

# NEW PUBLICATIONS

## Book Reviews

**Moments of Vision: The Stroboscopic Revolution in Photography.** By Harold Edgerton and James R. Killian, Jr. Published (1979) by the MIT Press, Massachusetts Institute of Technology, Cambridge, MA 02142. 178 pp. Illus. 11 × 9 in. Price \$20.

This is no ordinary picture book; the authors could have entitled it *Moments of Vision — Hours of Visual Entertainment*. It is certain to delight anyone who enjoys reading books — and also those who seldom read at all. It is a book worthy of being studied in depth or simply perused for pure pleasure. Its fascinating photographs document a lifetime of achievements by an extraordinary man, who can variously be described as scientist, engineer, inventor, educator, industrialist, photographer, explorer—but above all, as a man admired for his rare ability to communicate with others of all ages and backgrounds. In his introduction to the text, James Killian, Jr., describes Harold Edgerton as “a world

famous scientist-engineer whose greatest invention is himself.” It is a book about stroboscopic photography from its earliest days to the present and the variety of subjects these techniques have been applied to, including ballistics, Detonics, biology, athletics, the arts, liquid drops and splashes, archeology, oceanography, and other fields of general interest. Between its two hard covers are more than 170 picture-packed pages destined to be turned often whether the book finds its place on a library shelf or on a living room coffee table. Edgerton’s contributions to both science and photography are virtually without parallel. He has won numerous awards and accolades for his work in each field, including the National Medal of Science “for vision and creativity in pioneering the field of stroboscopic photography and for his many inventions of instruments for exploring the great depths of the ocean.” The text and photographs in *Moments of Vision* offer clear testimony that scientific experimentation and photographic craftsmanship are closely related

arts. *Moments of Vision* is recommended reading for anyone who is serious about photography and especially those who have application for stroboscopic techniques in their work. — *William G. Hyzer*

**Oscilloscopes.** By Stan Prentiss. Published (1981) by Reston Publishing Company, Inc., Reston, VA 22090. 162 pp. Illus. Diagrams. 6 × 9 in. Price \$16.95.

This book starts out with a brief treatment of what an oscilloscope is. Then, in much greater detail, it delves into what the instrument is capable of doing. A strong point of the book is its emphasis on how the basic instrument and its various modifications can be used to solve many problems in troubleshooting, repair, and design work. Topics covered include spectrum analyzers, logic analyzers, storage and sampling oscilloscopes, time-domain reflectometry, and waveform analysis.

Artwork and data are drawn from a number of manufacturers. There are about 155 figures, many of them with several



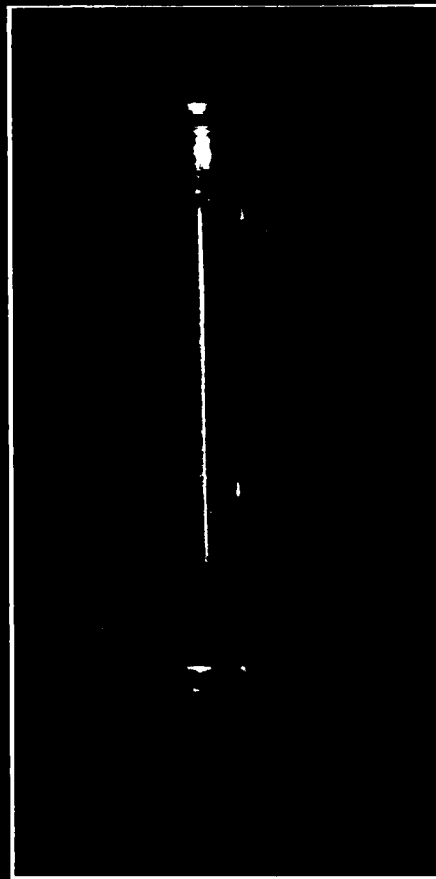
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parts each (so that the publisher's claim of "over 200 illustrations" must refer to the number of pieces of artwork).

The author tends to skirt over some basic definitions. (For example, what, exactly, is a vectorscope or time-domain reflectometry?) However, for readers already acquainted with the instruments and measurements described, the book presents a wealth of detail on oscilloscope techniques and how they can be applied to the solution of a wide variety of problems encountered both in the lab and in the field.

Of particular interest to television engineers will be the chapter "Investigating Video Terminals and Cassettes, Including the Art of Using Vectorscopes," with sections on chroma, the vector pattern, and color bar generators.

An index and the division of chapters into numerous sections helps the reader to locate particular objects.

Although the text contains a number of minor inconsistencies in abbreviations and word spacing, it is otherwise clear and understandable. A small number of typographical errors were noted, e.g. "gated" is consistently misspelled "gaited," but these do not interfere with the clarity.

The book jacket proclaims the book to be "an indispensable reference for solving your design and troubleshooting problems." This reviewer feels that the book is indeed quite useful for dealing with such problems. — *Arthur Biderman*

## Book Reports

**Contributions to Color Science.** By Deane B. Judd. Edited by David L. MacAdam. Published (1979) by the National Bureau of Standards, Department of Commerce, Washington, DC 20234. 746 pp. Illus. Diagrams. Tables.  $7\frac{1}{2} \times 10$  in. Softbound. Price \$14.

This book is a collection of 57 papers written by Deane B. Judd, a staff member of the National Bureau of Standards from 1926 to 1969, and an internationally recognized authority on color. The contents of this collection include some of the major contributions of Dr. Judd to such areas as the measurement and specification of color, spectrophotometry, color appearance and spacing and color vision. Each paper is preceded by an introduction which provides general commentary on the article and explains the terminology used. Some introductions also direct the reader to related articles in the collection and point out significant developments, such as international agreements, which were based on Judd's work. A list of the more than 200 articles written by Dr. Judd is included in an appendix.

