



Comparison of Color Television Systems (NTSC, SECAM and PAL) is presented in the *E.B.U. Review*, No. 87-A, Oct. 1964, pp. 209-215. The comparison, mainly in the form of tables showing characteristics and standards, is in the nature of a follow-up to a paper by R. Theile, Chairman of the Ad Hoc Group on Color Television ("The Work of the E.B.U. Ad Hoc Group on Color Television," *E.B.U. Review*, No. 80-A, Aug. 1963, pp. 138-141; reprinted in *Jour. SMPTE*, 72: 860-862, Nov. 1963). After retracing the history of the matter, the paper explains in simplified terms the functioning of the three systems and compares the fundamental principles of the systems without entering into the details of their characteristics.

Most of the tests carried out by the Ad Hoc Group refer to the first version of the SECAM system, now known as SECAM I. However, since the beginning of 1964, a slightly modified version of the system, known as SECAM III, has been taken into consideration. The tables also compare performance and characteristics of the new variant of the SECAM system.

Reprints of Professor Theile's paper, as well as a limited number of copies of the

French and English versions of the two documents of the Ad Hoc Group are available to persons intimately concerned with color television upon request to the Technical Center of the European Broadcasting Union (E.B.U.), 32, avenue Albert Lancaster, Brussels 18, Belgium. Single copies of the *E.B.U. Review* are priced at 30 Belg. Fr. Annual subscriptions (six issues) for either Part A (Technical) or Part B (General and Legal) are available at a rate of 150 Belg. Fr., or 15 Swiss Fr.

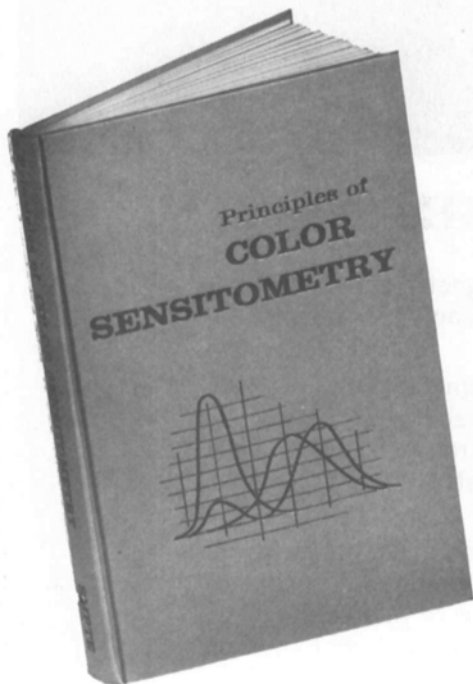
Study of Transistor Video Amplifier With Feedback Loops, by Yasushi Fujimura, NHK Technical Monograph No. 5, Feb. 1965, is a 71-page paper describing the design of transistor video amplifiers with feedback loops. The author's summary of the paper notes that: "The inverse root-locus method, which was developed for the field of automatic controls, is also useful for designing the feedback-type video amplifiers. The inverse root-locus obtained by the author, represents the familiar functions of Butterworth, Bessel, etc. The margin of oscillation, the return difference of the negative feedback and the sensitivity to drift of some parameters are examined and compared with the design method by the Bode diagram. This method can be applied for the design of both low- and high-frequency transfer characteristics in video amplifiers. Here, the author discusses the n th order multi-pole low-frequency transfer function. Several characteristics of single-stage transistor feedback amplifiers are analyzed

by using the inverted π equivalent circuit of transistors which was unilateralized and devised by the author.

After comparing the measured characteristics of video amplifiers using several types of transistors, it is found that some error due to the approximation of the equivalent circuit occurs in the case of transistors which have large effective excess phase shift as the alloy or drift type. However, this equivalent circuit is useful for designing single-stage video amplifiers. The characteristics of the multistage feedback-type video amplifier are also analyzed and the design method for multistage amplifiers was obtained. The features of the feedback loops were determined by employing the signal flow graph."

