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ments are utilized in such diverse fields as ballistic missile reentry studies, military intelligence and geodetic studies, each with its special information content. The use of such instruments will surely be extended to other areas as well as be increased in current areas. More and more information is being acquired which must be extracted from the data records with the highest accuracy in the shortest time interval after acquisition.

The approaches of several of the many groups concerned with this are presented in the individual contributions to the *Proceedings*. The papers cover most of the areas of data reduction including applications of automatic reduction techniques, analyses of data records for information content, use of standard optical data reduction equipment in conjunction with computers and studies of, as yet, nonstandard equipment (e.g. those utilizing fiber optics). As such, this collection of papers presents some problems and their solutions to a very important, but seldom recognized, segment of research workers, namely the data analysts.

Seminars such as this are fast becoming an absolute necessity for the purpose of exchange of new ideas and introduction to new equipment. However, publication of the presented papers only shows a very few specific problems of the many more problems inherent in the field of data reduction. The collection in this *Proceedings* will serve to introduce the reader to several working groups and might answer a few questions but will leave many other questions unanswered. It appears now that there are as many solutions as there are working groups — and these are indeed many. — *Walter G. Planet*, Barnes Engineering Co., 30 Commerce Rd., Stamford, Conn.

The Optical Industry Directory

Published (1964) by the Optical Publishing Co., Lenox, Mass. 8 by 10½ in. Paper bound. Price \$10.

The 10th Anniversary issue of the Optical Industry Directory is the only existing publication that covers the fields of optical instrumentation and systems design and fabrication.

The 400-page directory lists many hundreds of American companies that deal with modern optical design and has divided the general field into some 1000 categories to delineate the itemized fields of interest. For the convenience of the user the publishers have included the consolidation of small companies with larger organizations, as well as changes of address resulting from the building of new facilities. The listing also includes the names and telephone numbers of the key officers of each organization. The Lens Appendix lists the characteristics of over a thousand "off the shelf" objectives, giving the manufacturer as well as the trade name and principal use. The Directory is also useful for the student in physics departments who, contemplating a career in optics, needs to know what companies offer job possibilities.—*A.E.A.*

Educational Media Index (Vols. 3 and 11)

Published (1964) by McGraw-Hill Book Co., 330 W. 42 St., New York, N.Y. 10036. Art and Music (Vol. 3) — 236 pp. + List

of Sources (pp. S-1-S-32), 7 by 10 in., Price \$4.50 (+ annual supplement, \$6.50); Science and Engineering (Vol. 11), 334 pp. + list of Sources (pp. S-1-S-32), 7 by 10 in., Price \$5.10 (with annual supplement, \$7.25).

The Educational Media Index (14 volumes) is a project of the Educational Media Council. Listed and described in the index are "materials educational in nature (that are) generally available for educational use anywhere in the United States. Excluded are such items as books, conventional printed material, recordings and tapes entirely of music and materials that are a transposition from another primary medium such as talking books." Included are such items as charts, graphs, maps, cross-media kits, films and kinescopes, filmstrips, pictures in sets, models and mock-ups, phonodiscs, phonotapes, programmed instructional materials, slides and transparencies, and videotapes for educational use. Subjects in Vol. 3 on *Art and Music* range through many areas such as Abstract Expressionism, Architecture (Academic, Baroque, American, Celtic, etc.) through Woodwinds and Worksongs. Vol. 11 on *Science and Engineering* includes items in the broad, general areas of Astronomy, Life Sciences, Earth Sciences, Chemistry, Physics and (under Engineering) Education. The first yearly supplements will be issued in 1965.

Books, Booklets, Brochures

Washington County Closed Circuit Television Report is a definitive report on the Hagerstown experiment, i.e., use of a closed-circuit TV network for county-wide classroom education. Inaugurated in Hagerstown, Md. (county seat of Washington County) in 1956 (*Journal*, p. 446, Aug. 1956), the project was an opening event in what has often been called the revolution in education.

The 80-page paperbound booklet published by the Board of Education, Washington County, Hagerstown, Md., (single copies available without charge) is handsomely designed and illustrated. Part I of the report, *Television in Washington County*, presents facts and figures on the system as a whole, engineering requirements, staff, pupils, teachers, and costs. Part II evaluates the program in terms of educational values. Comparison tables and descriptions of various means of evaluation are used to show the achievement of television-taught groups as compared with achievements of similar groups conventionally taught. The overall gain in achievements of pupils taught by television was shown to be "reliably greater than chance," the report states. Conclusions are drawn in the Evaluation Summary: "Is television responsible for the achievement gains shown in the testing program? The Washington County staff does not claim that television per se is responsible for all the improvement in pupil achievement that occurred, but feel that it has contributed to an overall situation that made growth possible. (1) It focused attention on problems in a way never before possible. (2) It stimulated teamwork and planning. (3) It created interest in curriculum development and teaching procedures. (4) It re-

Hot News

Film for processing at 130°F. We furnish a 16mm and 35mm film long known to those skilled in the art as KODAK LINAGRAPH Pan Film. Time has caught up with it, though, as we are pleased to be telling you instead of having you tell us.

