10:45 A.M., TELEVISION EQUIPMENT

Optical Multiplexing in Television Film Equipment

A. H. LIND and B. F. MELCHIONNI, *Radio Corp. of America, Camden, N.J.*

The primary reason for multiplexing TV film cameras and TV film projectors is economy of equipment and/or space. A further reason can be the insurance of standby protection, at a nominal cost, when continuity of programming assumes a high order of importance. The optical multiplexer described in this paper can readily satisfy both requirements when integrated into a TV Film pickup system. Technical details of the design parameters and operating characteristics are discussed.

Inquiry Into Density Standards for Television Slides

R. H. HILL, *Williams and Hill Ltd., Toronto.*

Characteristics of the television system—automatic distortions and compensations, alignment of equipment and the video operator, conception of the perfect waveform are reviewed. The following subjects will be considered: density characteristics of slides giving most perfect wave when chain is aligned to SMPTE test film, mean and extreme densities, balanced distribution of tonal areas, density characteristics of slide producing unsatisfactory waveforms when chain is aligned to SMPTE test film, automatic distortions and its effect on general and specific levels, limitations of reproduction irrespective of further adjustment. Controls necessary for the production of TV slides to a consistent standard will be described.

A Remote Control Multi-Scene Switching Preset System

E. F. KOOK and F. M. WOLFF, *Century Lighting, Inc., New York.*

This paper describes a remote control multi-scene switching preset system for control of lighting circuits. The system incorporates both mechanical and electrical "memories". These permit a large number of circuit condition combinations to be "preset", then introduced simultaneously by depressing a single button. Combinations may also be added to one another, cancelled, or corrected as desired. The control console for a 100 circuit system is approximately the size of a standard office desk and requires only control current wiring.

FRIDAY AFTERNOON

2:00 P.M., TELEVISION AND SOUND SESSION

Television Studio Practices Relative to Kinescope Recording

HAROLD WRIGHT, *Canadian Broadcasting Corp., Toronto, Ontario, Canada.*

If television studio practices are controlled, using the transmission waveform as the guide, consistent kinescope recording quality may be maintained. The waveform approach must be one which takes into account both peak-to-peak voltage conditions and waveform area balance. Inclusion of reference black and white in all possible shots will ensure consistent picture voltages to the kinescope recorder and permit retention of mood when the recording is reproduced. Careful attention to tonal balance of shots will produce balanced waveform areas. This is essential to stable reproduction on receivers not equipped with d-c restoration.

The Conversion From Optical to Magnetic Sound in Television Systems

H. C. WOHLRAB, *Siemens & Halske A. G., Karlsruhe, Germany.*

The quality improvements of magnetic sound compared with optical being well known, the differences in handling and processing will be explained. Converting optical to magnetic sound raises problems in system, equipment and organization. Ways to resolve them in already working TV systems are proposed.

The Process of Magnetization in Magnetic Tapes

WALTER GUCKENBURG, *Institute of Technical Acoustics, Technical University, Berlin-Charlottenburg, Germany.*

Making visible the recording on magnetic tapes by causing the layer to swell or by spreading a ferromagnetic suspension over it and an additional magnetic influencing opens a way for a better knowledge of the process of magnetization in detail. The principal method and the way of working will be explained by showing several slides.

"Sprocketape" Recording System

C. E. BEACHELL, *National Film Board of Canada, Ottawa.*

A recording system employing perforated quarter inch tape is described and demonstrated. The recorder may be buttoned-on to or interlocked with a picture camera or used as a synchronous recorder for double system. Frequency range is 30 to 9000 cycles/sec $\pm$ 1 decibel. Flutter is less than 0.1%; speed, 36 ft./min. reversible. Weight of the recorder is 12½ lb. and may be carried in a brief case. Playback monitoring during recording and a silent turnover synchronizing system is provided. Recorder may be loaded with either 400 to 1200-ft. tapes mounted on cores. Techniques and equipment for editing quarter inch perforated tape are also described.

Set Temperatures With Heat Control Coatings

G. T. HOWARD, *General Electric Co., Cleveland, Ohio;* A. F. TURNER and H. H. SCHROEDER, *Bausch & Lomb Optical Co., Rochester, N. Y.*

FRIDAY EVENING 8:00 P.M., WIDE-SCREEN, PRE-RELEASE FEATURE

Board Meeting

During its third meeting for this year, which was held on July 28, at the Hotel Belmont Plaza in New York City, the Board of Governors reviewed current operations and made some important decisions for the future. Financial affairs were found in good enough condition to permit modest increases in second-half budget allocations for *Journal*, National Membership Committee and the national headquarters.

It was hoped that the 12% increase in budget for publication of *Journal* text pages during the second half of 1955 could be stretched to cover the use of color illustrations in places where color is essential to the understanding of technical articles. Publication of a one volume 40-year index to the *Journal* and *Transactions*, which date from 1916, the year of the Society's origin, has been variously considered during recent months. The Board felt that need for such an index had been clearly evident during recent years and asked that the Editorial Vice-President and the Editor proceed with current planning. Format and cost are to be considered.

A. G. Jensen, Engineering Vice-President, told the Board what had been accomplished by the delegates from ten nations who took part in the June meetings in Stockholm, of ISO Technical Committee 36 Cinematography. Mr. Jensen had served as Chairman of those proceedings and Boyce Nemec, SMPTE Executive Secretary, had been Secretary. Titles, numbers and disposition of all ISO-STOCKHOLM-1955 proposals on motion pictures will be published in the September issue of the *Journal*.

Recalling that the Society had at one time offered its members and others a Standards binder subscription service, which enjoyed only modest success, the Board asked that a new proposal for reinstituting a similar service, but on a changed basis, drafted by Henry Kogel, Staff Engineer, be considered in detail by Messrs. Jensen and Servies.

Arrangements for the forthcoming 78th Convention at The Lake Placid Club were reported by Byron Roudabush, Convention Vice-President, as nearing completion. He expressed the hope that attendance would be large and that a good many members would take their wives and children because special attention had created a program that would appeal to all. He said that the general schedule of events for the 79th Convention and Equipment Exhibit to be held next spring at the Hotel Statler, New York, was taking shape.

Because convention space at the more desirable locations is being obligated well into the future, it is necessary for the Convention Vice-President and the Board to fix on dates and meeting places as much as four years ahead. The commitments, through the 86th Convention, are as shown on the inside back cover of this *Journal*. Equipment exhibits are planned for the 79th, 82d and 86th Conventions.

For many years the Society has had Sections in New York, Hollywood and Chicago. There are now, in addition, four Subsections in San Francisco, Dallas, Atlanta and Western New York. It has become apparent that planning, financing and providing effective local programs for the members in these seven areas of motion-picture and television activity, is very difficult under the present organizational arrangement.

Both the incumbent and Past-Presidents of the Society have given attention to a number of suggestions for improving the organization made over many months by E. M. Stifle, Sections Coordinator, the President's advisor on section matters. Acting on Mr. Stifle's recommendations, the Board resolved to take steps necessary to create a new office of Sections Vice-President, make Sections out of the present Subsections provided they meet certain qualifications, and to grant representation on the Board of Governors, now limited to the New York, Chicago and Hollywood groups, to all Sections that reach adequate size and conduct a sufficient number of useful meetings each year. Details are presented elsewhere in this issue, along with the call for the Annual Meeting at which amendments to the Constitution and Bylaws will be discussed.