**Complex Digital Control Systems.** By Guthikonda V. Rao. Published (1979) by Van Nostrand Reinhold, 135 W. 50 St., New York, NY 10020. 528 pp. 170 illus.  $8\frac{1}{2} \times 11$  in. Price \$36.50.

The book provides an overview of the entire field of digital control systems and their practical applications, including a comprehensive analysis of a control system commonly used in color television transmission. Both electronic and control engineering aspects are illustrated with block diagrams.

Examples include quad and helical scan videotape recorders and videodisks. Background information on compatible color television technology is included. Simplified mathematical models offer readers rapid and accurate understanding of the application of theoretical considerations. Techniques of analysis and synthesis described in the book include both analog and digital frequency response, statistical design and state-space. The book predicts the far-reaching effects that large-scale investment and eventual mass production will have in many areas of engineering, technology and business.

**Design of Continuous and Digital Electronic Systems.** By Gordon J. A. Bird. Published (1980) by McGraw-Hill Book Co., 1221 Avenue of the Americas, New York, NY 10020. 396 pp. Illus.  $7\frac{1}{2} \times 10$  in. Price \$39.50.

The book focuses on methods for solving problems in electronic engineering through the use of transform theory and the concept of poles and zeros. Three broad aspects of the field are covered: basic theory and filter

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applications, feedback theory and applications, and digital theory and applications. Useful methods and procedures that can be applied directly to on-the-job problems are discussed. Numerous illustrations of circuits and circuit characteristics are included.

Some of the topics explored in detail are Fourier and Laplace transforms, the time and frequency domain characteristics of filters, the root locus technique, active filters, AGC systems, phase locked loops, digital filtering and spectral analysis, z transforms, and computer simulation.

**Optical Fibre Communication.** By the technical staff of CSELT (Centro Studi Laboratori Telecomunicazioni, Turin, Italy). Published (1981) by McGraw-Hill, 1221 Avenue of the Americas, New York, NY 10020. 896 pp. 519 illus. 6 x 9 in. Price \$39.50.

An important resource, likely to become a classic work of reference, the book provides in-depth coverage on the design, production, installation and operation of optical fiber systems. The book comprehensively covers the transmission medium, sources and detectors, cables and connectors, systems and integrated optics. It discusses each aspect from the theoretical, experimental and technological viewpoints. Each section of the book introduces the basic concepts required and then progresses to detailed discussions of the latest advances and discoveries in the field.

Some of the many topics explored are propagation characteristics of the transmission medium, fiber preparation and handling, lasers, photodetectors, mechanical characteristics of cables and connectors, analog and digital communications, system modeling, electro-optical sources, system considerations, integrated optics devices and future trends in integrated optics.

**Sound Recording** (2nd. ed.). By John Eargle. Published (1980) by Van Nostrand Reinhold, 135 W. 50 St., New York, NY 10020. 368 pp. 226 illus. 6 x 9 in. Price \$21.95.

The second edition updates its predecessor with thorough coverage of devices, systems and methods currently used in recording technology. (The first edition of this book was reviewed in the May 1977 issue of the *JOURNAL*.) The second edition contains new chapters on digital recording and building a low-cost studio and covers a wide range of signal processors.

Beginning with comprehensive background information on acoustics, *Sound Recording* analyzes in detail the behavior of sound under a wide variety of conditions. It explains important aspects of psychoacoustics such as loudness contours, subjective attributes of recording environments and analysis of phantom images in stereo. Also included are details of analog magnetic recording and the mechanical/electronic aspects of tape recorder. The

author explains the full range of signal processing devices showing how they work and why they are used. He also provides step-by-step analyses of each block of the recording and playback systems in digital recording.

**The Devil's DP Dictionary** by Stan Kelly-Bootle, a book modeled on Ambrose Bierce's *The Devil's Dictionary*, aims at holding computer terminology up to laughter and ridicule. Kelly-Bootle redefines *computer science* as "a study akin to numerology and astrology, lacking the precision of the former and the success of the latter." (The author is a computer consultant with 26 years experience in commercial and academic computer science.)

Other of Kelly-Bootle's redefinitions are: *random file*, a place where things can get lost in any sequence; *subroutine*, any trivial overdocumented program written by your immediate superior; *artificial intelligence*, the area researched by the artificial intelligentsia; *serial*, being or pertaining to just one damned thing after another; *accuracy*, an absence of errors. "The computer offers both speed and accuracy, but the greatest of these is accuracy." — Anon. doctoral thesis on automation, 1980.

As Kelly-Bootle says, "The targets for satirical onslaught have been carefully chosen to offend everyone in the computer trade."