The NHK Technical Monographs are published by Research and Information Services Division of NHK (Nippon Hoso Kyokai—Japan Broadcasting Corp.) Technical Research Laboratories, 361, Kinuta-machi, Setagaya-ku, Tokyo, Japan. Previously published NHK Monographs include No. 1 (Mar. 1963), "Design of a Transistorized Image Orthicon Camera Chain," by Y. Fujimura and K. Wakui; No. 2 (Jan. 1964), "Directional Microphones—Analysis and Application," by H. Nakajima and T. Yamamoto; No. 3 (July 1964), "Image Transmission Carrier and Image Spectrum in Generalized Photographic System," by K. Kinoshita; and No. 4 (Jan. 1965), "Line-Sequential Chrominance Components Transmission System in Color Television and Its Application," by M. Inatsu.

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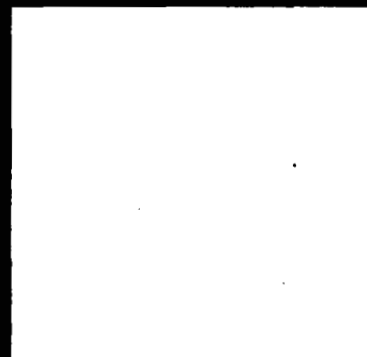
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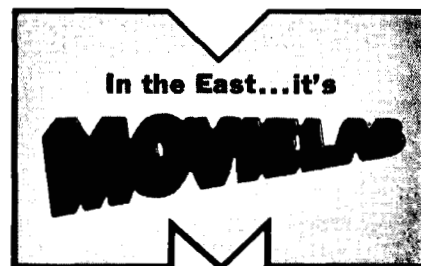
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Colburn Comments on Foreign Language Films is a 12-page informational booklet which offers many valuable suggestions to producers of motion pictures and filmstrips planned for overseas use. The booklet includes helpful suggestions on the use of the English soundtrack and points out the impossibility of providing word-for-word translations into a foreign language, sometimes because of differences in sentence structure and sometimes because of differences in or lack of technical vocabularies in other languages. Methods of overcoming these difficulties are outlined. In addition the booklet stresses the importance of communicating with a client or customer in his own language.

Colburn Comments on Sound Slidefilms is an illustrated brochure designed to provide producers and users of filmstrips or sound slidefilms with practical information. Noting that "completion of a successful filmstrip or sound slidefilm calls for teamwork and understanding between the creative producer and a competent, experienced laboratory," the booklet explains in detail the various procedures involved and where and how sound slidefilms can be effectively used.

Both brochures are available upon request from Geo. W. Colburn Laboratory, Inc., 164 N. Wacker Dr., Chicago, Ill. 60606.

Soviet Physics—Acoustics is a translation, beginning with the 1955 issues of *Akusticheskii Zhurnal* of the USSR Academy of Sciences. The journal is devoted principally to physical acoustics but includes electro-, bio-, and psychoacoustics and reports on mathematical and experimental work with the emphasis on pure research. Published quarterly, Vol. 11, Nos. 1-4 of *Soviet Physics—Acoustics* (containing a translation of material published in the original Russian journal in 1965) is now available from Dept. AP, American Institute of Physics, 335 E. 45 St., New York, N.Y. 10017. In the United States, Canada and Mexico, it is priced at \$20.00, and elsewhere at \$22.

The IEEE Membership Directory listing the members of the Institute of Electrical and Electronics Engineers will be made available toward the end of this year, according to a recent announcement. The new Directory, expected to contain over a thousand pages, will be the first one published under the aegis of the IEEE. The member information will be compiled, using the Institute's new computer, and will include grade of membership, position title and business address. The Directory will also include a brief description of the IEEE and will list its major awards. Price for IEEE members will be \$8.00 and for nonmembers, \$25.