Membership has been increasing during recent months as a result of active work by the newly formed National Membership Committee under the Chairmanship of J. W. DuVall. During the first half of the year more than 600 new membership applications had been received and with the Committee likely to hit its stride early in the Fall, chances are good that 1955 will be the Society's best growth year.

Nominations for all 1955 awards were received and adopted. Presentation will be made during the Awards Session at the 78th Convention. Fellow Award certificates will be presented to D. Max Beard, Roger J. Beaudry, Charles C. Davis, Donald G. Fink, Robert M. Fraser, E. Dudley Goodale, George H. Gordon, G. Carleton Hunt, Henry N. Kozanowski, Kenneth M. Mason, J. L. Pettus, Byron Roudabush, Edward Schmidt, Robert E. Shelby, J. Paul Weiss, W. W. Wetzel and William T. Wintringham. All other recipients will be cited in a later *Journal*. – S. G.

SMPTE Joins Acoustical Standards Board

In June of this year, the American Standards Association announced the formation of an Acoustical Standards Board and issued an invitation to the SMPTE to become a member. The Society has accepted the invitation and appointed Axel G. Jensen, Engineering Vice-President, as the Society's representative and Henry J. Hood, past Engineering Vice-President, as his alternate.

The standardization work within the American Standards Association in the broad field of acoustics, vibration, mechanical shock and sound recording has for many years been handled by two committees, Z24 and Z57. However, the growth of these activities has made necessary consideration not only of coordination but of planning for projects already under way

and for future work. The Acoustical Standards Board has been created to supervise the work of the above-mentioned committees and to carry forward basic planning necessary for future operations.—*Henry Kogel*, Staff Engineer.

Education, Industry News

Credit Courses by Television is the Report of a Conference sponsored jointly by the Committee on Television of the American Council on Education, and Continuing Education Service, Michigan State College, East Lansing, Mich., Feb. 21–22, 1955. This nearly too literal transcript of the proceedings is in 6 × 9 in. format, 50 pp., paper covered, available at the price of $1.00 from the American Council on Education, 1785 Massachusetts Ave., N.W., Room 110, Washington 6, D.C.

Many of the hopes, not all of them desperate, for subscription education television are discoursed upon by those already experienced in this new field. The economics are those of small budgets and the returns come in many degrees — or rather, there are some who really pay and work for credit toward a degree, some who buy materials, and often a large number who are pleased habitually just to look and listen in for free. Reference to the Conference Outline at the front of the booklet and some patient skimming will reward the curious.

Origins of the Motion Picture is a 20-min film made by the U.S. Naval Photographic Center, Washington, D.C. to meet instructional needs of the Naval Photographic School at Pensacola, Fla. Jay E. Gordon, Naval Photographic Center, acted as writer, director and supervisor of production. He has told the story by means of still photographs, original artwork, stock motion-picture footage, some footage reproduced from paper film, and live photography. Chief sources of both information and equipment were the Library of Congress and the Smithsonian Institution, with help from the Edison Foundation and from Eastman House.

The film will be released in midsummer to Navy film libraries, and prints will be offered for sale through the U.S. Office of Education.

Obituary

Marcel George Person, Manager of the Westrex Company, Mexico, a subsidiary of Westrex Corp., died suddenly in Mexico City on June 2, at the age of 53.

He was a native of Chile. He completed his engineering studies at the Escuela de Artes y Oficios, Santiago, Chile, in 1920, and was associated with the Chilean State Railways for eight years and with Paramount Films in Chile for two years.

He joined the Westrex organization in Chile as an engineer in 1930 and he was made operating manager for Westrex in Chile in 1936, a position which he held until 1945 when he was appointed manager for Westrex in Cuba. Later that year he went to Venezuela as Westrex's manager. He became the Westrex Mexico manager seven years ago. He had been a member of the Society for the past ten years.

section reports

The Atlantic Coast Section monthly meeting was held on May 17 in the Moderne Room of the Belmont Plaza Hotel. Ralph M. Evans of the Color Technology Div., Eastman Kodak Co., presented his informative and interesting paper and demonstrations on "Color and Brightness in Projected Color Pictures." The technical program was attended by over 150 Society members and guests.

Prior to the formal program, there was a good turnout for the dinner get-together in the Belmont Plaza's Glass Hat. Response to these informal dinner sessions has been gratifying to the Section officers.—*V. M. Salter*, Section Manager, % E. I. du Pont de Nemours & Co., 248 W. 18 St., New York 11.

The Atlantic Coast Section had their sixth program meeting for the calendar year 1955 on June 28. This meeting consisted of an open house at the Kodak Processing Laboratory at Fair Lawn, N.J. In spite of warm summer weather, and the fact that the processing station is some distance outside

of New York City, a crowd which far exceeded the expectations appeared for this tour. Approximately 300 members and guests arrived for the conducted tour through the laboratory. About 60 members and guests took advantage of the chartered buses which had been arranged to provide transportation to Fair Lawn and return to New York City. This Kodak processing plant which handles only 35mm Kodachrome film was designed to allow room and facilities for other processes in the future. The plant was in operation during the visit of the Society, but one of the processing machines was in white light so that it could be examined along with the other equipment and operations of the plant.

Guides selected from the supervisory staff of the laboratory accompanied each group of about ten members or guests and explained the various operations and described the equipment concerned. An opportunity was provided to see everything from film receiving to shipping and from chemical mixing to chemical recovery. After the tour was completed, the processing laboratory provided refreshments in the plant cafeteria.

Based on the response to this meeting, as expressed to the section officers personally at the meeting and the write-ups on the pocket cards which were distributed, the conclusion is that tours of processing plants and other commercial facilities within the motion-picture and television industry have a wide appeal and are highly popular with our membership.— *George H. Gordon*, Secretary-Treasurer, c/o Eastman Kodak Co., 342 Madison Ave., New York 17.

The Pacific Coast Section met on May 24 at RKO-Pathe Studios in Hollywood.

An entertaining cartoon film supplied through the courtesy of Herbert Klynn of United Productions of America opened the meeting. The technical program consisted of three related papers pertaining to photographic definition, all of which had created a great deal of interest when presented at the recent Convention in Chicago. These papers were: "The Role of Resolving Power and Acutance in Photographic Definition" by G. C. Higgins and R. N. Wolfe; "The Effect on Definition of the Stage at Which Reduction Is Performed in Reduction-Printing Processes" by G. C. Higgins, R. L. Lamberts and R. A. Purdy; and "Depth of Field and Perspective Considerations in Wide-Screen Cinematography" by R. N. Wolfe and F. H. Perrin. The authors of these papers are at Eastman Kodak Co., Rochester, N.Y. Bob Hufford, Eastman Kodak Co., Hollywood, Arrangements Chairman for the Pacific Coast Section, coordinated the procurement of the accompanying slides and demonstration films which were also in demand for use at other SMPTE section meetings this month.

The Pacific Coast Section greatly appreciated the courtesy of the RKO-Pathe Studio management in providing a large sound stage and the associated screen and projection facilities for this meeting. John Aalberg, Director of Sound at RKO-Pathe Studios, very kindly handled all of the studio arrangements. Approximately 250 members and guests of the Society attended this meeting.—*E. W. Templin*, Secretary-Treasurer, % Westrex Corp., 6601 Romaine St., Hollywood 38.

The regular June technical session of the **Pacific Coast Section** was held at Twentieth Century-Fox Studios on the evening of Tuesday, June 21. About 140 persons attended, the number necessarily being limited on a pre-reservation basis to the accommodations that were available in the studio review room where the meeting was held.

