Education, Industry News

Standards and Measurement of Magnetism was the subject of the initial lecture in a series of eight lectures on Magnetic Recording scheduled as part of the educational program of the SMPTE East Coast Committee for Education of Sound Technicians. The first lecture was given October 8 by John Frayne, Chairman of the Education Committee, who recently retired as Director of Research and Engineering for Westrex Corp. Subsequent lectures will be given by other recognized authorities in the field including L. W. Ferber, Senior Engineer, RCA Astro-Electronics Div.; C. J. LeBel, President, Audio Devices, Inc.; W. Earl Stewart, Chief Engineer, Standard Register Co.; Frank Comerci, Navy Material Laboratory; and Edward Schmidt, Vice-President, Reeves Soundcraft, Inc.

More than 100 films were shown at the International Film Festival held in Oxford, England, Sept 23–Oct. 2, under the auspices of the Scientific Film Assn., 3 Belgrave Square, S.W. 1, London. Subject matter of the films ranged over a wide area including cause and treatment of varicose veins, Einstein's Theory of Relativity, and psychological problems as shown by dreams. Representatives of documentary and scientific film organizations from more than 25 countries included psychologists, doctors, veterinary surgeons and chemists as well as directors and scriptwriters.

A new firm created jointly by Page Communications Engineers, Inc., a subsidiary of Northrop Corp., and Società Edison of Milan for European-American communications development has established offices at 45 Via Campania, Rome, and will be known as Edison-Page S.p.A. Head of the new office is Kurt G. Happe, Engineering and Technical Director. Charles A. Parry has been appointed Vice-President and U.S. representative. President and Chairman of the Board of Directors is Giorgio Valerio. Announced as the only firm of its kind in Europe unaffiliated with a communications manufacturer, the firm will purchase material and equipment on the world market and will undertake worldwide projects in communications development, making maximum use of local resources.

Plans for a multichannel, tropospheric-scatter, telephone, teletype and data communications network linking Great Britain, Spain and Morocco have been announced by Page Communications Engineers, Inc., a subsidiary of Northrop Corp. Design and construction of the network will be carried on under a $10 million Air Force contract.

Three motion pictures, two film strips and a record album have been produced by Bell Telephone Laboratories and made available without charge to colleges and universities for use in science and engineering courses. The motion pictures are: (1) *Crystals—An Introduction:* 16mm, color, sound, 25 min, designed as an introduction to crystallography for students of electrical engineering. (2) *Brattain on Semiconductor Physics:* 16mm, black-and-white, sound, 30 min, an introductory lecture on the physics of semiconductors by Walter H. Brattain, Nobel Laureate in Physics. (3) *Submarine Cable System Development:* 16mm, sound, color, 18 min, shows work of mechanical engineers in designing and developing underwater communication systems.

The two filmstrips are on the subjects of *Zone Melting* and *Formation of Ferromagnetic Domains*. The record album, *Science of Sound*, demonstrates 19 different acoustic phenomena.

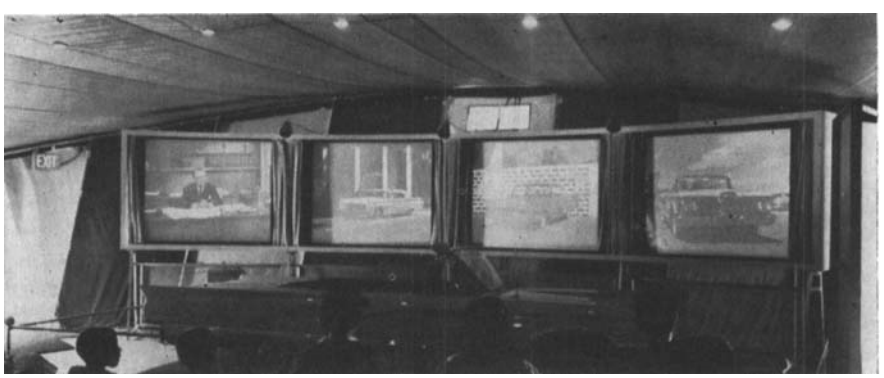
The motion pictures, filmstrips and record album are also available to professional groups through local Bell Telephone offices.

An article by Senator Hubert H. Humphrey in the July issue of *Film Media* stresses the importance of business-sponsored films in bringing about better understanding of America in foreign countries. He cited the Standard Oil-sponsored *Louisiana Story* as a "wonderful story of one part of America that every human being could understand." Admitting that "not every firm can afford to produce a *Louisiana Story* nor can every firm find a Robert Flaherty," he pointed out that many firms could afford to produce a comparable film and many more could afford a less expensive documentary. "Some of the gaps which seem to exist in the 'coverage' of American life might well be filled in part by the intelligent design and production of business-sponsored films," he said.