BBC Engineering Monograph No. 57, June 1965, contains a two-part paper, "Drop-Out in Video Tape Recording" by W. K. E. Geddes. Part I, on the subject of "The Subjective Impairment Produced by Drop-Outs," describes test procedures for assessing the subjective impairment produced by various forms of drop-out interference in video-tape recordings. As a result of the assessments it is concluded that



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the subjective acceptability of a tape's drop-out performance may be predicted by means of a simple meter. Design parameters for such a meter are described. Part II, on "A Simple Drop-Out Compensator for Video-Tape Recorders," gives a brief description of a simple device that considerably reduces the subjective impairment. Tests similar to those described in Part I indicate the degree of improvement to be expected from such a device.

BBC Engineering Monographs appear about six times a year. Each Monograph describes work that has been done by the Engineering Division of the BBC and includes, where appropriate, a survey of earlier work on the same subject. Individual copies are priced at 5s and an annual sub-

scription is £1, available from BBC Publications, 35 Marylebone High St., London, W.1.

Three booklets dealing with color television film practices have been distributed by CBS Television Network, Division of Columbia Broadcasting System, Inc., 51 W. 52 St., New York, N.Y. 10019. *Color Television Film Shooting Practices* stresses the inflexibility of color film developing and printing processes as compared to black-and-white film production. The 16-page booklet cites a number of *Journal* papers. *Color Television Film Printing Practices* (6 pp.) sets forth criteria for the production of color film prints for television use. *Color Television Film Evaluation Practices*

(12 pp. including a Film Evaluation Chart) discusses various characteristics that are important to making a judgment of technical film quality from a color television viewpoint.

The Optical Industry and Systems Directory (11th ed., 1965) has been announced by Optical Publishing Co., 7 North St., Pittsfield, Mass. 01202. The 486-page directory is divided into six sections (A through F). Section A, Optical Products and Services, lists, alphabetically, instruments, components, raw materials, special services and manufacturing under some 900 category headings covering the areas of scientific optics. Section B, Systems, lists precision electromechanical and mechanical devices for control, detection, guidance, data reduction and display, testing and other applications, under some 125 category headings. Section C, Editorials and Special Features, includes a map showing the geographical distribution, in 1965, of optical companies. Section D, Suppliers, alphabetically, lists corporate names, locations, and describes activities. Section E, Suppliers, geographically, lists suppliers in Canada and the United States according to area (states, provinces and cities). Section F, Lens Appendix, tabulates lenses of American and foreign manufacture according to trade name, focal length, aperture, covering power and intended use.

Statistical data are included such as graphs that show a significant growth of the technical optical industry and a map that shows a shift from the "optical triangle" (Boston, Rochester and New York) toward the West Coast. The directory is priced at \$15.00.

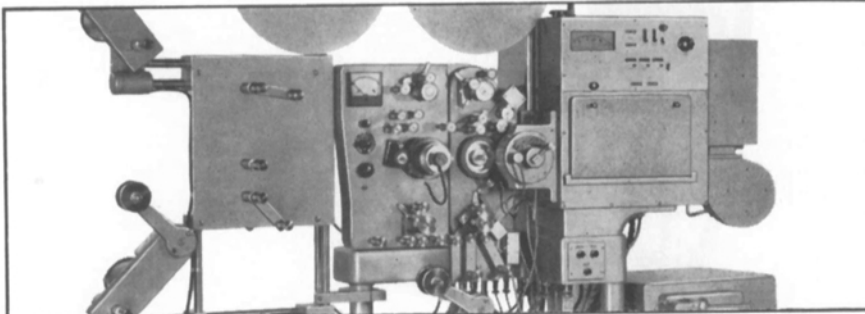
The Proceedings of the Applications Forum on Antenna Research (611 pp., 300 illustrations) is available from Engineering Publications Office, 112 Civil Engineering Hall, University of Illinois, Urbana, Ill. at a price of \$5.00. The volume was edited by Prof. Paul E. Mayes. Professor Mayes was also Forum Director. The forum was held in January 1964. Fifteen lectures were given on frequency-independent antennas, data-processing antennas, antennas in anisotropic and moving media, and aperiodic antenna arrays.