The book is available from the publisher, McGraw-Hill Book Company, 1221 Ave-

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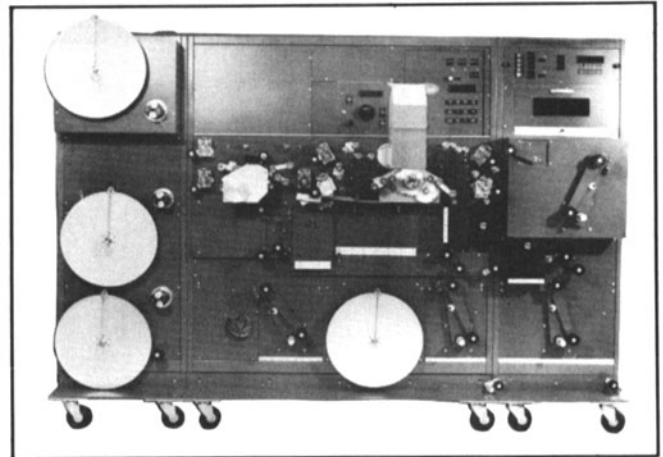
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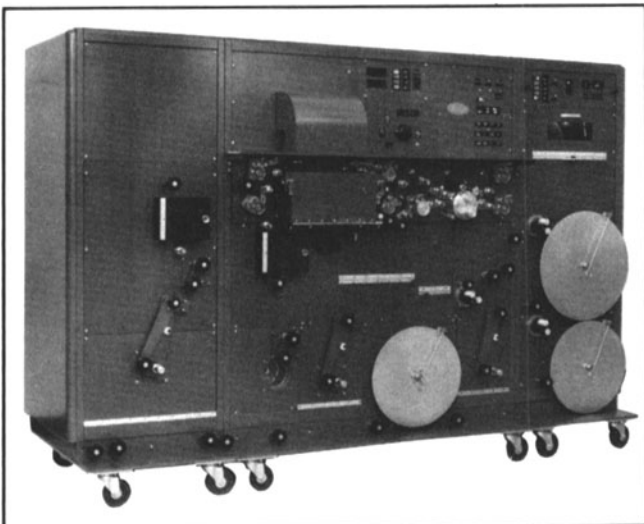
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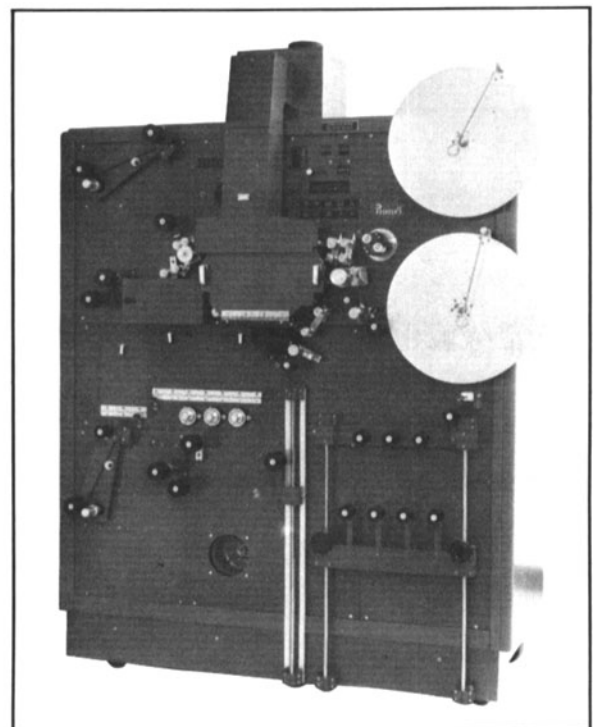
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In addition, the acquisition of American Data by Central Dynamics doubles the company's manufacturing capacity with plants in the U.S. and Canada. N.V. Philips will concentrate on design and manufacture of advanced cameras, transmitters and equipment for the digital television decade.

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nue of the Americas, New York, NY 10020, at a price of \$7.50. It contains 141 pages and is softbound.

**Audiovisual Market Place 1981**, 11th ed., is available from R. R. Bowker Co., 1180 Avenue of the Americas, New York, NY 10036, at a price of \$32.50. Twenty-three sections are grouped under three broad divisions, Audiovisual Software, Audiovisual Hardware, and Reference. Listings within each section contain firm names, addresses and telephone numbers, key personnel and product lines, services, activities and other related details. Under AV Software, producers, distributors and production companies are listed and classified geographically. All production services are listed and the section also includes listings of public radio and television program libraries and AV cataloging services. The AV Hardware section lists AV equipment manufacturers and distributors, classified by product line, and dealers, classified geographically. The Reference section includes descriptions of reference books and directories, periodicals and trade journals, listings of funding sources and awards and festivals. The book contains 468 pages, measures 8½ × 11 in and is paperbound.

**The Pro-Audio Yearbook**, a compilation of information and photographs dedicated to every aspect of professional recording and

sound broadcasting, is available from the publisher, Link House Magazines (Croydon) Ltd., Link House, Dingwall Ave., Croydon CR9 2TA, England, at a price of \$49.50 (plus \$5 postage and packing). Comprehensive indexing allows direct access to every piece of information in the *Yearbook*. The Address Index includes phone and telex numbers and principal contact for over 2,500 companies in the pro-audio and related industries in 70 countries throughout the world. The *Yearbook* contains 624 pages with 7,000 separate entries and more than 600 photographs.

#### **IES Lighting Handbook**

Edited by John E. Kaufman. Published by the Illuminating Engineering Society of North America, 345 East 45th Street, New York, N.Y., 10017. Two volumes: each volume 500 pages. Hardcover. Price: \$50.00 (set of both volumes \$90.00); IES Members \$40.00 (set of both volumes \$72.00).

The Illuminating Engineering Society of North America, celebrating its 75th Anniversary this year, is proud to announce the publication of the 1981 *IES Lighting Handbook* — Reference and Application Volumes — replacing the 5th Edition published in 1972.

Since its appearance in 1949, the *IES Lighting Handbook* has become known as "the standard lighting guide," satisfying

those wanting in-depth lighting information or applications *and* those curious about the nature of lighting. To accommodate the rapid changes in lighting technology over the years and the expanding range of research and application activities, the *Handbook* is now in two volumes: A Reference Volume and an Application Volume. The two books can be used independently or as a set (with comprehensive indexes and cross-references).

The new handbook has been metricated and completely revised to incorporate the most recent lighting developments, illumination levels, and current approaches to energy management and lighting design. All the fine features that have earned the Handbook's reputation have been retained and expanded, such as outstanding tables and illustrations, and the essential "Dictionary of Lighting Terms."

The Illuminating Engineering Society was founded in 1906 to establish scientific lighting recommendations and to disseminate this information to all interested parties. It is the recognized authority on lighting in North America.