Everett Baker, Head of Documentary Film Branch, Technical Information Department, Naval Ordnance Test Station, Pasadena, presented a very interesting color film prepared by his department covering the development of the 2.75-in. folding fin aircraft rocket known as Mighty Mouse. The film, *A Problem in Precision*, was prepared to show the importance of precision in the manufacture of the components used in this rocket, and was intended for showing to the workers and technicians having a part in its manufacture. Mr. Baker not only directed the production, but also played a very prominent part in the picture. He also presented David Bowen, who was responsible for all technical phases of the production.

John G. Frayne, President of the SMPTE, discussed the new Educational Program proposed by the Society. He emphasized the need for the industry to provide on-the-job training for those currently employed, as well as to provide for new highly trained personnel to meet the technological advances in the industry. He pointed out that although there had been a great influx of qualified engineers into the industry at the time of the introduction of sound, very little new talent has come into the industry within recent years. He stressed, therefore, the encouragement of training in qualified colleges and universities for those planning to make careers in the motion-picture industry. He also pointed out that technology advances within the next five years might even make the situation, as far as technical talent is concerned, more serious than it is at the present time. A brief report was was also given by Lorin Grignon, Chairman of the Subcommittee on Training of Sound Technicians. This Subcommittee is quite active in formulating a program in this direction.

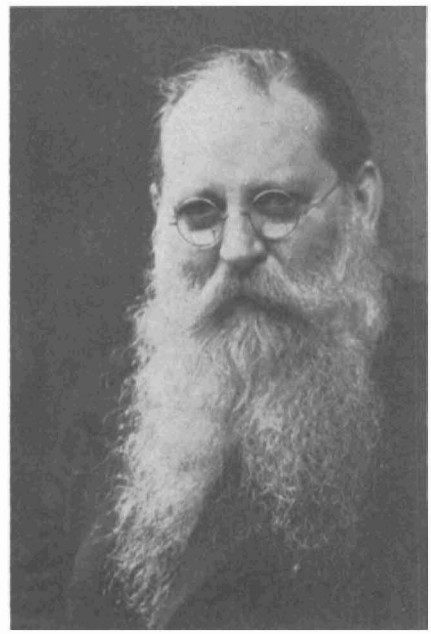
Sol Halprin, Executive-Director of Photography at Twentieth Century-Fox, discussed the new CinemaScope combination anamorphic series of lenses which are now available and being used on current Twentieth Century-Fox productions. Selections from several new productions made with these lenses were shown. The screening strikingly demonstrated the excellent definition and photographic quality which is obtained.

The Society greatly appreciated the courtesy of Twentieth Century-Fox, and in particular of Sidney Rogell, Executive Production Manager, for providing Darryl Zanuck's review room for this meeting.—*E. W. Templin*, Secretary-Treasurer, % Westrex Corp., 6601 Romaine St., Hollywood 38.

Louis Philippe Clerc, pioneer and leader in the photographic art, will celebrate his 80th birthday on August 20. His influence and work have dominated the whole field of photography in France for more than fifty years and have extended far beyond the borders of his native land. A popular, familiar figure at every International Congress of Photography since the meeting in Paris in July 1900, Mr. Clerc has labored intensively and unceasingly for the advancement of photography throughout the world. His contributions have been particularly outstanding in the fields of graphic arts, color photography, aerial photography, photographic chemistry and scientific applications of photography.

At 14 years of age, he was already an expert amateur photographer and he noted that documentation on photography in France was very poor. As a result of this observation, he spent part of his holidays every year studying foreign publications. As early as 1896 he began to contribute to various photographic journals in France and to publish summaries of foreign works. Among others he published French translations of the principal articles by Hurter and Driffield, the pioneers in sensitometry, who at that time were unknown in France.

As a teacher of chemistry and photography, Mr. Clerc has had a long and distinguished career. He taught analytical chemistry at the Paris University from 1898 to 1937. He founded in Paris in 1926 and directed for many years a Technical School

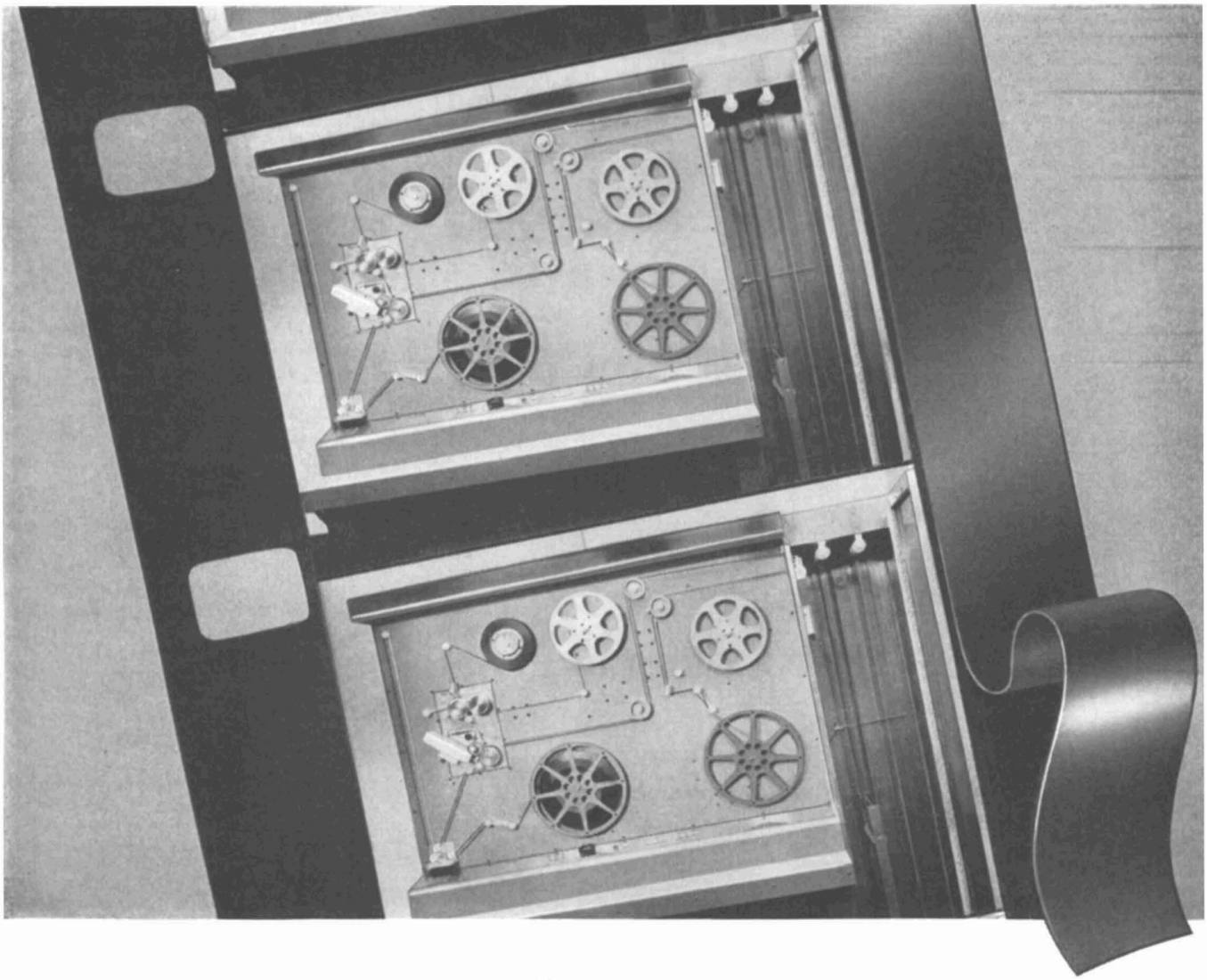


of Photography and Cinematography. He also taught physics and chemistry applied to the graphic arts at the Ecole Municipale Estienne in Paris. Finally he was asked to teach photographic photometry at the Paris Institute of Optics. He took an active part in the meeting of the International Congress of Photography in Paris in 1900 and has served for many years as the permanent secretary for France, 5th, 6th and 9th editing the proceedings of the International Congresses of Photography.