Pseudo-Random Dot Scan Television Systems (AD 616 275N), a 53-page report prepared by the Polytechnic Institute of Brooklyn for the Air Force (Dec. 1964) is available from Clearinghouse, U.S. Department of Commerce, Springfield, Va. 22151. It is priced at \$3.00. The report (on experiments conducted by engineers of the Polytechnic Institute) indicates that to avoid flicker with low frame rates, a pseudo-random dot scan can be employed in conjunction with long-persistence phosphors. The experiments demonstrated that 15% dot flicker is tolerable to the human eye.

The report discusses 10 systems, including a 2-million-element picture with 4-mc/sec bandwidth; tape recording at 15 in./sec; continuous relaying of satellite pictures; short-wave transmission; phonevision; and very low frame rate applications that use a scan conversion system.

Government research reports in electronics available from the Clearinghouse, U.S. Department of Commerce, Springfield, Va. 22151, include:

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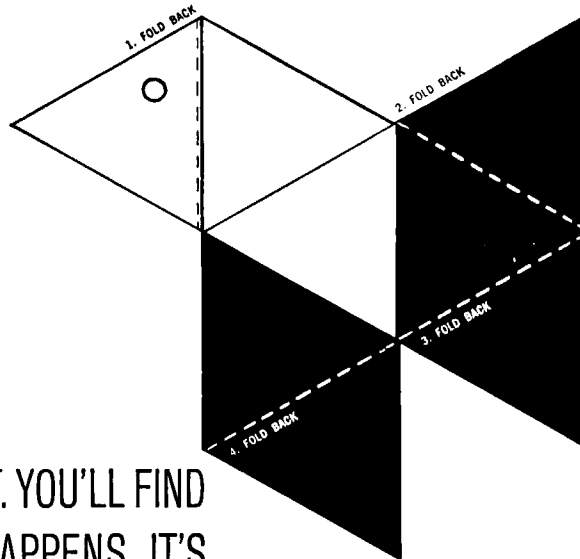
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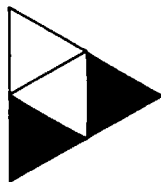
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Low Noise Narrow Band Amplification With Field Effect Transistors, IS-1152N, prepared by Iowa State University (Ames) for the Atomic Energy Commission, price, \$3.00.

Research and Development of a Camera Tube for Night Viewing, AD 615 748N, prepared by Westinghouse Research Laboratories (Pittsburgh) for the Army, price, \$2.00.