The old LINAGRAPH Pan emulsion couldn't stand more than 90°F processing temperature. To be in the swim today, one processes film almost as hot as one launders shirts. Minutes shrink to seconds (but shirts hardly shrink at all any more). Now KODAK LINAGRAPH Pan Film carries the legend "Improved for High-Speed Processing." It can stand 130°F.

We don't merely guarantee that the emulsion will not turn to beef bouillon at 130°F.



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Arrangements to shoot the new KODAK LINAGRAPH Pan Film to you are made through Photorecording Methods Division, Eastman Kodak Company, Rochester, N.Y. 14650. For 16mm, we can also furnish a processing machine that delivers in 2 minutes dry to dry. For 35mm, there is still a little challenge left in designing 130°F processing gear instead of the easy way, where you simply make out a \$12,500 equipment-purchase requisition.

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Audio Controls Division
Altec Lansing Corporation

SUPERIOR NEW INSTRUMENT SWITCHES AND ATTENUATORS

It's no longer a secret that our Audio Controls Division at Altec is well on the way to producing what we feel will be the best instrument switches and attenuators ever made specifically for the recording and broadcast industries. Without wishing to detract from my own three decades as a design engineer and manufacturer in this field, nor from the superb facilities available to me at Altec, I must admit that much of the credit goes to the fact that we are starting from scratch on all of our designs. Frankly, this is an engineer's dream—no preconceived ideas, no old designs that have to be adapted, no existing tooling that has to be used. Our only concern is the here and now, and how can we make it better.

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Looks like our switches and attenuators will give you the best set of performance specifications ever available. Here are a few of the things we've done to achieve this superiority: Each brush blade is independently sprung to provide contact all the time. We predict a total absence of contact bounce. The brush springs are completely out of the circuit and will carry no current. Our brushes are made of fine silver ("coin" silver, normally used, contains copper and is subject to oxidation which reduces conductivity and raises noise level among other things). The fine silver does not oxidize—it sulfides. This has two advantages: conductivity is not affected and sulphide of silver has a lubricative quality which is actually beneficial.

MORE INNOVATIONS

As you know, most switches come in round cans. We're putting ours in square ones. You don't have any use for the space around the can anyway so we're using the corners for the wiring. The result is that our switches will give you more positions in less space. For example, most switches have 12 positions at the most. Ours have 31 positions on a 1½" switch and up to 45 positions on the 2¼" one.

To cap the whole thing off, we'll be able to gang up to 8 of our attenuators in tandem so you can operate the whole works with just one control.

NEW SOLID STATE 470A PREAMP NEARLY READY

We announced this device in our last "Studio Talk." It's the one you can use as a preamp or as a line, booster, or program amp with no internal changes needed. By the way, the 470A has a lower noise level than any vacuum tube unit on the market.

And by the time you read this, our 61A Program Equalizer and 62A Graphic Equalizer will be in full production. So give me a call or drop me a line. I'll be happy to send you the latest information on what's here now and what's coming soon.

Art Davis

Art Davis

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quired pupils to assume more responsibility. (5) Parents took a greater interest than formerly in the school program and in the progress of their children."

A few of the many significant bits of information to be found in Part I of the report: "The television network first reached 6,000 pupils in 1956, then 12,000 in 1957, 16,500 in 1958, 18,000 in 1961, and 20,500 in 1963" — "The Chesapeake and Potomac Telephone Company carries all responsibility for the maintenance and operation of the cable and the system amplifying equipment. All other equipment... is the responsibility of the chief engineer and his assistants." — "The Engineering Department, like the Production Department, trains its own personnel. With the exception of the chief engineer and his assistant, all are junior college students or recent high school graduates." The entire report is packed with information and contains numerous quotable bits. For example, from the section on Classroom Teachers, discussing less obvious advantages of teaching by television, "A chemistry experiment which might otherwise be considered too dangerous can be brought into the classroom, and so can a rattlesnake."

The report is an outstanding addition to the rapidly growing body of literature on educational television.

The British National Film Catalogue, Volume 1, 1963, is a 150-page book published by British National Film Catalogue Ltd., 55a Welbeck St., London W.1, England. The book includes titles and descriptions of 1,185 British-produced films released during 1963; also included are titles of television programs available on film. Editors are Bernard Chibnall and Michael Moulds. The volume is a cumulation of the six bimonthly issues of the British National Film Catalogue (*Journal*, p. 906, Nov. 1963). An annual subscription consists of the six bimonthly issues and the annual volume. Subscription rate is £ 6 6s (\$18.00). The catalog includes titles and descriptions of all types of films, including feature, documentary, educational, etc., and also includes an index to titles and to sponsors, production companies, distributors, artists, technicians, and others.

The ASA Catalog of American Standards, published by the American Standards Assn., Inc., 10 E. 40 St., New York, N.Y. 10016, lists thousands of current (as of December 1963) standards in 25 fields. The catalog includes an organizational cross index and lists special ASA publications, many of them available without charge. International Recommendations (ISO, IEC, and CEE) are also listed.

The Heterodyne Voltmeter and VHF Converter, Model 2004/05, is described and illustrated in a six-page specification sheet available from B&K Instruments, Inc., 3044 W. 106 St., Cleveland 11, Ohio. The brochure contains a detailed description of the instruments, their specifications and typical applications.