The UNESCO-sponsored agreement on the Importation of Educational, Scientific and Cultural Materials (commonly known as the Florence Agreement) has been signed by the United States, bringing to a total of 32 the participating countries, contingent upon Senate ratification. The agreement provides for duty-free exchange among participating countries of specific materials in the fields of education, science and culture in the categories of (1) books, publications and documents; (2) works of art and collectors items; (3) visual and auditory materials; (4) scientific instruments and apparatus; (5) articles for the blind; and (6) materials for public exhibitions.

Al Browdy has been appointed Director of Engineering and Industrial Relations for both radio and television for the NAFI Corp. He will represent KPTV, Channel 12, Portland, Ore. and KCOP, Channel 13, Los Angeles. On the Radio side he will supervise San Francisco's KOBY. He has been Chief Engineer for KCOP since 1956.

Seventeen elementary schools in Anaheim, Calif., are linked by closed-circuit television in a new educational program said to be the first of its kind. The courses are broadcast from a specially-designed building constructed by the school district. Covering an area of 9000 sq ft, the building contains four closed-circuit studios. Two channels are scheduled for operation during the present school year and two more are scheduled for operation in 1960. The initial program provides for six TV courses for fourth and fifth grades. The equipment, supplied by Hallamore Electronics Co., includes five television cameras, control monitor consoles for studio broadcasting, a remote-controlled lighting system, and audio arrangement and other associated components and 175 24-in. classroom TV receivers. The Pacific Telephone and Telegraph Co. is providing the outside distribution system to transmit the television signals from the central broadcasting studios to the 17 schools over 20 miles of coaxial cable. The project is partially financed by a grant of $30,972 under the National Defense Education Act and $25,000 from the Ford Foundation's Fund for the Advancement of Education.



A four-screen technique called Quadravision which involves synchronization of a film production on four projectors operating simultaneously has been developed by Ford Motor Co. for a 12-minute color motion-picture, *Search for Suburbia*, produced for showing in a tent theater designed for American Road Shows. The action can take place on all four screens simultaneously or moves from one screen to another. The 4½- by 6-ft screens are made of an embossed fabric designed to provide maximum brilliance. The projection equipment was constructed by Busch Film and Equipment Co., Saginaw, Mich. Each projector contains a continuous loop of film which eliminates the need for rewinding between performances. Mechanical linkage between projectors keeps them in synchronization to prevent overlap of action or sound between screens.

The base of the portable theater tent is an aluminum ring 40 ft in diameter. From the base, poles rise 9 ft to aluminum half-rings which span 50 ft at their widest point. The rings, poles and steel cables support the nylon and vinyl skin, which is coated with silver paint to insure a dark interior.

Mervin W. La Rue, Sr., of Mervin W. La Rue, Inc., is the recipient of an Award of Merit Plaque presented by the Producer Services Dept. of George W. Colburn, Inc., in recognition of over 40 years of high-quality service to the motion-picture industry, especially in the 16mm field. Mr. La Rue is nationally known for his work in the adaptation of film techniques to medical research. He has been an active member of the Society for 35 years and in 1954 was one of 26 honored at the Society's Pioneers Awards Session at Washington, D.C.

Data Services, Inc., Tarzana, Calif., a firm specializing in data reduction and computing services, has been acquired by Benson-Lehner Corp. Los Angeles. Dorothy O. Blaney, President of Data Services and founder of the firm, will act as technical consultant. Miss Blaney is a member of SMPTE. Diana C. Fortune will remain with the division in the capacity of general manager.

Morgan-Swain, Inc., is a new firm formed by the consolidation of the Florida firms of Dramatic Presentations, Inc., and Carey-Swain, Inc. The announcement stated that the new firm would extend its operations nationally, with headquarters at 1938 Laurel St., Sarasota, Fla. President of the new firm is Duncan J. Morgan.

Translated Abstracts From Foreign Journals

The *Journal* is scheduled to publish from time to time groups of abstracts such as these, chiefly from U.S.S.R., from the *Kodak Monthly Abstract Bulletin.*

CAMERAS AND EXPOSURES

Some Problems in a Rational Method of Control by Exposure Meters in Cinematography

The motion-picture cameraman must expose his shots so as to obtain densities within the accepted limits for obtaining good prints (minimum density, 0.05 to 0.3; maximum density, <1.4 to 1.5) with white flesh tones in the region of 0.8 to 1.0. The cameraman may also have his special requirements. Relations between object brightness and image brightness are worked out. The requirements for exposure meters for professional cinematographic use are discussed, together with the construction of exposure calculators. (S. C. G.)—A. N. Moskvin and V. G. Pell; *Tekh. Kino i Televideniya*, pp. 10–23, Mar. 1959.