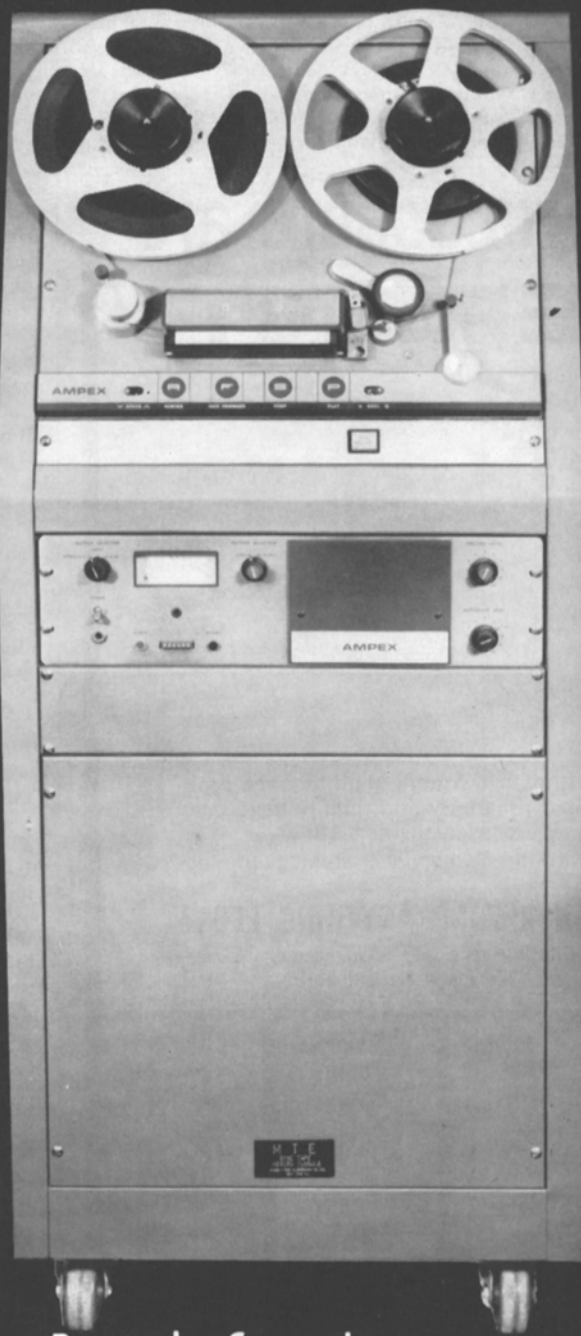
Molecularized PCM Telemetry Transmitting Set, AD 615 548N, prepared by Radiation, Inc. (Melbourne, Fla.) for the Air Force, price, \$6.00.

Television Tape Recorders, a comparison of helical-scan video-tape recorders, has been prepared by the ETV Committee of the Colorado Association of State-Supported Institutions of Higher Education. The Principal Investigator was William C. Lewis, Chief Engineer for Television, University of Colorado, Boulder, Colo. The 48-page (plus a 1-p. equipment list and 3 pp. illus.) report, completed in 1964, sets forth the recommended minimum specifications for helical-scan television tape recorders and evaluates various machines in terms of these specifications. Machines tested and compared include Ampex VR 1500, Precision Instrument PI 3V, Sony PV 100, and Dage DV 200. The report has a separate section describing a British-made machine called Telcan, and includes a Technical Summary and a section on New Developments. The New Developments section mentions the RCA TR-5 Mobile Tape Recorder, Reeves Soundcraft Video Tape No. 302 and the Sony TV Signal Stabilizer.

A 12-page brochure listing **George Eastman House publications** is available from Book Service, George Eastman House, Rochester, N.Y. 14607. The books include a number of collections of photographs by famous photographers and books dealing with photography as an art, as well as a few technical publications.

Books recently announced by Pergamon Press Inc., 44-01 21 St., Long Island City, N.Y. 11101, include: *Electromagnetic Scattering*, ed. by Milton Kerker, price \$19.75; *Telemechanics*, by V. S. Malov (Russian translation by Pergamon Press), price \$5.00; *Vacuum and Solid State Electronics: An Introductory Course*, by D. J. Harris and P. N. Robson (Paperback, part of *Commonwealth Library* series), price \$3.75; *Frequency of Self-Oscillations*, by J. Gorszkowski, price, \$15.00; *The Scattering of Electromagnetic Waves From Rough Surfaces*, by P. Beckmann and A. Spizzichino, price, \$15.00; and *Fundamentals of Microwave Electronics*, by V. N. Shevchik, price, \$9.50.

Electromagnetics in Space, edited by Karl R. Spangenberg, is an illustrated book prepared by a staff of specialists from Lockheed Missiles & Space Company. It is available from McGraw-Hill Book Co., 330 W. 42 St., New York, N.Y. 10036, at a price of \$15.00. The book (272 pp., plus index), presents topics in applied electromagnetics particularly related to space technology. Attention is focused on space communications and on ground and space antenna