The AMA Medical and Surgical Motion Pictures Catalog, published by the American Medical Association, 535 N. Dearborn

St., Chicago, Ill. 60610, lists more than 3,000 motion pictures. Some 600 specialty subjects are grouped under three general categories, basic sciences, clinical medicine and surgery, and para-medical sciences. Listings include a brief summary and other pertinent information including language versions other than English and the name and address of the primary rental source. The catalog is available from the publisher at a price of \$5.00 in the United States and Canada and \$5.50 in foreign countries.

Descriptions of products developed for special applications by the U.S. Air Force and by National Aeronautics and Space Administration are available from OTS, U.S. Department of Commerce, Washington, D.C. 20230.

Development of a Brushless DC Motor for Satellite Application (NASA TN D-2108) describes a motor developed by NASA to increase significantly the efficiency of power conversion to mechanical energy. Brushes are eliminated by using photooptical detectors and transistorized switching to duplicate functions of the conventional commutators without physical contact.

A Portable Presentation Package for Audio-Visual Instruction (AD 427 777) describes a portable audio-visual kit relatively independent of written language which has been put together by the Air Force for instructing small groups. The kit weighs 23 lb and costs less than \$200. It includes a camera with a light meter, projector with remote controls and supplementary lenses, projection screen, tape recorder, power cords and mirrors, and film and magnetic tapes.

Each of these reports is priced at 50 cents.

Physics of Failure in Electronics (AD 434 329), a report on a Government-sponsored symposium on physics-of-failure, is available from OTS, U.S. Department of Commerce, Washington, D.C. 20230, at a price of \$7.00. Purpose of the symposium was to discuss mainly efforts to improve the reliability of electronic devices. According to the publication, physics-of-failure research is important to any reliability program: "Based upon analytical or experimental results, anomalous behavior can be detected or analyzed. The results of analyses in turn suggest corrective measures for product or process control and techniques for prediction useful in design."

Acme Optical Printers are illustrated and described in a brochure available from Producers Service Co., 1145 N. McCadden Pl., Hollywood, Calif. 90038. The brochure also gives lease schedules and basic rental rates. Described are the Acme Triple Head Special Effects Optical Printer Model 102, Special Effects Optical Printer Model 103 and Optical Printer Model 104. Model 102, which was exhibited at the Society's 95th Technical Conference, is activated by an electronic analog computer composed of solid state elements. The electro-mechanical servo system used in conjunction with the electronic computer provides automatic follow focus. The printer can be obtained with or without aerial image and/or split beam projectors.

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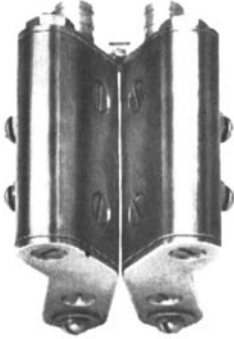


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A supplement to the **Quartz-Iodine Catalog** is available from ColorTran Industries, 630 S. Flower St., Burbank, Calif. The supplement contains information on the firm's new Mini-Lite, Back-Lite and Cyc-Strips. Also described is the ColorTran high-intensity quartz Hi-Spot light and a new line of aluminum stands.

The Radiant Audio-Visual Newsletter, April/May 1964, is available from Radiant Manufacturing Corp., 8220 N. Austin Ave., Morton Grove, Ill. Among other items the *Newsletter* describes a new screen surface called Velvet Matte White and other products and types of screens for projection of slides, filmstrips and movies. A number of illustrations are included.

Projection Lens Catalog #K 7-01 is available from Kollmorgen Corp., Northampton, Mass. Included are descriptions of new short focal length lenses (under 2 in.) and the new "Magna-Com" focal length adapter of 2.78 in. diameter. The firm's 4-in. diameter lenses have been used for 70mm projection.

A portfolio containing several illustrated brochures (20 pp in all) describing Genarco's 3,000-w slide projectors and electric slide changers is available from Genarco Inc., 97-04 Sutphin Blvd., Jamaica, N.Y. 11435. Some of the brochures explain the use of the slide projectors for rear projection in large ballrooms, for the projection of giant images on outdoor screens, and 4-ft images in displays.

A motion-picture equipment rental catalog is available from Camera Mart, Inc., 1845 Broadway, New York, N.Y. 10023. It is a pocket-size 16-page booklet listing daily and weekly rental rates for professional production, editing and projection equipment. The catalog includes a 16mm projection screen chart for answering questions concerning screen size and projection lens and also includes a directory of guild and trade unions.

The Electronic Editor, Models Mark II and Mark III, is described and illustrated in a product sheet available from Ampex Corp., Mail Stop 6-1, 401 Broadway, Redwood City, Calif. 94063. Applications and features of both models of the Electronic Editor are described and a description of the operation modes is included.

An Electronic Switching Kit for use with the Ampex Electronic Editor is illustrated and described in a two-page bulletin available from Ampex Corp., Mail Stop 6-1, 401 Broadway, Redwood City, Calif. 94063. The new Retractable Erase Head Assembly for Ampex Videotape* (*TM Ampex Corp.) is also described. Operation of the equipment and ordering procedures are explained.