#### **The Communicator's Catalog From Kodak**

(Kodak publication S-4), a guide to Kodak resource materials for audiovisual users, professional communicators or hobbyists, is available upon request from Eastman Kodak Co., 343 State St., Dept. 412L, Rochester, NY 14650. From motion pic-

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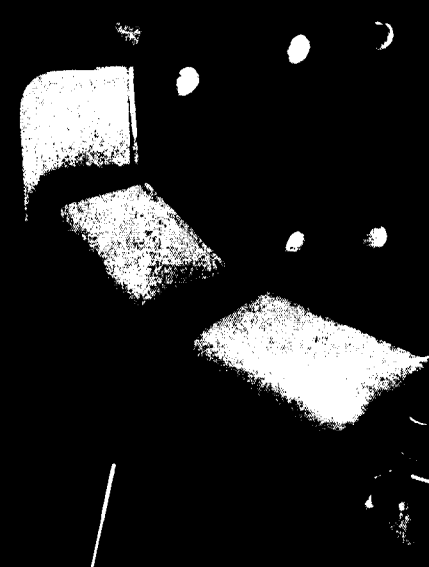
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Kodak's most popular selections—the "Basic 2 X 2-in Slide Packet," the "Basic Filmmakers Packet," the "Film in Television Packet," and the new "Multi-Image Production Packet" — all hard cover, 2-in-thick slip cases containing a complete library of Kodak literature available on each subject — are also available through the new catalog.

**Satellite Communications for America's Businesses** is a booklet explaining the dedicated private line services via satellite available from RCA American Communications, Inc. The booklet contains answers to the "34 most frequently asked questions." It describes in layman's terms how firms of all sizes and scope are utilizing the RCA Satcom system to lower communications costs. The booklet is available upon request from RCA American Commercial Services, 400 College Road East, Princeton, NJ 08540.

**The Home Video Yearbook 1981-82** will be published September 1981 by Knowledge Industry Publications, Inc., 701

Westchester Ave., White Plains, NY 10604, according to a recent announcement. The 300-page volume will provide up-to-date statistics on sales, revenues and growth. It is designed to provide business executives with accurate information and incisive analysis. The book provides detailed information on such subjects as home video indicators, mergers and acquisitions, cable television, advertising on cable, satellites, videodisks, pre-recorded programming and many others. The price will be about \$75.

A data sheet describing the 4400 series of closed circuit television cameras is available from Cohu, Inc., Electronics Div., P.O. Box 623, San Diego, CA 92112. The cameras have a 600,000 to 1 light range in fully automatic operation and resolve 10 shades of gray with 700 lines of resolution.

**Video control and support products** are described in a catalog available from QuickSet, Inc., 3650 Woodhead Dr., Northbrook, IL 60062. Products listed include camera scanners, pan/tilts and antenna positioners as well as lens controls, video switchers and a complete selection of camera housings for indoor and outdoor installations.

**Optics Guide Product and Price List 1981** is an illustrated brochure containing a good deal of information about achromats and other optical items. The brochure is available upon request from Melles Griot, 1770 Kettering St., Irvine, CA 92714. Melles Griot recently acquired the Ilex Optical Co. in Rochester, N.Y., a firm that has been in the multi-element lens business since 1911.

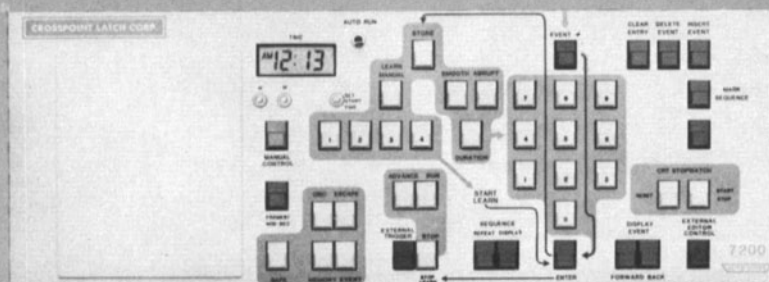
### Booklets and Brochures

**The 1981-82 Audio-Visual Equipment Directory** is published by the National Audio-Visual Association, 3150 Spring St. Fairfax, VA 22031. It contains 500 pages listing more than 2,000 currently available audiovisual and video equipment items. The new edition lists 40 items more than were listed in the 1980-81 edition. It contains 1,500 photographs and provides specifications — price, model, weight, capacity, accessories and technical details — on all listed items.

A new category is included for computer-generated graphic equipment. The *Directory* also contains a special article by K. Tsunoda, President of Sony Video Products, and completely revised and expanded sections listing video equipment. Other features include an enlarged section on microcomputers for audiovisual applications, special charts for screen size and for film and tape running times, updated listings of NAVA members and trade names, and an expanded glossary of audi-