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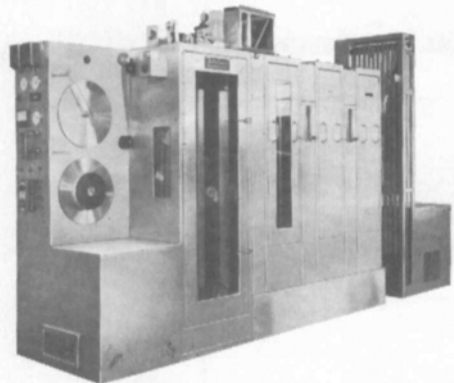
design considerations. The authors' original concept of the radiation mutual coupling factor, and a comprehensive numerical analysis of impedance perturbations in antenna arrays are given. The book is divided into six chapters: Review of Fundamental Electromagnetic Relations, Ultra-Long-Range Communications Considerations, Ground Antennas, Spacecraft Antennas, Linear and Complex Radiating Elements, and Impedance Perturbations in Antenna Arrays.

Proceedings of the Second Annual Allerton Conference on Circuit and System Theory, a 914-page volume containing more than 150 illustrations, is available

from Engineering Publications Office, 112 Civil Engineering Hall, University of Illinois, Urbana, Ill. 61803, at a price of \$10.00. The book contains 49 papers presented at that Conference held at the University of Illinois in September 1964. The conference was devoted primarily to the theoretical aspects of the related areas of circuits, networks, and systems. Topics include Control and Communications; Filter Theory; Nonlinear Theory; System Theory; Topological Methods; Graph Theory; Optimum and Learning Systems; Circuit Theory; Active Network Theory; and Codes and Sequential Machines. A limited number of copies of the *Proceedings* of the first Allerton Conference held in 1963 are also available at the price of \$10.00.

A High-Speed Infrared Mapping System for Reliability Assessment of Miniature Electronic Circuits, AD 615 018N, a report prepared by Naval Electronics Laboratory, San Diego, Calif., is available from the Clearinghouse, U.S. Department of Commerce, Springfield, Va. 22151. The report describes a high-speed infrared mapping system developed by Navy researchers for rapid testing of mounted miniature circuit components. The system consists of a cryogenically cooled infrared detector, a scanning mechanism, electronic circuitry, and a modified facsimile machine. The report states that a thermal map of a 1-in. square circuit surface can be made in 30 min. Mapping resolution is sufficient to display large IR energy level changes occurring in a 0.001-in. square circuit area. The energy changes disclose the presence of a faulty component, since the chief cause of parameter change, performance degradation, and eventual failure of electronic circuit components is known to be excessive heat dissipation.

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316DS	Neg/Pos.	B&W	16mm	60-100FPM
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NP36	Neg/Pos.	B&W	16mm	90FPM
S-90	Neg/Pos.	B&W Spray	16/35	90FPM
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The Ninth Annual Survey of Audiovisual Materials (including a Directory of producers) by Elizabeth E. Seittelman, of Bronx Community College, appears in the April 1965 issue of *The Classical World*, published by The Classical Association of the Atlantic States, Inc., Rutgers, State University, Newark College of Arts and Sciences, 12 James St., Newark, N.J. 07102. The survey covers such materials as films, filmstrips, slidestrips, slides, tape recordings, transparencies, etc., and includes brief descriptions, evaluations and availability.

More than 1,000 films are described in the 1965/66 catalog published by Sound-Services Ltd. (in association with Film Producers Guild Ltd.), Wilton Crescent, Merton Park, London S.W. 19, England. The 320-page catalog lists and describes 16mm and 8mm sound films and filmstrips in 21 different categories of hobbies, interests and sports. The section on Education lists 96 films for classroom use including the P.S.S.C. and Chemstudy series of physics and chemistry teaching films. The section on Management and Industrial Training includes the management training films used at Harvard Business School and the Henry Strauss Management Training Programs. The catalog is available from Sound-Services at a price of 5 shillings.