Facts and Figures is an illustrated brochure printed in color available from Marconi Company Ltd., Marconi House, Chelmsford, Essex, England. The brochure presents information in four languages (English, French, Spanish and German) about Marconi products.

A 4-page illustrated brochure available from Advanced Development Corp., 1120 S. Prairie Ave., Hawthorne, Calif., describes some of the firm's custom-made power conversion equipment including inverters, converters and servo systems. The firm's products include special designs manufactured for the data-handling equipment field.

Communication Measurements Laboratory has issued an illustrated 4-page folder, Bulletin No. 300, which describes static d-c to a-c inverters and static frequency converters. It is available from CMI, Inc., 350 Leland Ave., Plainfield, N.J. Also described in the folder are variable frequency a-c power sources as well as ultra-stable power sources with voltage regulation and harmonic distortion to 0.1%.

The New Book Society of India, 6A/53 W.E.A. Pusa Road, New Delhi-5, India, has announced publication of *New Educational Directory of the World* (1st ed., 1964-65). According to the announcement, the directory contains more than 10,000 complete, classified and up-to-date addresses of the universities, colleges and educational institutions in all the countries of the world, with special reference to India. Price of the directory is \$12.00.

Studies in Spatial Aerotriangulation, by H. M. Karara, Engineering Experiment Station Technical Report No. 5, is available from Engineering Publications, 112 Civil Engineering Hall, University of Illinois, Urbana, Ill. 61803. It is priced at \$1.00. The 60-page bulletin describes the cross-bases method of aerotriangulation, a photogrammetric technique for precise small-scale mapping of unmapped areas on the earth. Aerotriangulation, or bridging, as it is sometimes termed, is defined in the bulletin as "the systematic process for providing control over an extended area by measurements on aerial photographs."

The bulletin is divided into two chapters. Chapter I, The Cross-Bases Method, sets forth the mathematical basis of the technique and describes the methods used to ascertain the attainable accuracy. Chapter II, Capabilities and Limitations of Spatial Aerotriangulation, discusses methods, uses and design criteria. In conclusion it is stated: "Aerotriangulation is a double-edged technique that has to be used with utmost care if decent results are to be expected. It is very effective, not only in reducing the amount of ground control necessary for mapping to a minimum, but also in providing ideal photogrammetric control in each stereomodel..." The bulletin contains six appendixes and an extensive bibliography. Illustrations include 57 diagrams.

Gear Ratio Orbital Elements for Tracking Artificial Earth Satellites, by W. P. Overbeck, has been issued as a 20-page bulletin by Independent Tracking Coordination Program, 824 Connecticut Ave., Washington, D.C. 20006, from whom it is available upon request. This Program is an activity of the Society of Photographic Scientists and Engineers and is carried on under a

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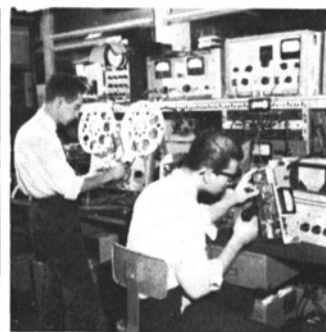
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grant from National Aeronautics and Space Administration.

The gear ratio method used for tracking satellites is so called, the bulletin states, "because it treats the components of satellite motion as though they were coupled to one another like the gears in a gear train." This method, as developed by the author, permits isolation of acceleration effects due to atmospheric drag, solar wind and radiation pressure from long-term precession effects which are treated as though coupled to one another and to mean motion "like the gears in a train." For the more stable artificial earth satellites, precise predictions are reported for periods as long as two or three years.

This particular tracking method was used by the author in 1958, but he discarded it because of seemingly erratic performance. "However," the author explains, "it was particularly useful in its application to long-term extrapolation from each observation to the next. Remembering this particular quality, I resurrected the Gear Ratio method in a recent effort to track Echo II through daytime optical observation. The results were surprisingly successful . . ."

The bulletin discusses the background of theory and experimental evidence from which gear ratio elements are derived. Applications for satellite data in the form of gear ratio elements are described, including: predictions, casual as well as meticulous tracking; derivation of long-term prediction data from official tracking agency data; and methodology for dealing with the erratic behavior of satellites of the Echo type.

Supplement 100, a 96-page supplement to the Photo-Lab-Index, has been announced by the publisher, Morgan & Morgan, Inc., 25 Main St., Hastings-on-Hudson, N.Y. 10706. The supplement contains a new data section on Scientific and Industrial Materials. Working data are included for such products as Extended Range Film, nuclear emulsions, films for instrumentation and recording, aerial films and plates, spectroscopic films and plates, materials for photomicrography, x-ray materials, infrared and ultraviolet materials, high-resolution and high-contrast materials, and special color films and processes. Firms whose products are described include Agfa; Ansco; Du Pont; Edgerton, Germeshausen & Grier; Ilford; and Eastman Kodak.

Marking the 25th year of publication, a 25th anniversary lifetime edition of Photo-Lab-Index has been published with a newly designed maroon and silver heavy-duty, waterproof loose-leaf prong binder which contains 1,500 pages of working data. It is priced at \$25. Supplements are published four times each year at an annual subscription of \$5.00 (foreign, \$6.00).