After a few months service in the infantry in the first World War, he was asked to direct one section of aerial photography. The results were reported in the 24th Traill Taylor Memorial Lecture of the Royal Photographic Society of Great Britain. (*Photo. J., 61:* 382, Nov. 1921). He discussed aerial photogrammetry, rectification of aerial photographs, and aerial stereoscopy. For his services in aerial photography during the war, 1914–1918, he was decorated with the Croix de guerre.

In 1921 he began publication in each issue of *Revue Française de Photographie* of a supplement entitled "Science et Industries Photographiques," which eventually became a separate journal. This publication has been edited for more than 30 years by Mr. Clerc, without a collaborator of any kind. This formidable task can be appreciated somewhat when it is realized that the work requires an ability to translate several languages and a sound knowledge of many fields of photographic science.

A few of the important positions held by him besides his editorship of *Science et Industries Photographiques*, 1921 to date, are as follows: Co-director of the magazine *La Photographie*, 1896–1901; Secretary to the editorial staff, *La Photographie Française*, 1901–1904; Editor-in-chief, *Les Procédés Photomécaniques* since 1901; Editor-in-chief, *Revue des Sciences Photographiques* from 1914 to date; Collaborator for: *Grand Encyclopédie; Dictionnaire de Chimie* by Wurtz (2nd Suppl.); *Dictionnaire Larousse; Journal de Physique; Bulletin de la Société Française de Photographie et Cinématographie; Photographic Journal* (RPS-London); *Camera Obscura* (Amsterdam); etc.



New "dry-process" magnetic sound track gives better sound-on-film recordings

Now 16 mm movie films can be sound-tracked faster, easier and with greater precision than ever before. New laminating machine automatically applies strip of dry magnetic tape to the film. Machine simultaneously removes special backing from tape leaving *super-smooth* surface. No liquids, toxic solvents or drying time needed.

The surface of the track is microscopically *smooth* and *flat* . . . no beads or high edges. This means the magnetic head on the projector contacts the track almost perfectly giving more output at high frequencies. Since the magnetic laminate is precision coated at 3M to the same high standards now used in all "SCOTCH" Brand Magnetic Tapes, absolute uniformity of output is assured, reel to reel and coast to coast. Exclusive "High Output" magnetic oxide gives 6 to 12 db more output with no increase in noise or distortion! Increase in output overcomes hum caused by the close proximity of the drive motor and power transformer of magnetic projectors.

Get the facts from one of the processors listed below, *or write 3M Company, Dept. IR-85 for full details.*

ANSCO	BAY STATE FILM LAB.	THE CALVIN CO.	CAPITAL FILM LAB.	COLOR REPRODUCTIONS CO.
2299 Baux Hall Rd.	35 Springfield St.	1105 Truman Road	1905 Fairview Ave. N.E.	7936 Santa Monica Blvd.
Union, N.J.	*Agawam, Mass.*	*Kansas City, Mo.*	*Washington, D.C.*	*Hollywood, Calif.*

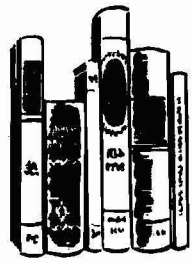
REG. U.S. PAT. OFF.

SCOTCH BRAND Magnetic Tapes

The term "SCOTCH" and the plaid design are registered trademarks for Magnetic Tape made in U.S.A. by MINNESOTA MINING AND MFG. CO., St. Paul 6, Minn. Export Sales Office: 99 Park Ave., New York 16, N.Y.

In the past fifty years Mr. Clerc has written no less than twenty books on several different fields of photography. Some of these books have been translated into several languages. He is probably best known for his authoritative work, *La Technique Photographique*, first published in two volumes in 1926 and since appearing in five other editions, three of which were translated into English in 1930, 1937 and 1954. He has published extensively in many photographic magazines over a long period of years.

It has been the privilege of very few men to have contributed so effectively and lastingly in as many fields of photographic science during their lifetime as has Louis Philippe Clerc. In so doing, he has honored his country and he continues to labor faithfully for the advancement of photography throughout the world.—*Glenn E. Matthews (adapted from PSA Journal, p. 581, Oct. 1952).*



books reviewed

TV Stations

By Walter L. Duschinsky. Published (1954) as part of the Progressive Architecture Library by the Reinhold Publishing Co., 430 Park Ave., New York 22. 136 pp., incl. 5 appendices, bibliography, glossary of TV terms and index. Numerous illus. 9 × 12 in., Price $12.00.

The author has been responsible for the basic planning and layout of the broadcasting and telecasting facilities for the United Nations' Building in New York and he has been associated with several architectural firms as well as a management consultant firm.

This book is intended to serve as reference material for architects, engineers, TV station managers and program production men. It contains a great deal of information which will be of interest to persons who are inexperienced in TV broadcasting or to students who are studying it.

The material is well organized and indexed and is presented in three parts.

Part 1 devotes 35 pp. to the "Master Plan" for a TV station and a method of making an analysis of a future station's requirements. It does not purport to explain how a neophyte should accomplish this complex task, but it does make a strong point that professional advice is desirable during the initial planning stages. It advocates a number of surveys and studies covering such factors as audience potential, revenue expected, time factors, transmitter site selection, and operating expense. It also describes space utilization and traffic flow in studio buildings and relationships between various TV departments.

An organization chart is shown for a very large TV station or a network operation. This chart will be awesome to the prospective small market TV station owner, but it serves a purpose in describing a complex organization.

A brief description is given to TV technical equipment and its usage and this section is illustrated with typical photographs taken in TV stations.

The Summary of this section contains a number of helpful suggestions for reducing costs of operation by improved planning. It also reviews a number of factors of UHF propagation.

Part II deals with general information relating to personnel functions and job descriptions, factors affecting employees' morale, market surveys, TV site and facilities, antenna towers, TV coverage, programming, audience ratings, and network affiliation and its advantages.

It also deals briefly with film facilities, and production requirements for live talent programs, the advantages of various control-room arrangements, and requirements for large live talent studios.

Studio lighting considerations are given only very brief mention, as are acoustical treatment, sound isolation and the reduction of noise in ventilating systems. This is unfortunate in this reviewer's opinion, since it has been his experience that architects and their engineers as a whole are not well informed on these subjects.

One of the best parts of this section of the book deals with the factors relating to UHF vs. VHF competition in the same market. The author's statements have been proven by the experiences of UHF failures in mixed TV markets.

Appendix 1 is a typical example of "Master Plan" study for a new UHF station. It will be helpful reading for

persons who contemplate being involved in a competitive FCC hearing. It also presents the UHF vs. VHF factors in a clear and concise manner.

Appendix 2 is principally excerpts from the NARTB film manual, and it provides conclusions which are based upon operating stations' data. Appendix 3 relates to transmitter and antenna combinations for various effective radiated power. Appendix 4 is brief mention of color TV requirements. This is excusable since the book was written prior to when color TV equipment was available. Appendix 5 is a union directory. A short bibliography and a glossary of terms used in television complete the book.