Colburn Comments on Industrial Film Cost Reduction is one of the *Colburn Comments* series of informative booklets available from Geo. W. Colburn Laboratory, Inc., Dept. FCR-4, 164 N. Wacker, Dr., Chicago, Ill. 60606. The 12-page illustrated booklet explains how in-plant production units can cut costs compared to professionally-produced film. Both technical and nontechnical "tips" for producing effective industrial films at substantial cost reductions are provided. Methods of cutting expense are clearly explained, beginning with pre-production planning, and going through the production sequence, script preparation, photography, work-print editing, voice recording, narration, and final laboratory operations. Details of film production in general and Colburn

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Books in the Massachusetts Institute of Technology Radiation Laboratory Series are available from Boston Technical Publishers, Inc., 5 Bryant Rd., Lexington, Mass. 02173. A price list which includes a brief description of each of the 28 books in the series is available upon request. Content of books in the series ranges from the more advanced and theoretical approaches to such subjects as *Electronic Time Measurements*, *Threshold Signals*, and *Theory of Servo-*

mechanisms to introductory discussions, such as *Pulse Generators*, *Waveguide Handbook*, *Components Handbook*, and *Principles of Microwave Circuits*.

Government reports on research and development projects in the fields of optics and electronics are available from the Clearinghouse, U.S. Department of Commerce, Springfield, Va. 22151. The reports include *Replica Optics*, Order No. AD 611 417N, price \$4.00; *Experiments Relating to Regenerative Laser Amplifier Design*, AD 610 111N, price, \$2.00; *Development of a Large Dynamic Range Tunnel Diode Amplifier for Phased Array Devices*, AD 613 613N, price, \$2.00; *Electronic Observers for Radio Direction Finding*, AD 613

039N, price, \$4.00; *High Power Microwave Filter for the Suppression of Spurious Energy*, AD 612 893N, price, \$5.00; and *Study of Ferrimagnetic Crystals by Parallel Pumping*, AD 613 321N, price \$4.00.

Paillard, Inc., 1900 Lower Rd., Linden, N.J., publisher of the *Bolex Reporter*, has announced availability of the 1965 special professional issue. This issue is offered without charge to those who make or use motion pictures in their professions. The 36-page issue is illustrated in color and contains first-hand reports on the production and application of motion pictures by and for industry, education, medicine and research.

The British Film Producers Association, 49 Mount St., London, W.1, England, has issued the Executive Council's 23d Annual Report (1964-1965). The report covers the Association's activities including its participation in international film festivals and technical matters. The report noted that the latest addition to the technical activities of the Association was the formation of the Set Construction Committee to consider such subjects as set construction planning, materials and handling. The report also noted that the major concern of its Sound Electronics Committee has been the G. P.O.'s restriction of radio-microphones to a wave band of 174.6 to 174.95 mc/sec, which is holding up their general adoption in film production so as to obtain more usable dialogue recordings.

The Backstage TV/Industrial Film & Tape Directory, Winter-Spring Edition 1965, is available from Backstage Publications, Inc., 155 W. 46 St., New York, N.Y. 10036, at a price of \$1.00. The Directory contains 104 pages plus a 12-page New Film Equipment Section. Comprehensive listings of television producers, suppliers of equipments and services, and advertising agencies in New York, Hollywood, Chicago and other major centers in the United States are presented. In addition, the Directory features informative articles by leading producers and technicians.

A brochure available from Traid Corp., 777 Flower St., Glendale, Calif. 91209, contains color illustrations and descriptions of various products as well as views of Traid facilities and personnel. Products illustrated and described include the Adtrol Model TPG Timing Pulse Generator; Maurer Model 220 and P-220 70mm cameras; Newtek Modulation Transfer Function Optical Bench; Par Model V-70 70mm Oscilloscope Camera; SLAP Model 80 Photometer; Optical Craftsmen Telescope and Accessories; Vanguard Model "G" Precision Film Reader; and Vue Tronics Video Film Recorders.