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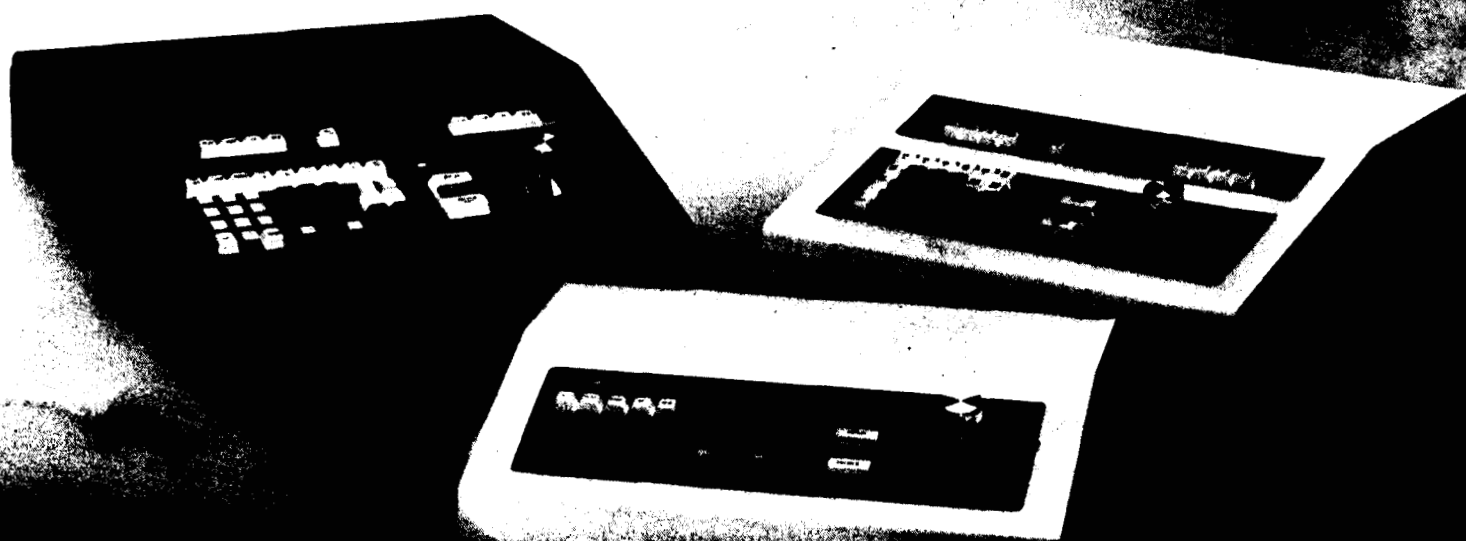
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The ECS-100 Series edit controllers are perfect for

those needing more sophisticated editing capability. Selected models offer A/B rolls, auto conforming, and/or list management in either Control Track or SMPTE/EBU\* time code.

#### **FULL LIST MANAGEMENT**

If you need maximum editing power and flexibility, look to our new ECS-104 List Management Editing System. For features/functions/price, it's unbeatable. Convergence is the best editing investment you'll ever make. Write or call today for more information.

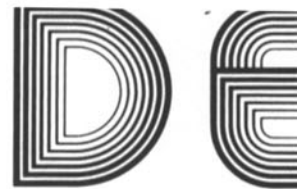
**CONVERGENCE  
CORPORATION**

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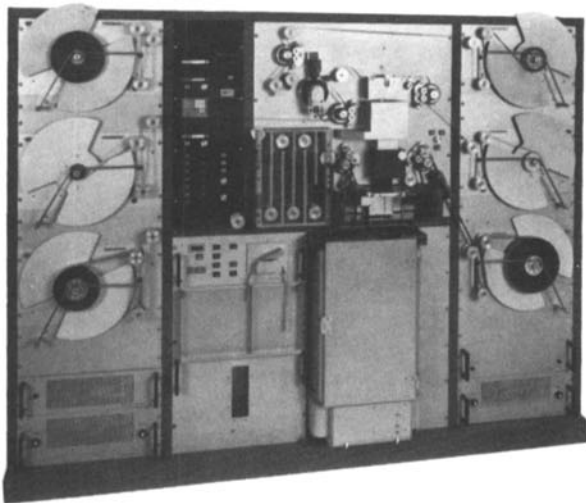
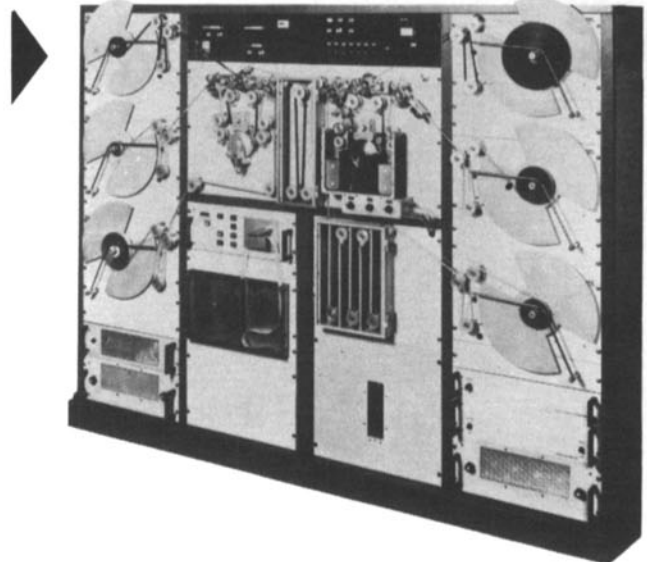
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Debrie

## TCI—"The Academy Award-winning printer"

Our TCI additive contact printer is provided with a system of total immersion which eliminates all risk of problems from air bubbles. This system uses liquid circulation in the tank at the aperture level and a liquid spray between the films which removes any bubbles that may take form. In addition, a **sealed** tank is used with transparent sides which enables visual inspection of the interior of the immersion tank. Threading is accomplished by an ingenious access mechanism at the input and output roller assemblies. Code lighting is provided using fiber optic bundles. Film drying is ensured by special squeegees and the reuse of the warm air exhaust from the picture lamphouse. Frame count cueing with microprocessor storage is provided. This cueing system utilizes an alpha-numeric data display panel which allows unprecedented operator interaction with the printing machine—in 5 languages!