The author of this book has attempted to cover a tremendous field within 136 pp. and he has done the job creditably. The book will be valuable to anyone embarking on a career in television broadcasting or its related fields. It fills a need for a management guide in TV station planning and it will be useful for an architect's reference file.—*R. A. Isberg*, Consulting TV Engineer, 2001 Barbara Dr., Palo Alto, Calif.

Proceedings of the National Electronics Conference—Vol. 10

Published (1955) by National Electronics Conference, 84 E. Randolph St., Chicago, Ill. 808 pp. incl. numerous charts, diagrams and tables, + 24 pp. cumulative index, + 20 pp. subject and author index. 6 × 9 in. Price $5.00

The National Electronics Conference has been held annually since 1944 with the exception of one break in 1945. Volume 10 of the Conference Proceedings records the complete texts of all papers, technical and otherwise, given at the 1954 conference. This special anniversary volume contains a complete index by authors and subjects of all prior Proceedings, and several commemorative papers relating the historical background of the Conference.

In addition to the historical papers, and certain specialized papers relating to management, there are 82 technical papers covering the gamut from antennas to television. The major emphasis is on military applications, with 25 of the papers directly sponsored by military contracts or establishments. The treatment is generally at a highly theoretical level — ten of the papers were sponsored by colleges and universities; seven others are parts of Ph.D. theses.

Only three of the papers are devoted specifically to television. The topics covered are "Home Design Considerations for Triode System of TV Picture Tube Guns," "A Linear Color Television Receiver" and "Cathode Ray Tube Deflection System Using Transistors." The last is of some specialized interest because the advantages and limitations of transitors are described, when used in this application. A number of the other papers provide information which could be useful to the television engineer. Among these might be noted several papers, on the use of Stripline components as microwave transmission elements, one on "Modulation Wideband Splatter of VHF and UHF Transmitters," and one on an "Electronic Filter for Very High Voltage D-C Power Supplies". (This last describes an interesting circuit for reducing the amount of capacity necessary to obtain a specific ripple factor, resulting in an overall cost and volume saving.)

The heterogeneous nature of the material in this volume makes it impossible to do justice to any specific subject in the course of a brief review, or even to list all subject categories. This book is neither a complete general reference text, nor an exhaustively complete treatment of any one topic. Still in combination with the previous volumes of the series, it makes an excellent source of current information on a host of subjects. The typography is good, and the illustrations are clear and well placed relative to the text. Variations in notation and terminology are surprisingly few, considering the large number of authors involved.—*Sol Sherr*, General Precision Laboratory Inc., Pleasantville, N.Y.

Graphics in Engineering and Science

By A. S. Levens. Published (1954) John Wiley and Sons, 440 Fourth Ave., New York 16. 696 pp. 817 illus. 6½ × 9½ in. Price $7.00

This text book, intended for use of engineering and science students in college, could also serve as a reference book in post-college years. It deals with the graphical presentation of ideas, objects and problems in many branches of science, both applied and theoretical.

Part I presents the principles and applications of graphical projection. Although titled "Orthogonal," it covers oblique and perspective projection, as well as the various forms of what is more commonly called orthographic projection. Multiplanar projection, the standard method used on engineering drawings, is analyzed and extensively illustrated. Special applications such as developments, intersections, angle problems, and the so-called pictorial types, isometric, dimetric and trimetric are treated in separate chapters.

Part 2, on "Technical Drawing Practice," contains conventional chapters on sectional views, threads and fasteners, gears, cams and dimensioning practices. There is, in addition, some material not found in older manuals. The extensive work done in the field of lock-nuts and lock-washers is partially illustrated and discussed. Also, a little more than the usual emphasis is placed on the necessity for correct dimensioning and tolerancing of drawings, a very weak link in the training of most engineers and draftsmen. The precepts of this section however are not well followed in other parts of the book. The gear drawings, for example, do not control the accuracy of the gears by showing proper tolerances. Much of the material on gears, cams and locking devices could be left out, since it is more properly a part of books on machine elements. It is somewhat inconsistent to include design data on gears and cams but not on bearings, linkages, pulleys and so on.

Part 3, "Graphical Solutions and Computations," is unique. Although some of the material can be found even in the old classic, French's *Engineering Drawing*, it is unusual to find so much space allotted to the application of graphics in mathematical, engineering, and even anatomical problems. The author aptly points out that some problems may be solved with sufficient accuracy for design purposes and much more quickly than by analytical methods. In fact, the analytical solution of some problems, such as determining the amount of involute interference in a defective gear mesh, would be so involved as to be completely impractical.

The book as a whole tends to be somewhat bulky. Although it is not represented as a text for the professional draftsman, it contains almost everything that may be found in standard text books on drafting, even to the usual lengthy appendix. In fact, the 166 pp. of appendixes in this book might even be a record. The inclusion of so much conventional drafting material apparently evolves from the author's admission that even an engineer should have "a reasonable proficiency" in the use of drafting instruments. His haste to add the thought that greater emphasis should be placed on the development of freehand sketching reminds the writer of the advice recently given the freshman class at an Eastern engineering college to avoid drafting jobs lest they be "stuck on the board." The "board" is apparently becoming the sign of a lower caste, and not the indispensiable tool of the design engineer. In spite of Professor Levens' plea for more extensive use of graphics in engineering and science, he gives the impression that he also believes that although the engineer should be able to "talk with a pencil" he should do most of his thinking with a slide rule.

In spite of the book's size, there are two noteworthy omissions, rather surprising considering the broad scope of the title. First, no mention is made of the extensive use of graphical symbols in electronic or structural engineering nor is any space given to the drafting techniques of the drawings peculiar to these fields. Secondly, there is no explanation of the function or technique of the design layout, which is the basis for any set of manufacturing drawings. From the author's remarks on freehand sketching, and the exercises under dimensioning practice, the engineer's job appears to be that of supplying fully dimensioned pictorial sketches to the draftsman for redrafting into multiview orthographic form. The interesting graphical process by which the shape, size and number of parts are developed by the designer or design engineer in the layout is not treated. On Professor Levens' side, however, it should be noted that most texts on engineering drawing, for some unknown reason, also omit any discussion of the design layout.—*John C. Duffy*, General Precision Laboratory Inc., Pleasantville, N.Y.

Film Manual 1955

Published (1955) by National Association of Radio and Television Broadcasters, 1771 N St., N.W., Washington, D.C. 36 pp. 8½ × 11 in. Paper covered. Available to those not eligible for NARTB membership at $1 a copy.

Film Manual 1955 is the second of the annual studies published by the National Association of Radio and Television Broadcasters on film use in television stations. The expressed aim of these Manuals is to pass on to all stations, both new and old, those procedural patterns which have been developed by experience in the field of station film operations; they represent a highly practical guide for station management.

The first part of the present Manual gives comparative data collected from over 100 stations on film programming hours and costs. It is noteworthy that this survey supports last year's findings as to the importance of film programming as an integral part of all local programming — the report indicates 29 hr and 24 min of local film programming as compared with 18 hr and 26 min of local live programming.

In the second part five film department case histories are presented, providing information on film policies and procedures developed by specific local stations in various geographic areas. Emphasis is on television film operations in the relatively smaller markets. Each case history covers film purchasing, personnel, film equipment, film facilities, operational procedure and programming, specifications and engineering.

