

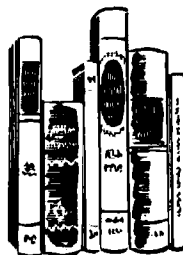
the differences in efficiency and latitude were related. An explanation was offered for the differences between the model and actual film efficiencies.—R. Rubenstein, *Secretary-Treasurer*, Boston.

ROCHESTER, Feb. 12—Robert W. Barnes, Director, Reynolds Audiovisual Dept., Rochester Library System, described the loan facilities of the Rochester Public Library. Dr. Keith E. Whitmore, Senior Research Associate, Research Labs, Eastman Kodak Co., showed films prepared by elementary school children which were very successful in improving their reading ability, compared with control groups. Richard K. Schafer, Product Specialist, Eastman Kodak Co., showed films which demonstrated the improvements in grain and sharpness of Super-8 films over the past few years.—R. A. Morris, *Secretary-Treasurer*, Rochester.

TORONTO, Feb. 19—Dr. Frank Kent, Eastman Kodak presented a paper on the new Eastman Ekta Commercial Film. The paper was being heard by part of the audience for a second time and reaction was not so active as might be anticipated. The paper was well presented and very useful. I. Switzer, MacLean-Hunter Cable TV Ltd., presented a paper on "Picture Degradation Problems in CATV," and was the first of its type given in our section. It received enthusiastic interest and questioning. Switzer was a particularly enjoyable speaker and evoked a surprising participation from the audience.—S. F. Quinn *Secretary-Treasurer*, Toronto.

CAPE KENNEDY, Feb. 21—Dimitri Rebikoff, Chairman of the Board, Rebikoff Underwater Products, Melbourne, FL, opened the program with a brief history of Underwater Photography during the past quarter century. He went on to predict the potential of Oceanography in Florida, particularly the Cape Kennedy area. Rebikoff urged scientific and research corporations to relocate in the Cape area because of the availability of displaced scientists, engineers, and skilled technicians; brought about by the recent and drastic reductions in Aerospace Technology and research at Cape Kennedy. The science of Oceanography is dependent on the availability of scientific and technical knowledge; therefore it is imperative that Oceanographic Industries avail themselves of this abundance of scientific knowledge in the Cape area. A 20 minute film produced by Mr. Rebikoff, demonstrated various underwater photographic equipments and how they are used in underwater exploring, salvage surveillance, and marine studies. The audience was impressed with film quality, particularly scenes showing marine life on various reefs in the Florida - Bahamian waters. An active question and answer session followed the film presentation. This portion of the program was highlighted by Rebikoff's discussion on the discovery and exploration of a sunken, man-made structure in the waters off Bimini in the Bahamas. A Dutch cocktail hour and dinner followed the technical program.—Clayton O. Kelty, *Secretary-Treasurer*, Cape Kennedy.

## books reviewed



### Photographic Sensitometry: The Study of Tone Reproduction

By Hollis N. Todd and Richard D. Zakia. Published (1969) by Morgan & Morgan Inc., 400 Warburton Ave., Hastings-on-Hudson, New York, NY 10706. 312 pp. Illus. Diagrams, 5½ by 8 in. Price \$9.95.

Photographic sensitometry is a branch of applied physics concerned with the effects of energy on the photographic emulsion. In the preface the authors explain that the book is intended to provide the serious photographer with the technical background needed for excellence in the application of photography to genuine problems. Methods are described for answering questions such as: How do photographic materials react to light and other radiation? How can the response of the photographic material be measured? How do we estimate the reliability of these measurements? What are the capabilities of photographic materials?

Experimental methods are emphasized, and thus the real-world problems encountered in the use of photographic materials. The first chapter, Introduction to Tone Reproduction, is an overview of the whole process of black-and-white photography. The next four chapters deal with light and light sources, sensitometric test methods, analysis of sensitometric data, photographic printing, and the tone reproduction cycle. In the remaining eight chapters, special problems are considered, including exposure effects, processing effects and processing methods, variability and process control, film speed and spectral sensitivity, density measurement, sensitometry of color photography, microdensitometry and, finally, applications of tone reproduction. A considerable number of references are listed by subject in an appendix.