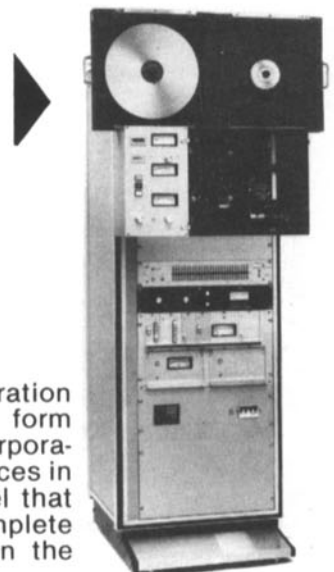


## TAI—Full immersion optical reduction printer.

The TAI printer features optical reduction (35mm to 16mm, for example) using the full immersion technique. Both negative and positive are driven by double drive claws and the highest precision registration pin system is used to stabilize the films during exposure. Between these mechanisms, a specially treated optical block ensures the very highest quality reduction of image. Resolution is excellent and steadiness is unsurpassed. The 35mm mechanism is fully immersed and is therefore provided with fully automatic lubrication. Sound is printed by contact which guarantees superior steadiness and assures top quality. Speeds to 110 FPM are standard, with bidirectional printing available on some models. Frame count cueing is provided with microprocessor storage of tape data.

## ESO—16/35mm Sound Recording Camera

The ESO Camera provides direct optical sound recording or magnetic sound transfer. It permits the highest quality recording of 16mm positive or negative tracks and 35mm negative tracks by using an advanced ultra-precise optical system. An adjustable stroboscopic viewfinder allows the controlling of modulation while the machine is stopped. This facilitates regulation of the system through fixed frequencies. Modulation may be tested audibly during recording by use of a photocell pickup provided behind the film. The camera is equipped with two interchangeable magazines for rapid loading and mounting. High technology electronic modules provide superior control and highly accurate adjustment of all recording parameters.



- Andre Debrie of Paris and Lab Methods Corporation have merged technology and marketing to form Debrie Corporation of America (a California corporation)—headquartered in Los Angeles, with offices in Chicago, New York, and Mexico City. We feel that our combined efforts will provide the most complete product line and service system available in the world today.

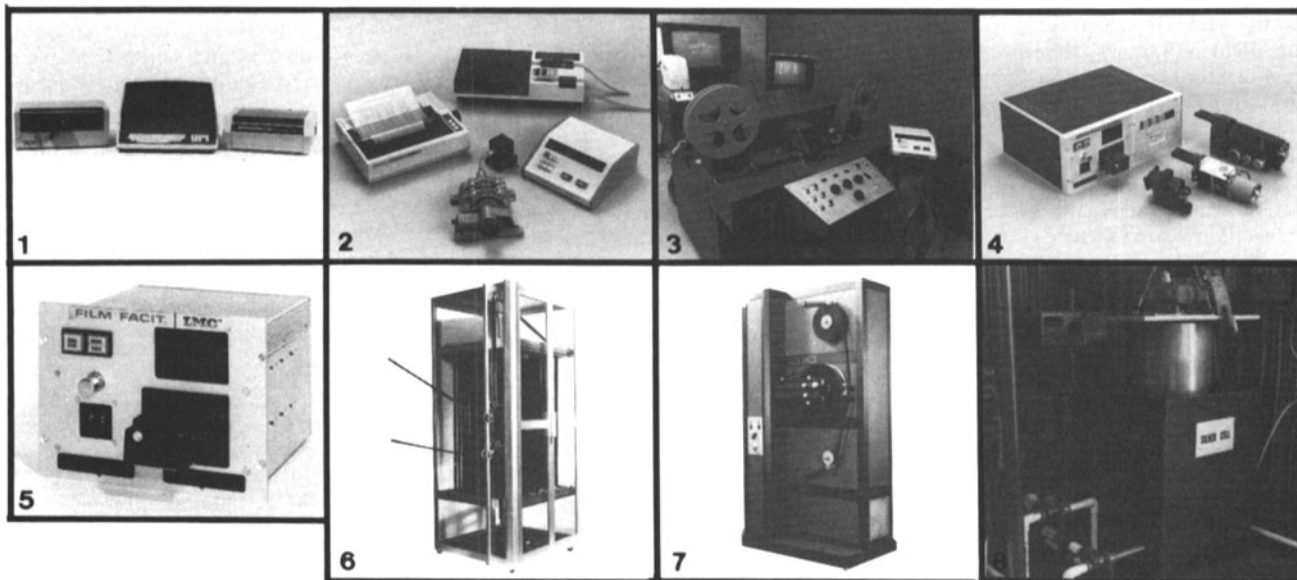
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Corporation of AMERICA

***“Laboratory equipment designed by laboratory people.”***



**1. Film Facit Paper Tape Programmer.** High technology paper tape editor/punch system—uses video terminal, dual floppy discs, reader-punch, and high speed printer—custom programming available.

**2. Film Facit Synchronizer Data Collection System.** Automatically provides FCC tapes at the film synchronizer—up to 6 stations can share a common reader-punch and optional hard copy printer—handles A-B-C-D-E & F rolls, if needed.

**3. Film Facit Color Analyzer Data Collection System.** World's most versatile analyzer data pickup system will be introduced in 1981—uses CRT for unprecedented data handling and review, up to 6 analyzers can share a common reader-punch and optional hard copy printer.

**4. Film Facit FCC System.** Complete stand-alone bidirectional system—can be added to printers or can replace all old stlye systems—for panel, optical, or pedestal printers—stores up to 1500 scenes in micro-processor memory—CAN FIRE BELL & HOWELL, PETERSON, OR DEBRIE LIGHT VALVES—available late 1981.

**5. Film Facit FCC Reader Head.** Low cost computerized replacement for Tally reader head—automatic loops setting and heads or tails printing—FCC in one hour, all tapes and formats.

**6. Film Facit Auto Demand Loop Cabinets.** All formats and sizes—revolutionary control system allows instant acceleration, each shaft individually driven by a PMI pancake motor, speeds to 1000 FPM.