The Laser Letter, a publication designed to give up-to-date information on types of lasers, is available from American Data Processing, Inc., Book Building, Detroit, Mich. 48266, at a subscription rate of \$36.00 per year. Information is presented on such types of lasers as gas, solid state, chelate,

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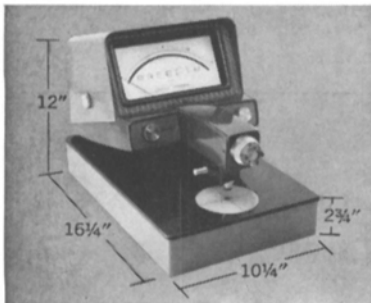
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injection, glass and rare earth. The publication also reports on newest laser techniques, such as gas lenses for focusing laser light, one-gigawatt pulses obtained from liquid dye Q-Spoiler; use of Pockels Effect to steer the laser beam; and determination of frequency laser by phonon generation.

Revisions of the Sylvania Photolamp Technical Manual have been issued by Sylvania Electric Products, Inc., Lighting Products Div., 100 Endicott St., Danvers, Mass. 01923. A sheet showing the order of pages and indicating where substitutions of the new pages should be made is included for the convenience of holders of the *Manual*. The revisions bring the Manual up to date as of January 1, 1965.

Lighting equipment for television using the quartz-iodine lamp is described in Catalog Q-9 available from Kliegl Bros.,

32-32 48th Ave., Long Island City, N.Y. The firm's Lilliput Twin Spots and newly developed "Nook" lights are described in the illustrated catalog as well as other lighting equipments including fresnels, scoops, cyclorama border lights, follow spots, cyclorama footlights and Klieglights.

Miniaturized quartz-iodine lights designated Molequartz Nooklites are illustrated and described in Bulletin 106 available from Mole-Richardson Co., 937 N. Sycamore Ave., Hollywood, Calif. 90038. Nooklites, available in sizes ranging from a 650-w 1-light to a 1,950 3-light unit have mounting brackets. Various types of accessories are available. Also described in the bulletin are various other types of lighting equipments.

The Shure Professional Products Catalog, describing newly developed microphones

and other professional equipments, is available upon request from R. W. Carr, Manager, Professional Products Div., Shure Brothers, Inc., 22 Hartrey Ave., Evanston, Ill. In addition to microphones, other equipments listed in the catalog include disc reproducing equipment and special products such as transcription preamplifiers, stereo equalizers, line transformers, and microphone stands and adapters.

Audiovisual Notes From Kodak (published three times a year) contains in the most recent issue a pleasantly readable article entitled "Super 8 System Challenges Creativity," as well as illustrated descriptions of some Kodak products and publications. A subscription to *Audio-Visual Notes* is available upon request (listing name, title and organization) from Motion Picture and Education Markets Div., Eastman Kodak Co., Rochester, N. Y. 14650.

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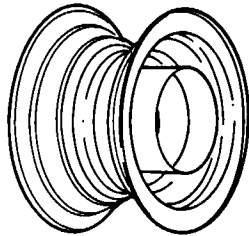
Hudson Photographic Industries, Inc., manufactures a complete group of photographic accessories and has made significant contributions to the field during the past 10 years; its products are sold throughout the free world. The Industrial/Educational Products Division manufactures slide, stripfilm, microfilm and micro projection systems in addition to a wide range of rear-projection devices and integrated projection-viewing systems.

Splicing and film repair equipment for 8mm, 16mm, 35mm sprocketed and nonsprocketed, 70mm film and magnetic tape are other products of the Industrial Products Group. The Amateur Products Group includes 8mm film editors and portable movie viewers, film reels, Quik Splice movie film splicers and splicing tape, Quik Splice magnetic recording tape splicers and splicing tape, and transparency viewers, illuminators and slide sorters. The O.E.M. Contract Group is concerned with research and development of products made by H.P.I. for other equipment manufacturers.

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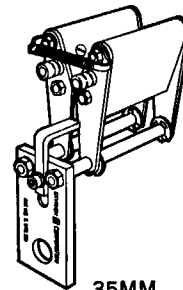
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