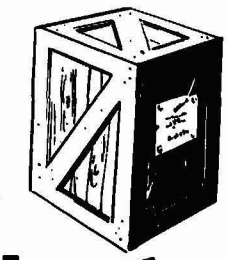
The last section of the Manual consists of a feature article on "Television Operation Procedures" supplied through this Society, at the request of NARTB, by SMPTE member Louis J. Climent.

Closed Circuit Data Book

By Leonard Spinrad. Published (1955) by Leonard Spinrad, 511 E. 20 St., New York 10. 72 pp. 8½ × 11 in. Paper covered. Price $10.00.

A growing industry which now has behind it well over 200 closed-circuit telecasts is the basis for the data in Mr. Spinrad's compilation which includes listing of the personnel of every active closed-circuit production company, details of all available closed-circuit projection equipment and a full directory covering this TV medium such as rates, available cities for both black-and-white and color, labor unions and descriptions of the various types of closed-circuit operations. There is a review of the position of the government regarding channels for closed-circuit telecasting, which is of special interest in connection with current TV special-channel applications pending before the Federal Communications Commission.

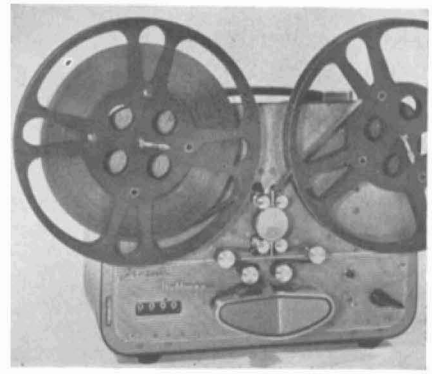
The chronology of telecasts is indexed by subject, arranged by date and also indexed by sponsor's and producer's organization names. The number of closed-circuit telecasts is reported as doubling from year to year making a future industry for which this Data Book is a good introduction.—*V.A.*



new products

(and developments)

Further information about these items can be obtained direct from the addresses given. As in the case of technical papers, the Society is not responsible for manufacturers' statements, and publication of these items does not constitute endorsement of the products or services.



The Model S6 system is a new line of professional magnetic film equipment recently announced by Stancil-Hoffman Corp., 921 North Highland Ave., Hollywood 38. A chief aim of the new design was to make portable recording systems that can be operated from normal a-c sources or batteries.

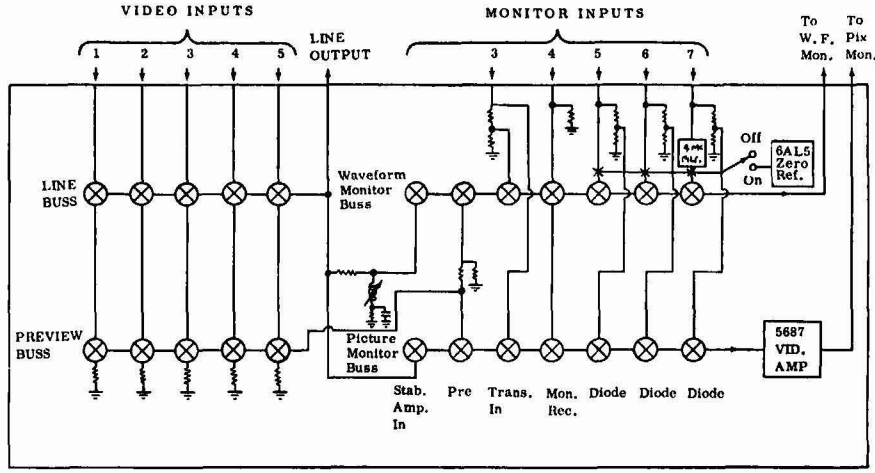
The studio production unit consists of three cases 10¾ × 14½ × 6 in., one case containing a two-channel microphone preamplifier mixer with announce microphone and buzzer system, the second case containing the recording amplifier, playback amplifier and power supply, and the third case containing the film transport or sprocket drive and being the heaviest of the three, weighing 24 lb and having a film capacity of 1000 ft.

One of the S6 systems is complete within a single case, using a subminiature printed circuit automatic volume-control amplifier.

The S6 system is designed about a 24-v battery supply because of the practical availability of such. A full line of inverters and converters is reported available for any camera and recorder combination. There are also may accessories for use with the system which is for 16mm or 17½mm film.

The Intervalometer has been designed to enable the flight engineer to select a basic rate for pulsing cameras which record flight data, with either additional single-frame operation or pre-set cine rates. Called the Gordent 15, this model provides a preset pulse duration of from 100 msec to 1 sec, and a normal pulse frequency of from one pulse each ½ sec to one pulse every 60 sec, in steps of ½ sec. When a pulsation from a

single-frame or cine operation occurs at the same time as a pulsation from the basic-rate function of the unit, an electronic bypass prevents feedback. Thus, the cine or single-frame functions are in addition to, rather than instead of, the basic pulse rate. The unit was developed by Gordon Enterprises, 5362 North Cahuenga Blvd., North Hollywood, Calif., in cooperation with the Instruments Div., Air Force Flight Test Center, Air Research and Development Cmd., Edwards AFB, Calif.

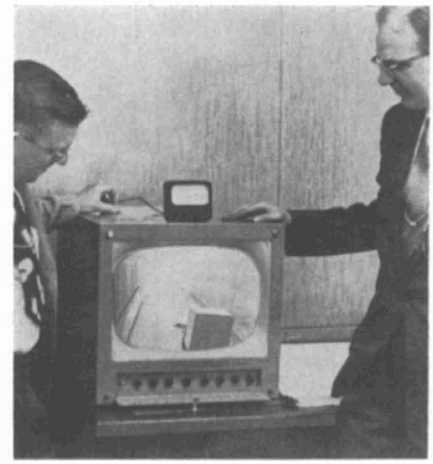


The Type 5304-A Video Switch Unit is a combined program and monitor switching device designed primarily for television transmitter locations or small studio control-room operations. This inexpensive unit is designed to provide facilities for switching any one of five input signals to a single output buss. In addition, separate picture and waveform monitor outputs permit previewing of any of the five input signals, the output signal or any of five other monitor input signals (see diagram).

A built-in zero reference or d-c "chopper" diode switchable to any one of three of the five monitoring inputs allows modulation checks on a demodulated TV signal. Interlocked audio and video switching may be accomplished through the use of five separate audio input jacks switchable to a single output buss, the audio switching being performed simultaneously with the selection of a video channel. This unit requires only 5¼ in. of 19-in. rack mounting space. For further information, Bulletin TR-812 is available from Allen B. Du Mont Laboratories, Inc., 1500 Main Ave., Clifton, N.J.

Membership Certificates (Active and Associate members only). Attractive hand-engrossed certificates, suitable for framing for display in offices or homes, may be obtained by writing to Society headquarters, at 55 West 42d St., New York 36, Price: $2.50.

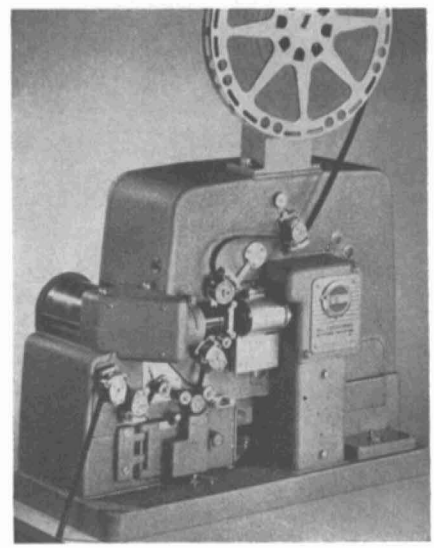
Photographing and studying traffic has been instituted by the New Hampshire Dept. of Public Works and Highways, using an industrial television camera as shown above operated from a bridge, with the results shown on a monitor or on a TV screen in the Dept's administration building several miles away. The camera and monitor are those of General Precision Laboratory Inc., Pleasantville, N.Y., and the microwave link equipment is that of Raytheon Mfg. Co., Waltham 54, Mass. The New Hampshire department has also demonstrated an automatic toll collector and a radar-operated warning signal which lights up suddenly when a speeding car approaches. "Slow down!" it says, "You are speeding!" This sign is activated by the vehicle itself.