**7. Film Facit Inspection Projector.** No sprockets—can be used for on-line inspection of all film formats—also available in motorized upright model.

**8. Silver Max Silver Recovery System.** High recovery capacity (20 oz. hr.) with controllable power supply—innovative construction design allows easy access for silver removal—no drive belts or electrical brushes to wear out—reinforced fiberglass tank.

**9. Film Facit Auto Demand Film Transport Drive Components.** Patented line of positive drive components—unique serrated disc is self cleaning and creates superior friction at the roller—used throughout the world on our loop cabinets and film processors, ideal for ECP-II conversions.

LAB METHODS CORPORATION (LMC) is a high-technology company engaged in motion picture and photographic laboratory support. We design, install, staff, train employees, and manage laboratories. We customize printers, processors and other equipment. We manufacture film loop cabinets, motion picture inspection projectors, processor monitoring systems, computerized tape preparation/control systems, and demand drive components for film processor conversions.

We do research and development. LMC also buys and sells used equipment.

All key employees of LMC have had direct laboratory experience from past associations with one or more major film labs in the industry. This expertise is unique in solving your needs as it usually is not found with an equipment manufacturer.

We will be happy to work with you on any lab or equipment requirements.

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ovisual terms. The *Directory* is priced at \$21 if payment accompanies the order; \$24 if billed; and \$32.50 for Non-NAVA-member firms commercially engaged in the audiovisual industry.

**The American National Standard Nomenclature and Definitions for Illuminating Engineering** is available from the Illuminating Society of North America, 345 E. 47 St., New York, NY 10017, at a price of \$13.50 (\$8.00 for IES members). The 48-page, 8 X 11-in publication is divided into sections covering electromagnetic radiation; light; color; visual terms; light sources; surface and media for light control; testing procedures; lighting calculations; interior lighting applications; and exterior lighting applications and non-lighting applications. Seven pages of tables and references, an index, appendices and numerous figures are included.

**Matthey Printed Products** has announced a video and pulse delay line catalog containing details of video and pulse delay lines for use where precise timing of signals is required in color television broadcasting studios, outside broadcast units and CCTV installations. Matthey video delay lines are compatible with PAL, NTSC and SECAM systems. The pulse delay lines have rise times compatible with CCIR recommendation and minimum overshoot. New among the printed circuit modules is

the Series 270S. These delay lines are designed to give less amplitude ripple and a loss which increases smoothly with frequency for applications where the customer must provide his own amplitude equalization. Copies of the catalog are available from Matthey's United States representative, Television Equipment Associates, Bourbon Street, Box 260, South Salem, NY 10590.

**The Mach One Editing System** is described in a 6-page color brochure available from Fernseh Inc., P.O. Box 15068. The system includes cluster event software, providing the ability to preview or record a complex series of transitions in one operation. Features include sync mode, an exclusive Mach One feature, also known as "on-the-fly" editing, which provides a means of real-time switching from two or more play sources. The brochure also describes the types of VTRs that can be used with the Mach One system.

**Products for Communication Arts**, a 26-page brochure listing nearly 250 products for the communication arts market, is available from 3M, Dept. 1899/3M, P.O. Box 4039, St. Paul MN 55144. The products are listed under four categories, Visual Arts and A/V Communications; Packaging and Printing Processes; Advertisers and Marketers; and Broadcasting, Recording and Commercial Pictures.

A complete reference guide to Sony's training tape library is contained in a catalog available upon request from Sony Video Communications, Tape Production Department, 700 West Artesia Blvd., Compton, CA 90220. The catalog is divided into three categories — Basic Fundamentals, Technical Training on Specific Products and Special Programs. The section on Basic Fundamentals describes courses on a wide variety of video-related subjects. The Technical Training category explains the Sony tapes dealing with specific video products. Special Programs tapes for dealers and salespeople are released as new equipment is introduced.

**Specification sheets for Signal Source 24**, RGB color TV test pattern generator, are available from Visual Information Institute, Inc., P.O. Box 33, Xenia, OH 45385. Signal Source 24 is designed to produce the reference patterns required for accurate adjustment of RGB color display device scan linearity and size, proportion, color fidelity and convergence.

**Videomedia**, 250 North Wolfe Rd., Sunnyvale, CA 94086, has announced availability of a fully illustrated 96-page catalog describing the services and full range of video equipment offered by the company. More than 30 different brands of video equipment are listed including JVC, Panasonic, Hitachi, Denshi and Sony.

# Modernizing your theatre projection system can be as easy as an ISCO lens



A high quality picture image on your theatre screen is simply getting the most light to the screen with good sharpness and contrast. The three major factors that affect light and quality are the projector, screen reflectivity ... **and** the projection lens.

The new high-efficiency ISCO Cinelux-ULTRA multi-coated lenses deliver as much as 35% to 100% more light transmission than old fashioned lenses! Sharpness and contrast are vastly improved.