The Audio-Visual Speakers Guide, 2d ed., is published by the Industry and Business Council of National Audio-Visual Association (NAVA), 1201 Spring St., Fairfax, Va. The 40-page booklet lists persons who are available for speaking engagements on audio-visual subjects and is intended for use by interested groups such as trade and professional organizations, civic clubs, church or school groups, etc. Information from the first edition has been

brought up to date and the list of available speakers contains many new names.

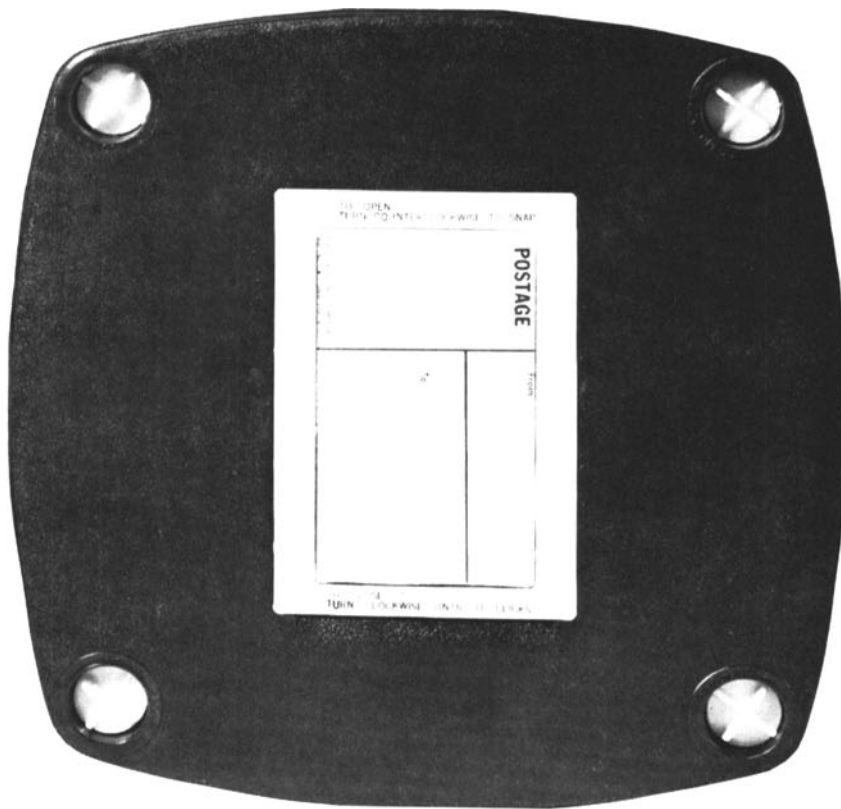
Proceedings of the Congress of the CIE (held in Vienna, Austria, June 16-26, 1963) is now available from: T. D. Wakefield, Treasurer, United States National Committee CIE, c/o Wakefield Corp., P.O. Box 195, Vermilion, Ohio, at a price of \$20.00 for a four-volume set. (The volumes are not sold separately.) Volume A (208 pp.) covers Plenary Meetings; Sources of Radiation; and Luminaires. Volume B (184 pp.) covers Lighting Technology; Volume C (150 pp.), Lighting Practice; and Lighting Education; and Volume D (120 pp.) Lighting and Traffic.

Nuclear Terms: A Brief Glossary, compiled by James D. Lyman and edited by Mr. Lyman and Benjamin S. Loeb, is one of a series entitled *Understanding the Atom*, published by U.S. Atomic Energy Commission. Single copies of this booklet and others in the series are available upon request from: USAEC, P.O. Box 62, Oak Ridge, Tenn. 37831. Others are entitled: *Nuclear Reactors; Power From Radioisotopes; Fallout From Nuclear Tests; Atomic Fuel; Careers in Atomic Energy; Accelerators; Atoms in Agriculture; Our Atomic World; Popular Books on Nuclear Science; Direct Conversion of Energy; and Neutron Activation Analysis.*

Terms defined in the *Glossary* are among the most commonly used in nuclear science and its applications. The *Glossary* is intended for the use of persons who are not specialists in the field. A reference list is included of books which go more thoroughly into the various subjects.

Planning Audio-Visual Facilities for New School Buildings (An Administrator's Check List Bulletin No. 1) is an 18-page illustrated booklet prepared by the New Hampshire Audio-Visual Association and distributed by the New Hampshire Education Association, 103 N. State St., Concord, N.H. The booklet sets forth basic design principles that can serve as a guide to institutions seeking to make optimum use of instructional materials and that can be adapted to the educational philosophy and curricula of the particular institution. The booklet includes a useful bibliography and offers a number of practical suggestions.

Teacher Education and Media 1964: A Selective Annotated Bibliography, edited by Desmond P. Wedberg and Clarice Y. Kelley, is available from American Association of Colleges for Teacher Education, 1201 Sixteenth St., N.W., Washington, D.C. 20036. (The price is 50 cents.) The 64-page bibliography developed from a survey of professional and popular literature on new media in education. It lists (1) articles, books and research reports on projected media, recorded materials, television, instructional systems (programed, multimedia, and computer), language laboratories, and plant design for educational technology; (2) basic texts and references in the area of audio-visual education; (3) information on new educational media guides and directories, and organizations and their publications that report and analyze new instructional media tech-



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AMPHICON "100"

by DALTO



HIGH-BRIGHTNESS TV
PROJECTOR FOR LARGE
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AMPHICON "200"

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THE WORLD'S MOST ACCEPTED
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USED IN THEATRES,
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HOMES, MILITARY
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38 Oak St., Norwood, N. J.
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niques; and (4) references pertinent to current teacher preparation curriculum revision.