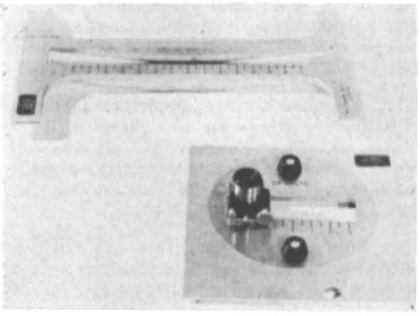


The FL-1001 TV Projector is a product of the Fleetwood Corp., 1037 Custer Dr., Toledo 12, Ohio. Designed for closed-circuit TV conferences and demonstrations, as well as for use in smaller theaters and hotels, it projects a picture large enough to be viewed by several hundred people — up to 9 × 12 ft. Designed to receive all channels, the projector operates on 110-v a-c. Overall size of the unit is 2 ft wide, 3 ft deep and 4 ft high. It weighs about 400 lb.

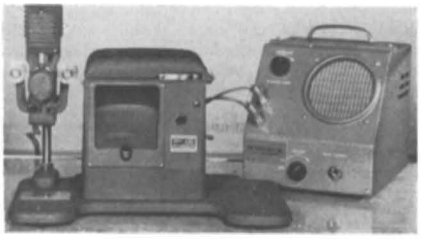
A mobile audio-visual truck is another new unit designed by Fleetwood Corp. primarily for roadshow operators in this country and for foreign government use.

The new Eastman 16mm Continuous Projector, Model 300, has been designed to improve the quality of color television film programs through providing a continuous, uniformly illustrated image. Newly designed, except for the sound-head which is that of the Eastman Model 25 Projector, special features include an $f/1.6$ optical system and automatic compensation for film shrinkage by means of a special sprocket. The optical system has a collimating lens of 25-in. focal length; tilting, rotating mirrors to compensate for film travel; and a 3-in. $f/1.6$ objective lens focused on the film. A flying-spot television tube is used as the light source. A full technical description appeared in the June *Journal*, and further information about it is available from Motion Picture Sales Dept., Eastman Kodak Co., Rochester 4, N.Y.





The Focalscope is a new instrument for checking aerial camera focus and lens collimation developed by Gordon Enterprises, 5362 N. Cahuenga Blvd., North Hollywood, Calif., under contract with the U.S. Air Force, Gentile Air Force Depot, Dayton, Ohio. The instrument can be used by the camera repair technician when making installations, and the aerial camera man during flight may check the accuracy of the focus to insure sharp pictures, since both altitude and temperature changes may affect lens focus. The unit contains a low-powered microscope on which verniers are mounted and it functions like a portable optical bench. Used as an autocollimator it employs a self-contained light source which is projected from the instrument though the camera body and lens and reflected back into the eyepiece, the lens acting as its own collimator. The instrument can be adapted to use on both 9 × 9 in. and 9 × 18 in. film sizes.

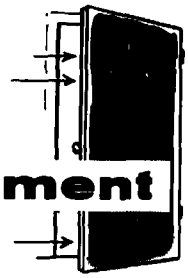


The Dual Reader is a new equipment for 16mm film editing, consisting of an optical sound reproduction unit, a combination amplifier-speaker, and a baseplate to which any 16mm motion-picture viewer can be added and used with sound. The soundhead can be adjusted so that the picture and sound are separated by exactly 26 frames for synchronization, and can be positioned for both single- and double-track systems. The optical slit with prefocused exciter lamp socket will read either variable area or density track. It has a 4-w amplifier and built-in Alnico speaker. A separate exciter lamp rheostat control is incorporated to permit varying the intensity for hi-fidelity sound. The equipment operates on 110–120 v, 60 cycles a-c, is priced at $195.00, with descriptive literature available from The Camera Mart, 1845 Broadway, New York 23.

Cine-Kodak Tri-X C-P Reversal Film is a new product recently released by Eastman Kodak Co., with information from its Editorial Service Bureau, 343 State St., Rochester 4, N.Y. The high-speed Kodak Tri-X emulsion on 16mm reversal film, allowing a daylight exposure index of 200, with a tungsten index of 160, makes it suitable for relatively unfavorable lighting conditions. Processing will be done by the purchaser or through independent 16mm processing laboratories. It will withstand somewhat higher processing temperatures than Kodak Super-XX C-P Reversal Film and is reported to possess sufficient exposure and development latitude to permit its use at speeds higher than its normally rated speed under some circumstances. With only minor sacrifices in speed and graininess, the film may also be used to yield negative images.

Although the film is very sensitive to light, it can be used in a camera with fixed shutter speeds for bright sunlit scenes by placing a filter over the camera lens. It is available in 100- and 200-ft spools, and in 400-ft rolls for darkroom loading, either double perforated or perforated one side. It is also supplied on special order spooled for the Kodak High-Speed Camera or 16mm Fastax Camera. Price of the 100-ft roll on camera spool, without processing, is $4.85.

Equalizers and Wave Filters is Catalog 12-E of 16 solid pages giving specifications, characteristics and case studies exemplifying applications of some 19 filters, equalizers and kits. It is available from Cinema Engineering Co., 1100 Chestnut St., Burbank, Calif.



employment service

These notices are published for the service of the membership and the field. They are inserted three months, at no charge to the member. The Society's address cannot be used for replies.

Positions Wanted

Theater Engineering Manager. Seeking position with large theater circuit or equipment manufacturer. Can assume all responsibility involved in planning, procurement, installation and service of sound and projection equipment; also stage, seating, air conditioning and heating, construction, maintenance entire physical theater and real estate properties. Sales and export experience in High Fidelity. B.S. in E.E. Member SMPTE and licensed professional engineer State of N.J. Over 20 yr experience. C. J. Bachman, 111 Halsted St., E. Orange, N.J.

TV/Motion-Picture Coordination. Registered professional consulting engineer with unique combination experience in TV/film and live production, broad administrative and demonstrated technical ability, can bring technical knowledge and production experience to bear on commercial film production and do shirt-sleeve work. Experience includes executive TV work in major agency, writing and producing commercials, and national networks. Author of 3 books and scores of articles; TV consultant to universities; also professor teaching *all* phases TV and TV films; able to get along with people; well-known in industry, speaker, active in industry committees, NTSC, Senior Member IRE, SMPTE. Age 39. Write: c/o Hewitt, 4515 Saul Rd., Kensington, Md.

16mm Cameraman. 15 yr experience; age 41. Last 7 yr as head cinematographer in medical college shooting color exclusively; editing and some animation, also all-round still and lab work, black-and-white and color. Seeking permanent position; complete résumé from: Robert A. Leonard, 2100 10th Ave. South, Birmingham 5, Ala.

