russian), I. Kh. Kosakov, M. P. Lorikyan, G. M. Morozova and K. K. Shikhlyarov, *Prib. Tekh. Eksperimenta*, 73-74, No. 4, 1976.

It is pointed out that wide-gap spark cameras with streak recording of information have received wide application in physical experiments. In such cameras it is usual to use glass a few millimeters thick. These cameras show a number of deficiencies, such as optical distortion, instability to temperature and atmospheric fluctuations, etc. A simple method is proposed for making wide-gap spark cameras with side walls of Mylar film. Since Mylar walls may have curved portions, a study has been made of the influence of the unevenness of Mylar film on image quality. Results of this study are given. Constructional details and the method of assembling the camera are described. — S.C.G. (Translated from *Ref. Zh., Fotokinetekhnika*.)

INFORMATION STORAGE

Optimal Codes for Digital Magnetic Recording, J. C. Mallinson and J. W. Miller, *Radio and Electronic Eng.*, 47: 172-176, April 1977.

Channel coding is universally employed in digital magnetic recording to match certain properties of the coded data to the characteristics of the recorder channel. In this paper, attention is focused primarily on the digital sum variation and dc content of various codes. The older, more familiar examples, such as NRZ, Manchester, enhanced-NRZ and Miller are compared with the more recently developed group, zero modulation and M^2 codes.

LABORATORY PRACTICE

Objective Testing of the Set Uniformity of 35mm and 16mm Test Prints (in Russian), A. E. Zinov'eva, M. I. Alimova and S. V. Budarina, *Tekh. Kino. Televid.*, 20: 26-28, Dec. 1976.

An investigation has been made of the variation of the density and contrast of the parts of the complete test print of a black-and-white film printed from a dupe negative. Comparisons have been made between test and reference prints. Recommendations are made concerning the photographic test material to be used and the permissible variation in density and contrast of test and production release prints, to ensure the desired uniformity of the set of parts comprising the film. Some differences in criteria are required for 35mm and 16mm prints. — S.C.G.

Electronic Editing of Video Records and Motion-Picture Films (in Russian), N. I. Tel'nov, *Tekh. Kino Televid.*, 66-76, Feb. 1977.

A review is given of non-Soviet equipment available for the cutting and editing of videotapes and photographic motion-picture films. — S.C.G.

Automation of the Technological Processes of Printing and Processing Motion-Picture Film Materials (in Russian), L. F. Artyushin and O. I. Ioshin, *Tekh. Kino Televid.*, 3-5, March 1977.

A description is given of the system of automation worked out by the NIKFI laboratories in collaboration with the Soviet film industry, for the printing and processing of motion-picture films. It is designed to introduce greater uniformity and optimization of exposure and development. It consists of seven sub-systems which are described separately. — S.C.G.

Optimization of the Exposure Conditions in the Printing of Intermediate Film Materials (in Russian), V. V. Kopytov, *Tekh. Kino Televid.*, 6-10, March 1977.

A computer method is described for the optimization of exposure conditions by a fully automated search for the printing conditions of intermediate positives and negatives. An algorithm has been worked out for carrying out the optimization on a minicomputer. It is recommended for Soviet establishments concerned with the automated production of intermediate positive and negative motion-picture films. — S.C.G.

OPTICS

Extending the Content and Expanding the Usefulness of the Simple Gaussian Lens Equations, L. T. Sachtleben, *RCA Review*, 37: 437-472, Dec. 1976.

The two classical, simple Gaussian lens equations relate four variables; this study extends them to three equations and adds a fifth, composite variable. The equations are stabilized and kept analytically manageable by adopting a purely optical sign convention proposed by Gardner. A table presents complete solutions of the three equations. Further usefulness of the equations is developed by applying them to the case of two separated lenses or systems in air or vacuum. Partial solutions are derived and a few representative two-lens applications are developed. General use of the solutions is simplified by a transformation. The extended equations are useful in planning new systems and in analyzing and further developing an existing or proposed system. Their use may precede or accompany considerations of both photometry and computer-programmed correction of correction of aberrations. They are not useful in the case of systems such as high-speed spherical condensers whose aberrations, although minimized or otherwise adjusted, will remain large and uncorrected.