The Acoustical Society of America, 335 E. 45 St., New York, N.Y. 10017, has announced that the fourth cumulative index of its journal will be published at the end of this year. The index will include author and subject indexes to the *Journal of the Acoustical Society of America (JASA)*; author and subject indexes to contemporary papers on acoustics published in other journals and listed in JASA; and inventor, subject, and numerical indexes to acoustical patents reviewed in JASA. There will be only one printing. Price (nonmembers) is \$20.

Twenty-one major Soviet scientific journals will be available in cover-to-cover English translations beginning with January 1965 issues from The Faraday Press, 15 Park Row, New York, N.Y. 10038. The journals are: *Nuclear Physics*; *Differential Equations*; *Theoretical and Experimental Chemistry*; *Soviet Radiophysics*; *Soviet Radio Engineering*; *Journal of Applied Mechanics and Technical Physics*; *Soviet Physics*; *Astrophysics*; *Polymer Mechanics*; *Heat and Power*; *Applied Solar Energy*; *Journal of Organic Chemistry*; *Journal of Applied Spectroscopy*; *Journal of Engineering Physics*; *Magnetic Properties of Liquid Metals*; *Chemistry of Heterocyclic Compounds*; *Chemistry of Natural Compounds*; *Electrical Engineering*; *Applied Biochemistry and Microbiology*; *Physicochemical Properties of Materials*; and *Cybernetics*. Yearly subscription rates range from about \$90 a year to about \$220 a year.

Television Tape Recorders, a report on comparison studies of helical scan videotape recorders conducted by the ETC Committee of the Colorado Association of State Institutions of Higher Education, is available from Radio-TV Section, Bureau of Audio-Visual Instruction, University of Colorado, Boulder, Colo. 80304. It is priced at \$1.00.

The study was made to assure compatibility of video-tape recorders in educational institutions in Colorado. The machines compared and evaluated are the Ampex VR 1500; Precision Instrument PI 3V; Sony PV 100 Videocorder; and Dage DV 200. On the basis of the report, specifications were drawn up for helical scan videotape recorders. These specifications are being recommended to all educational institutions in Colorado considering the purchase of helical scan equipment.

The AMPPLC Equipment Directory lists technical services and film equipments available from member companies of the Association of Motion Picture Producers and Laboratories of Canada. It is available upon request from Frank Young, AMPPLC Office, 55 York St., Toronto 1, Ont., Canada. The 40-page directory lists all types of equipments, large and small, including fog makers and wind machines.

The HTA series of wide-film processors is illustrated and described in a 4-page bulletin available upon request from Houston Fearless Corp., 11801 W. Olympic Blvd., Los Angeles, Calif. 90064. Continu-

ous processors are available for 70mm to 9½-in. wide film or paper.

An ultra-high-speed Image Converter Camera is described in a 22-page illustrated catalog (No. 0164) available upon request from STL Products, 139 Illinois St., El Segundo, Calif. The catalog includes a number of photographs of events recorded at extremely high speeds. The camera's specifications include the capability of reliable recording of low light intensities at exposures as fast as 5 one-billionths of a second. Applications described include the field of plasma physics, lasers and hyperballistic studies of an advanced nature.

The first five Super Baltar Lenses of an eight-lens series are illustrated and described in a 12-page catalog (F-169) available from Bausch & Lomb Inc., Rochester 2, N.Y. The five lenses have focal lengths of 25mm, 50mm, 3 in., 6 in. and 9 in. The series includes 50mm lenses to cover the VistaVision format; 25mm and 35mm lenses to provide maximum coverage of the 35mm silent camera aperture, as well as units designed for 70mm photography. The back focal length of each lens in the series will permit unrestricted operation of a reflex finder beam-splitter, rotating mirror or other image pick-off device.

The Equal Energy Spectrosensitometer, a device which records the spectral sensitivity of photographic film and other photosensitive materials, is described in an illustrated 4-page bulletin (No. 63-6) available from Houston Fearless Corp., 11801 W. Olympic Blvd., Los Angeles, Calif. 90064. The instrument evaluates the sensitivity of a wide variety of photosensitive materials; it will accept glass or flexible base film in all sizes from 35mm on up, color or black-and-white, and will record spectral sensitivity of phototubes and other photodetectors.

Two devices for physics research film analysis, the Scanalyzer and Scanomatic Digitizer, are illustrated and described in a 4-page brochure available from Houston Fearless Corp., 11801 W. Olympic Blvd., Los Angeles, Calif. 90064. The Scanalyzer is designed especially for rapid scanning of bubble chamber tracks, spark chamber photographs or stellar studies. With the Scanomatic Digitizer, specific tracks in bubble chamber photographs can be identified with digital data points for more complete analysis by Flying Spot Digitizers or similar automatic tracking equipment. The two instruments in combination can also be used as a simple measuring projector with 10-micron accuracy at the film plane.