TV Closed Loop Development. Personal equipment and services available for experimental work on closed loop camera chains and 16mm film projection TV systems. Complete camera chain (using 5820 Image Orthicon) including timing generator, RETMA sync generator, line amps, regulated supplies, slide and 16mm, S.O.F. modified projectors, slide and film, standards and pix monitor. All composite and pulse outputs meet precise RETMA standards. Actively engaged in the art since 1936 with pioneer company, well grounded in compatible color TV techniques. Desire to become associated with small but virile laboratory where the above equipments, solid know-how and can-do will be recognized and remunerated accordingly. Harold A. Lockwood, c/o State Hospital, Logansport, Ind.

Television Floor Manager. Young married man desires TV floor position with aggressive station. Recently completed film seminar at New School (New York). Show business background; acting, directing. Will locate anywhere. Write: Joseph R. Masefield, 15 Berkeley Place, Brooklyn 17, N.Y.

Positions Available

Audio Laboratory Engineering Assistant. Will set up, operate and maintain audio equipment in Audio Division of major consumer testing organization; will construct auxiliary equipment as required; will assist division head and others in testing audio equipment sold to public. Required—degree in electrical engineering or equivalent experience; also 3–4 yr experience in audio equipment operation and maintenance; some familiarity with theory and mathematics of audio electronics and acoustics. Salary $100 up depending on individual. Send résumé to Personnel Director, Consumer Reports, 17 Union Sq. West, New York 3.

Partnership available to experienced motion-picture technician in small film concern. Desire and ability to be "own boss" imperative. Requisites: Recording, editing, camera, special effects, animation skills—initiative, drive, intelligence, flexibility and inventiveness. Sales ability and administrative aptitude essential. Resume in letter form stating pertinent facts and full expression of personal and vocational objectives will be accorded strict confidence. Graphic Films, 104 West 43 St., New York 36.

Film Technicians. Motion-picture laboratory experience required—top pay offered to timers, developers, printers, negative and positive workers, cleaners, projection inspectors, chemists, machinists. Movielab Film Laboratories, Inc., 619 West 54th St., New York 19.

Film Editor. Demonstrated creative and technical ability, minimum 1 yr of editing experience. Work in other phases of motion-picture production helpful, but not necessary. Employment will be with college motion-picture unit engaged in production of educational films for TV and classroom use. Basic starting salary approximately $70 per week, commensurate with ability and experience. Send resume of background and experience to Norman E. C. Naill, Motion Picture-TV Service, Virginia Polytechnic Institute, Blacksburg, Va.

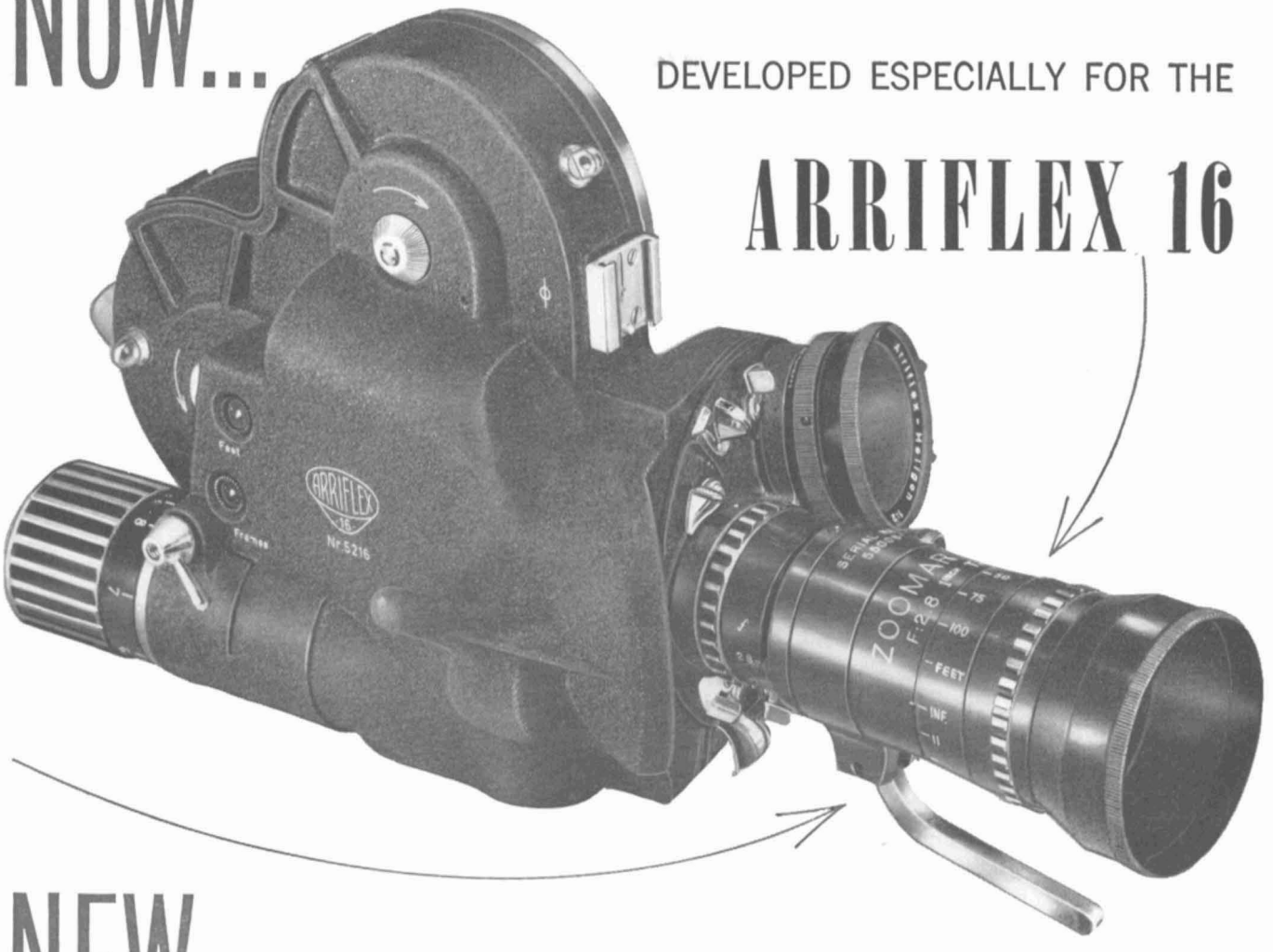
CLASSIFIED ADVERTISING
First three lines $5.00
Each additional line $1.00
per inch $13.00

Professional Services

NOW...

DEVELOPED ESPECIALLY FOR THE

ARRIFLEX 16



NEW ZOOMAR 16-S

No movie camera is so well suited for the Zoomar varifocal lens as the Arriflex 16. It's the ideal combination because:

1 The Arriflex is the only camera with Mirror Reflex shutter, no external finder is used for the Zoomar lens . . .

2 You focus and view the scene while actually shooting—*through the Zoomar lens*...

3 You needn't remove other lenses because the divergent lens turret permits any two other lenses to be used with the Zoomar 16-S without optical or mechanical interference . . . and

4 The vertical lever action of the zoom control is smoother and more positive than the rotary movement usually employed.

SPECIFICATIONS

Varifocal Range.....25mm to 75mm
Aperture Range.....f2.8 to f16
Focusing Range.....8 feet to Infinity
Built-in Lens Hood/Filter Holder for Series VII

$579.00

Note: The Zoomar 16-S is not interchangeable with the standard model, nor can the standard model be converted for use with the Arriflex.

World Wide Distributors: **KLING PHOTO CORP.** 235 Fourth Ave., New York 3, N. Y.
7303 Melrose Ave., Hollywood 46, Cal.