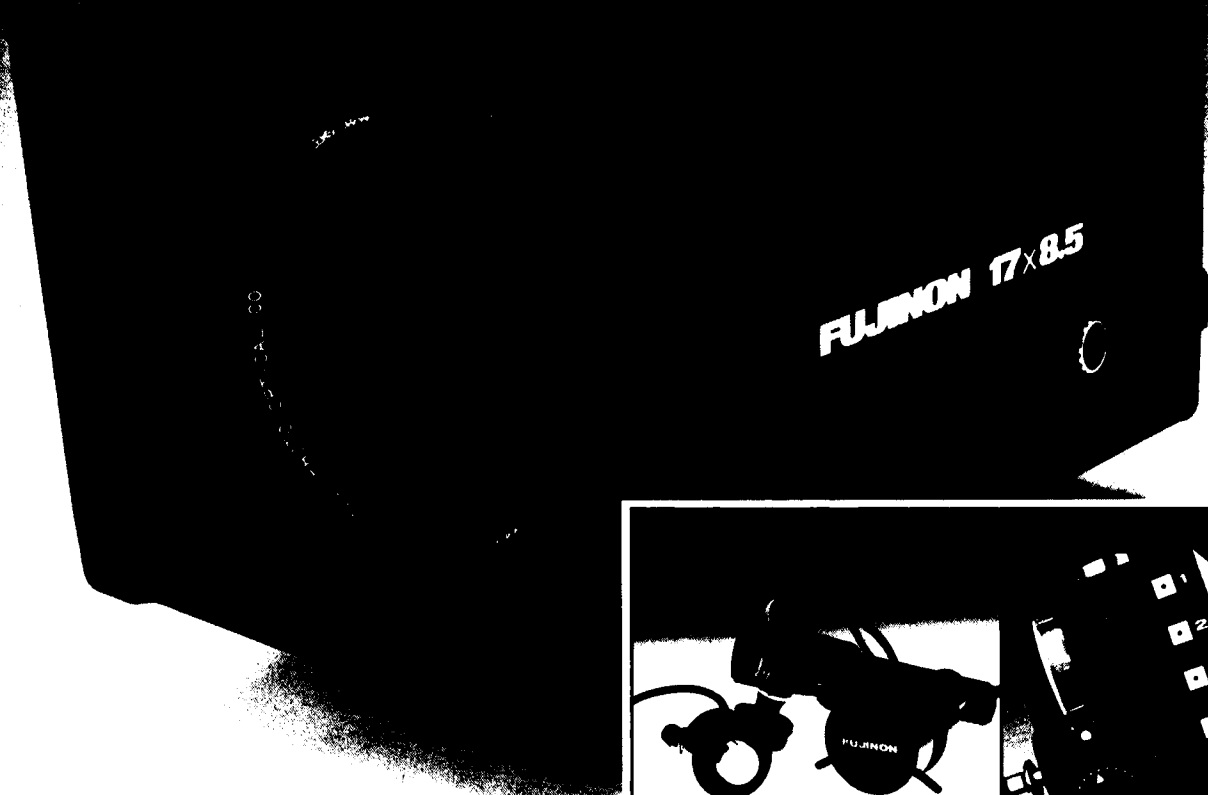
A new light-efficient ISCO lens may be all you need to dramatically improve your present picture quality. It's a very small investment.

If you think we're promising more than we can deliver, simply test our lens on your existing equipment and then make your own decision. Cinelux-ULTRA is the only new projection lens ever to receive a Technical Achievement Award from the Academy of Motion Picture Arts & Sciences. Better picture quality means bigger crowds at your boxoffice.

## Cinelux-Ultra

THEATRE PROJECTION LENSES BY ISCO

# The new 17x8.5 high speed EFP zoom from FUJINON.



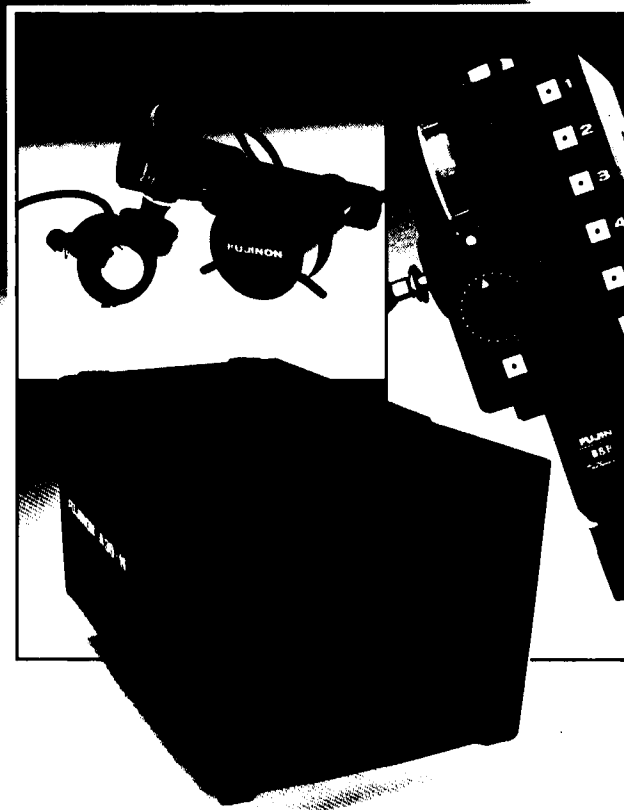
## Field range, studio quality ...2/3-inch format never looked so great.

Starting now, your 2/3-inch format cameras have enhanced performance and flexibility. Fujinon's 17x8.5 zoom delivers the sharpest, highest contrast image the format has ever known. From a wide angle 8.5mm, the lens maintains its F/1.5 aperture out to 80mm. At the full tele 144.5mm focal length, you still get F/2.0 speed.

When more range is needed, activate the built-in 2X extender. When more control is required, use Fujinon's new optional variable rate zoom and focus demands, or the microprocessor controlled programmable shot boxes.

**For maximum range, Fujinon's 30x11 EFP zoom leads the field.** No other lens for 2/3-inch format will get in as close. With its built-in 2X range extender, choose any focal length from 11 out 660mm (equal to 1000mm on 1 1/4-inch format). And when lighting isn't everything you want, you still get the image brightness and contrast you need—the F/1.6 maximum aperture remains flat out to 20 times.

Production flexibility, creative freedom, outstanding performance, and time proven dependability. All this plus the most complete range of accessories are yours with Fujinon. Now, more than ever... the world sees itself more clearly through the eyes of Fujinon.



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