A 56-page illustrated Rental Catalog of photographic equipment is available from Gordon Enterprises, 5362 N. Cahuenga Blvd., North Hollywood, Calif. Equipment listed includes all types of cameras and equipments, including photoinstrumentation cameras and equipments and aerial cameras.

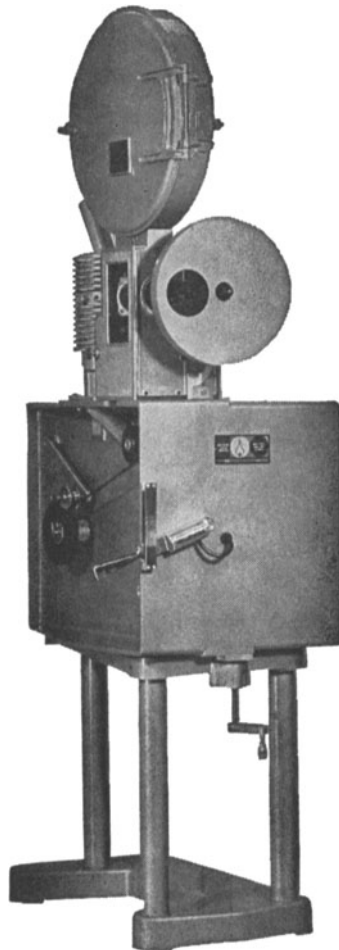
An extensive listing of zoom (vari-focal) lenses is contained in a 4-page illustrated brochure available from S.O.S. Photo-

Inspect every foot before it leaves your plant with the HFC High Speed Heavy Duty Inspection Projectors -- 16mm & 35mm models now available.

NEW

The projector is a converted front shutter Simplex with a two pin intermittent. 16mm or 35/32 film runs at a speed of 144 ft. per minute while 35mm film runs at a speed of 165 ft. per minute.

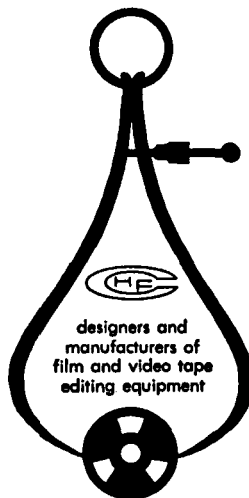
1. A variac controls the light intensity.
2. A 500 watt lamp is used for 16mm and a 1,000 watt for 35mm (a blower is used to cool the lamphouse).
3. A 2½ inch projection lens is furnished with each unit.
4. A start-stop lever controls the power to the lamp and motor.
5. The magazine and take up core takes up to 3,000 ft. of film.
6. Upper guide rollers are made to handle the film from either direction of the feed reel.
7. A free wheeling take off flange is provided in the magazine.
8. A lamp near the takeup reel permits hand inspection of the film prior to takeup.



NOUVEAU

Le projecteur contient un obturateur Simplex antérieur transformé avec deux clavettes intermittente. Les films de 16mm ou 35/32 tournent avec une vitesse de 144 pieds à la minute, tandis que les films de 35mm tournent avec une vitesse de 165 pieds à la minute.

1. Le regulateur de voltage d'intensité d'eclairage.
2. La lampe de 500 watt est nécessaire pour les films de 16mm, et de 1000 watt, pour les films de 35mm (un ventilateur est mise pour rafraichir la chambre de la lampe).
3. L'objectif de 2½ est installé.
4. La manette de mise en marche et d'arrêt controle en meme temps la lampe et le moteur.
5. La boîte de films avec noyau peut contenir 3000 pieds du films.
6. La roue supérieure est construite de manière de recevoir le film dans les deux directions, nourrie par la bobine centrale.
7. Une roue est installée pour libérer rapidement le film de la boîte.
8. La lampe se trouve pres de la bobine recepteuse, et donne toute facilité pour inspecter le film a main dans le projecteur.



HOLLYWOOD FILM COMPANY

REELS / CANS / CASES

956 N. Seward, Hollywood 38, Calif., HO 2-3284 • 122 W. Kinzie, Chicago 10, Ill., 644-1940 • 524 W. 43rd St., N.Y. 36, N.Y., LO 3-1546

NUOVO

Questi proiettori sono Simplex trasformati, otturatore al fronte, meccanismo di scatto di due punte. La velocità di proiezione in 16 o 35/32mm e di 144 piedi per minuto, e in 35mm, di 165 piedi per minuto.

1. Controllo manuale della luminosità della lampada.
2. Lampada di 500 watt per 16mm e di 1000 watt per 35mm.
3. Obiettivo di proiezione di 2½".
4. Maniglia per controllo di motore e lampada di proiezione.
5. La cassetta porta pellicola puo contenere 3000 piedi.
6. I rulli superiori di guida sono costruiti per operare con film proveniente di ambi lati della bobina svolgitrice.
7. Disco con montatura sporgente nel magazzino.
8. Una lampadina illumina la bobina avvolgitrice, permettendo l'ispezione manuale del film prima che si avvolga nel proiettore.

NUEVO

Esta máquina es un proyector simplex convertido, obturador al frente y movimiento intermitente a doble grifa. Para 16mm o 35/32mm, la velocidad fija de proyección es de 144 pies por minuto, para 35mm es de 165 pies por minuto.