PHOTOGRAPHIC THEORY AND MATERIALS

The Frequency-Energetic Characteristics of Thin-Film Thermomagnetic Recorders of the Stripe-Domain Type (in Russian), V. V. Nozdrin, I. A. Pan'shin and E. A. Podpal'ny (Moscow Institute of Railway Transport Engineers), *Zh. Nauchn. Prikl. Fotogr. Kinematogr.*, 22: 141-142, No. 2, 1977.

Since stripe-domain magnetic materials modulate the direction and not the intensity of light, the concept of contrast is not readily applicable to them, and the frequency-energetic

characteristic has been proposed to describe their behavior in the electronic decoding process. Frequency-contrast characteristics for different orientations of image structure, with reference to the stripe domains, are given. — S.C.G.

An Introduction to Polavision, Edwin H. Land, *Photographic Science and Engineering*, 21: 225-236, No. 5, Sept./Oct. 1977.

The first instant color movie system is described. It is based upon a new process for making a hyperfine additive color screen, an integral silver transfer film and an associated process which is essentially dry. The film is exposed, processed, viewed and rewound for re-viewing without being removed from its sealed cassette. The insertion of the cassette and the motion of the film within the cassette give all instructions to the player from start to rewind.

PROJECTION

Points in the Projection of Three-Dimensional Images Onto a Rear Projection Lenticular Screen (in Russian), A. M. Solovich, L. V. Akimkina and L. V. Dudareva, *Trudy Vsesoyuz. Nauch.-Issled. Kinofotoinst.*, 52-59, No. 82, 1976.

An analysis is made of the action of a rear projection lenticular screen when three-dimensional subjects are projected onto it, and of factors limiting the depth of sharpness of the image formed on the screen. Some mathematical relations have been obtained to determine the resolution of the image, and the problem of optimizing the properties of the lenticular screen and the projection system is discussed. — S.C.G.

(Translated from *Ref. Zh., Fotokinotekhnika.*)

SOUND

The Quality of Photographic Soundtracks on Film Prints (in Russian), V. A. Burgov, E. P. Gerasimova, G. M. Reznikov, M. S. Tkacheva, N. N. Usachev, N. A. Fridman and Z. V. Tsirulina, *Tekh. Kino Televid.*, 27-29, Jan. 1977.

Photographic soundtracks on motion-picture films printed in the Lenfilm Studios and the Leningrad Motion-Picture Printing Factory have much more linear distortion than the original magnetic tape recording. This is blamed on the deficient compensation in printing the soundtracks from the tapes. The distortion could be lowered by instituting more control in the printing stage. — S.C.G.

Progress in the Technology of Sound Recording for Motion-Pictures (in Russian), T. Yu. Rozinkina, *Tekh. Kino Televid.*, 14-22 April 1977.

A review is given of the progress of the technology of sound recording in the USSR since the 1950s. The technical specifications of the materials and apparatus in use over this period are tabulated. — S.C.G.

TELEVISION

Shooting Motion-Picture Frames with a Television Image (in Russian), N. L. Kul'chitskii, Yu. F. Malm'gin, and I. M. Ponomarev (Kiev Kino Studio), *Tekh. Kino Televid.*, 20: 13-19 Nov. 1976.

The use of television facilities and magnetic

video recording is becoming an important method of making combination frames and trick shots in feature films. These methods are less time-consuming, have wider possibilities, and are more economic with materials than conventional methods. Technical problems arising in practice are discussed. — S.C.G.

Evaluation of the Production of Video Films by Electronic Editing (in Russian), V. G. Makoveev, E. S. Uakin and K. O. Zagorovskii, *Tekh. Kino Televid.*, 3-7, April 1977.