The 16-SP Cine Camera

After making an investigation of the requirements of a 16mm cinematographic camera for professional use, with the collaboration of practically all the film and television studios in the Soviet Union, the Moscow Constructional Bureau for Cinematographic Apparatus has designed the 16-SP Camera to include as many of the desired features as possible. An experimental model, manufactured by the Moskinap factory, was tested by the Central Television Studios and the Central Studios for Documentary Films, and is approved for production. Three lenses are mounted in a specially designed turret, and objectives with a range of focal lengths from 10 to 75 mm will be available. Provision is made for taking speeds of 5, 16, 24, 32, 48, and 64 frames/sec. The viewfinder makes use of a mirror surface on the shutter, in conjunction with an optical system giving a 10 X magnification. The camera is designed to be held in the hand but can also be fixed to a stand. It is operated by a d-c motor. (S. C. G.)—E. L. Bychkov, *Tekh. Kino i Televideniya*, pp. 66–69, Apr. 1959.

COLOR PHOTOGRAPHY

"Duping" of Color Film With External Masking

In the system described for duplicating color motion-picture films, masks are prepared by exposing the color negative through color-masking filters onto black-and-white film, which is then developed to a fairly low contrast. The color negative is then combined with each negative, in turn, in a special printer, and printed on black-and-white stock through the appropriate printing filters to give masked color-separation positives. These positives are printed through selective filters onto multilayer color film to give the duplicate negative, from which positives are prepared as from the original negative. The choice of filters for the different stages, the sensitometric characteristics of the process, the choice of the black-and-white materials and their processing and printing conditions are discussed in detail. (S. C. G.)—L. F. Artyushin, T. M. Baĭkalova, N. S. Ovechkis, and N. F. Semenova, *Tekh. Kino i Televideniya, 3:* 7–16, Jan. 1958.

The Influence of Bleaching (Reducing) on the Quality of Soundtracks on Color Positive Film

Experiments on the effect of bleaching, during the processing of color positive film, on the quality of an optical soundtrack show that even a small degree of bleaching brings about a significant change in effective density of the soundtrack, but if the soundtrack is given a preliminary black-and-white development, little change is observed. Highest-quality soundtracks can only be obtained on color positive film which does not contain colloidal silver as a yellow-filter layer, the bleaching of which has an adverse effect on the soundtrack. In order to eliminate variations in the performance of different photoelectric cells, due to their different color responses, it is desirable to give the soundtrack a preliminary black-and-white development. (S. C. G.)—A. P. Strel'nikova and N. I. Kirillov, *Tekh. Kino i Televideniya*, pp. 46–51, Mar. 1959.

A Study of the Residual Substances in Processed Motion-Picture Film With the Aid of Marked Atoms

Residual thiosulfate and ferricyanide in color prints were measured by a radioactive indicator method and the minimal quantities of residual substances which could and which could not be washed out of the film materials were determined. (Translated from *Tekh. Kino i Televideniya*, S. C. G.)—I. M. Fridman, K. K. Zaborenko, and Ya. G. Nekhlin, *Trudy Vsesoyuz. Nauch.-Issled. Kinofotoinst.*, pp. 4–10, No. 3 (26), 1958.

Comparative Evaluation of the Quality of Photographic Images in Color

When the possibility of an objective evaluation of picture quality in color photography is considered, it is found that at least 21 parameters must be taken into account: Nine specify the sensitometric properties of the material; nine more the color separation; and not less than three are required to specify the complex of qualities going under the name of "sharpness." To connect these with visual estimates of picture quality in order to derive a means of measuring an "absolute picture quality" is not practical. A study has been made of the possibility of using fewer parameters: for this purpose, 100 exposures were made of a standard scene, with variation in the color balance produced by filtering; and, by viewing prints made from the color negatives, the latter were placed in three classes — printable, not-printable and doubtful — by four observers. At the same time, measurements were made of the "effective" densities of the three layers, defined as "the optical densities of a gray scale in the original, to which there correspond in the negative unit concentrations of dye per unit area." A three-dimensional plot of these quantities then allowed a region to be marked out enclosing the values of the effective densities for printable negatives. (S. C. G.)—L. F. Artyushin and N. D. Nyuberg, *Tekh. Kino i Televideniya*, pp. 11–19, Apr. 1959.

Soundtracks on Multilayer Color Motion-Picture Film

On color film, a soundtrack may be obtained which will be suitable for reproduction by different types of photocell, but only at the cost of greatly complicating the processing. Since about 80 to 90% of the sound projectors in use in the Soviet Union use antimony-cesium cells, it is recommended that a compromise solution be rejected, and that processing be aimed at producing the best soundtrack for this type of cell. For a high-quality soundtrack, the print should be processed with separate bleaching of the picture image. By lowering the soundtrack density, the level of nonlinear distortion may be reduced 2 to 3 times, with improvement in reproduction of the high frequencies. Prints for export, however, should be processed so as to be suitable for all types of photocell; for this purpose, the soundtracks should first be black-and-white ones, developed alone. (S. C. G.)—Z. V. Tsirulina, *Tekh. Kino i Televideniya*, pp. 19–21, May 1959.

HIGH-SPEED PHOTOGRAPHY

Slow-Motion Cinematography With Multiple Reflection

An optical system for ultra-high-speed cinematography achieves a rapid displacement of the image by multiple reflection of the light beam in the wedge-shaped gap formed by plane mirror surfaces, cut in two cones, mounted with parallel axes