1. Un reostato controla la intensidad de la lampara de proyección.
2. Para 16mm se usa una lampara de 500 watt, y una de 1000 watt para 35mm (un chorro de aire ventila las lámparas en ambos casos).
3. Cada unidad está provista de un lente de proyección de 2 pulgadas y media.
4. Una palanca de control opera el motor y la lampara simultáneamente.
5. Capacidad de proyección: rollos de hasta 3000'.
6. Los rodillos de guía superiores operan con la película en ambas direcciones.
7. La tapa de la bobina de carga es desenroscable.
8. Una lámpara ubicada junto a la bobina de toma permite la inspección manual de la película antes que se rebobine en la bobina superior del proyector.

SMPTE test films for television



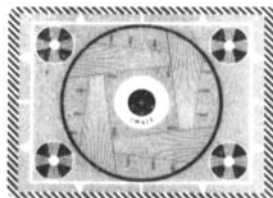
NETWORK, LOCAL, CCTV...

a test film library for
engineering and telecine

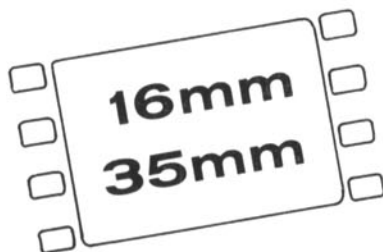
VIDEO TEST FILMS

TEST FUNCTIONS:

- alignment • resolution
- focus • linearity
- low and medium frequency response
- storage and transfer characteristics
- automatic brightness control
- qualitative picture analysis



FOR COLOR TELEVISION

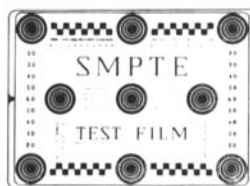


- Grey Scale—for setting-up and adjusting signal generators
- comparative and qualitative test of system's ability to reproduce color
- representative quality Technicolor and Eastman color prints

PROJECTOR PERFORMANCE

Test and Adjust:

- picture steadiness • jump and weave
- shutter timing (travel ghost)
- framing • focusing
- aperture alignment



SOUND REPRODUCTION *optical / magnetic*



Test, Adjust and Calibrate Projector

- scanning beam slit position
- multi-frequency response
- azimuth and focus of sound optical train
- signal level and balancing, output flutter
- scanning beam illumination

FOR THE SCREENING ROOM

Jiffy Test Film: a time saving quick evaluation of 16mm sound projector system performance

for further information
and for a complete listing of test films, write to Department TF

Society of Motion Picture and Television Engineers

9 EAST 41st ST., NEW YORK, N.Y. 10017

Cine-Optics, Inc., 387 Park Ave. South, New York, N.Y. 10016. The brochure describes zoom lenses for 16mm, 35mm, TV image-orthicon and TV vidicon cameras and includes price information.

A series of illustrated leaflets called *Technical* describing various types of Osram High-Pressure Pure Xenon Lamps is available from Macbeth Sales Corp., P.O. Box 950, Newburgh, N.Y. Manufactured in Germany by the Osram GmbH, the lamps are discharge lamps for d-c operation designed for use in optical devices. Designed to simulate natural daylight the lamps have a color temperature of 6000 K. The Macbeth Corp. is exclusive U.S. representative for the lamps.

An illustrated brochure on *Advanced Optical Systems* is available upon request from Northrop Nortronics, Systems Support Dept., 500 E. Orangethorpe Ave., Anaheim, Calif. The brochure describes various types of precision optics used in military systems.

The *Maier-Hancock Portable Hot Splicer* is described and illustrated in a leaflet available from S.O.S. Photo-Cine-Optics, 387 Park Ave., South, New York, N.Y. 10016. Diagrams illustrate operation of the machine and compare its results with those of other types of splicers.

Electromagnetic and physical properties of magnetic tapes are described in a six-page brochure (RS-64-18) available from Reeves Soundcraft, Great Pasture Rd., Danbury, Conn. Properties and complete specifications are given for Reeves Mylar and cellulose acetate base tapes for sound recording.

Onan electric generating plants are illustrated and described in an 8-page catalog (Catalog F-205) available upon request from Onan Division, Studebaker Corp., 2515 University Ave. S.E., Minneapolis, Minn. 55414. Generator sets described include both those used for primary power and for standby or emergency power.

Detailed descriptions and illustrations of products including the Rapidata Processor, the Model 662 Animation Camera System and medical cinefluorographic cameras for diagnostic x-ray recording are included in a plastic covered ringbound brochure and other literature available from Photomechanisms Inc., 15 Stepar Place, Huntington Station, L.I., N.Y. The brochure also contains an illustrated account of the history of the firm and photographs and brief biographies of staff members.

Epic Data Sheet No. 25, available from Ehrenreich Photo Optical Industries of California, Inc., Military and Special Products Div., 701 Welch Rd., Suite 303, Palo Alto, Calif., illustrates and describes the Model 2 Remote Reflex Vidicon Film System, an Americanized model of Nikon's video remote control system. The photographic system incorporates an 800-line vidicon that views the event to be recorded through the film camera taking lens system.