Some features in the production of films and television programs recorded on videotape by electronic editing are discussed. Critical path analysis is shown to be readily applicable to the optimization of complicated editing work involving the use of several videotape units. — S.C.G.

Application of the High Resolution Return Beam Vidicon, Michael J. Cantella, *Optical Engineering*, 16: 257-261, No. 3, May/June 1977.

The Return Beam Vidicon (RBV) is a high performance electronic image sensor and electrical storage component. It can accept continuous or discrete exposures. Information can be read out with a single scan or with many repetitive scans for either signal processing or display. Resolution capability is 10,000 TVL/Height and at 100 lp/mm, performance matches or exceeds that of film, particularly with low contrast imagery. Electronic zoom can be effectively employed for image magnification. The high performance and flexibility of the RBV permit wide application in systems for reconnaissance, scan conversion, information storage and retrieval, and automatic inspection and test.

Between the unfolding of the history of America and the development of mass media in the U.S. there exist a parallel course and a mutual interaction that Prof. Gordon discusses with persuasive eloquence, well researched documentation and a broad approach to the diverse phenomena that shaped our destiny.

In the course of his volume, Prof. Gordon traces, from their beginnings to the present, the progress of American newspapers, magazines, movies, radio and television — an historic survey that covers the social, cultural, political and economic growth of our country from the colonial era to current times.

The organization of the book follows the chronological path of development of the mass media. After a rapid review of the evolution of the daily newspaper in other parts of the world (Great Britain, China, France), Prof. Gordon points out that freedom of the press was, if not an American invention, at least a firmly upheld tradition since the famous 1733 trial of Peter Zenger.

But the expansion of the true mass media was a distinctive contribution of our country — movies, radio and television achieving here a scope, a technology and an influence unparalleled abroad. The social consequences of their growth, their industrial and scientific effects on culture, their repercussion on politics, handled with the skill with which Prof. Gordon intertwines the various strands into a brilliant and engrossing historic tapestry, give a well deserved lasting value to a perceptive, informative and eminently readable volume. — *George L. George*, N.Y. Directors Council, Directors Guild of America, 685 West End Ave., New York, NY 10025.

Book Reviews

Current Developments in Copyright Law

(Two Volumes) Ed. Morteon David Goldberg. Published by the Practising Law Institute, 810 Seventh Ave., New York, NY 10019. Vol. I, 768 pp.; Vol. II, 712 pp. 5 × 8½ in. Price (two-volume set) \$20.

Volume I of the set gives the overall legislative history of the "new" copyright law, P.L. 94-533; Volume II contains the complete text of the law which became effective on 1 January 1978.

The many ramifications of the legislation affecting ownership of copyrights since the 1909 Federal Copyright Law, in effect with only minor amendments until 1978, make fascinating reading.

One of the most important aspects of the new law is the extension of the fair use doctrine to motion pictures, television and other audiovisual works. Fair Use has been the subject of bitter controversy over the years. Sections of the new Copyright Act dealing directly with this sensitive area include Sections 107, 108 and 110 dealing with limitations on exclusive rights, and section 504 — Remedies for Infringement, Statutory

Damages, Innocent Infringement. It should be noted that the new law has teeth in it. In addition to provisions regarding recovery of damages courts are empowered to order destruction of articles made or used in violation of the copyright owners rights including tapes, film negatives and other articles.

Detailed and clearly expressed explanations of how the new law affects motion pictures, audiovisual works and television are given in Volume I by Harry R. Olsson, Jr. (pp. 533-543) and Raymond D. Weisbond (pp. 545-556).

The two-volume set is a course handbook, one of some 150 published each year by the Practising Law Institute. The handbooks are intended to serve as educational supplements to each program. They may also be used by attorneys as reference manuals.

The Communications Revolution: A History of Mass Media in the United States

By George N. Gordon. Published (1977) by Hastings House Publishers, 10 E. 40 St., New York, NY 10016. 338 + viii pp. 6 × 9 in. Price (hardcover) \$14.95 (softcover) \$7.95.