The authors have been associated for many years with Rochester Institute of Technology, and have taught sensitometry to students of photographic science and engineering, and professional photography and to industrial photographers, members of photographic seminars, military personnel and employees of government agencies.

The book begins with a black-box approach to tone reproduction and the whole field of sensitometry is covered. However, some prior knowledge of mathematics, physical principles and the scientific method is needed to follow easily the system of information presentation that has been employed.

At the outset, on page 7, the concept of log luminance is introduced. Anyone familiar with logarithms will find the brief explanation given for their use in this ap-

plication quite adequate, but for readers without this background an explanatory appendix would have added greatly to the value of the book.

There are a number of references in the text to ASA, US, USA, USASI and ANSI standards. An appendix listing applicable photographic standards, and giving the background for standards activities would have been helpful for readers unfamiliar with this aspect of the subject.

Special emphasis is given to the need to conform with practice in sensitometric testing of photographic materials. This emphasis on practical considerations has made the reasoning in some places rather difficult to follow. Beginners, especially, would undoubtedly benefit from more background information and explanatory details on test methods, as well as the practical applications to which reference is made.

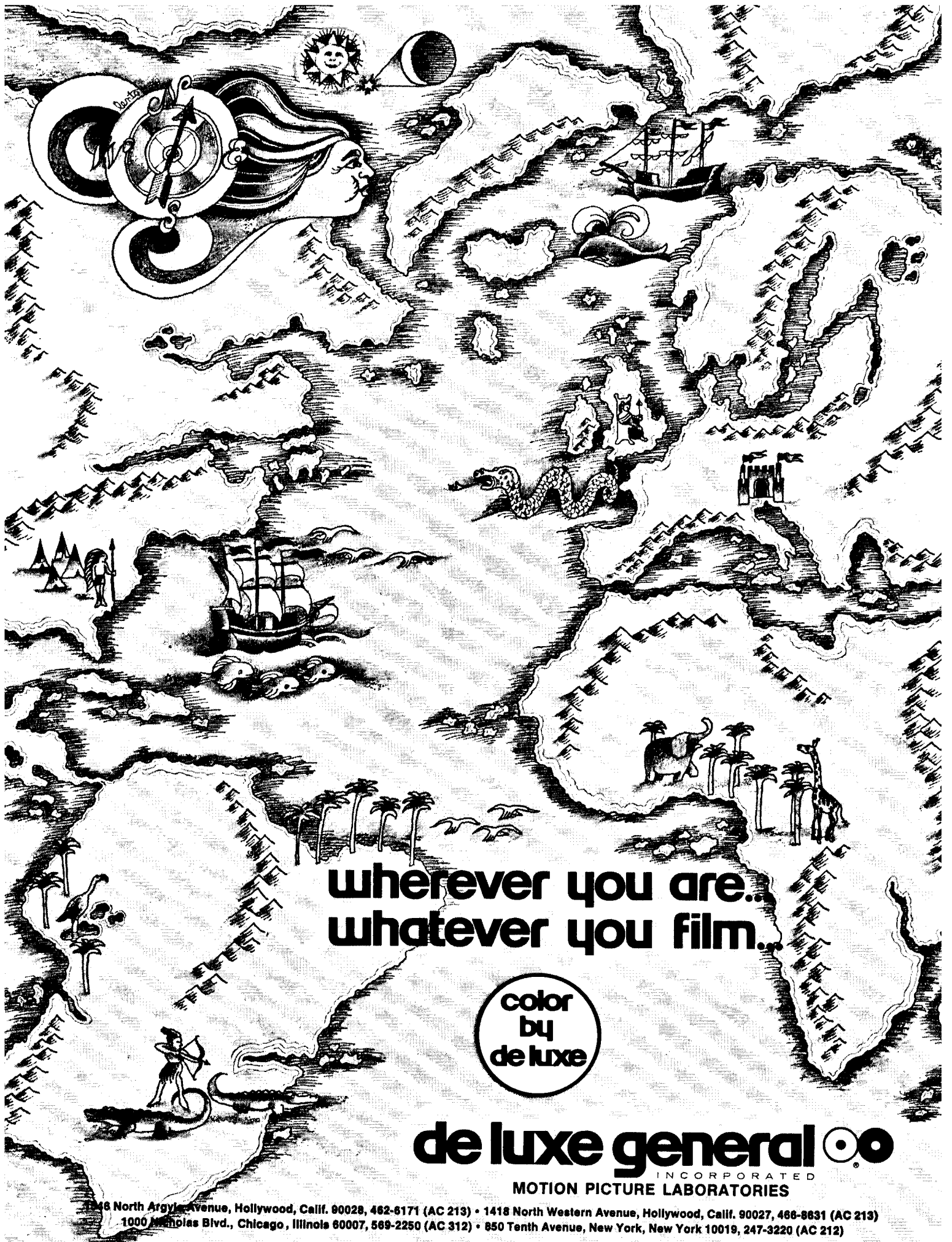
Special attention is given to the sensitometric testing of still photography materials, i.e., negatives and paper prints. One chapter is devoted to sensitometry of color materials, but important practical applications such as the dye transfer process and making of separation negatives are not mentioned. The usefulness of the book could have been increased considerably by including additional information on the application of sensitometry in motion-picture process control and the utilization of films and slides in television.

In the chapter on the applications of tone reproduction some consideration might have been given to the influence of artificial lighting in modifying picture contrast and altering the tone reproduction scale.

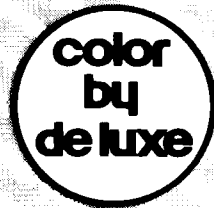
Although this book represents a genuine contribution, it could have been more useful to a wider audience if the "serious" photographer for whom the book is intended had not been assumed by the authors to have an academic background that would make unnecessary explanations of such terms as "degrees Kelvin," "statistical formulas," "matrix algebra," "logarithms" and the like.

Some of the book's statements seem somewhat arbitrary. For example (p. 6) "Many photoelectric meters [erroneously called "exposure meters"] estimate scene luminance." Since an exposure meter has been classified by qualified instructors as "a specialized type of photometer (photoelectric or otherwise)" the word "erroneously" may be considered slightly over-emphatic. On the other hand, the practical usefulness of the authors' definition of luminance is questionable and the foot-lambert, which expresses luminance or photometric brightness, is not mentioned.

The usefulness of the book (at least for the beginner) could be enhanced by some system of cross references. For example, on page 49, in the chapter on Sensitometric Test Methods, under the subhead, Measurement of Photographic Effects, the term "density" is introduced with no explanation as to its use and importance. Densitometry and densitometers are discussed under the following subhead of Optical Problems, but only much farther along in the book (on p. 192) will the reader find a chapter on Density Measurement or any real clarification of the pho-



wherever you are...  
whatever you film...



**de luxe general**   
INCORPORATED  
MOTION PICTURE LABORATORIES

148 North Argyle Avenue, Hollywood, Calif. 90028, 462-6171 (AC 213) • 1418 North Western Avenue, Hollywood, Calif. 90027, 466-8631 (AC 213)  
1000 Nicholas Blvd., Chicago, Illinois 60607, 569-2250 (AC 312) • 850 Tenth Avenue, New York, New York 10019, 247-3220 (AC 212)

topographic meaning and importance of the term.

A few errors in the book are apparently errors in printing and will, no doubt, be corrected in later editions. As an example of such errors, on page 69 the definition of gamma is given as

$$\gamma = \frac{\Delta D}{\Delta \log D} \text{ Correctly, of course, it should}$$

$$\text{be: } \gamma = \frac{\Delta D}{\Delta \log E}$$

This book will undoubtedly be found useful by teachers in technical schools and colleges and will serve as a reference volume in a field where there is little readily available reference material. For practical photographers, amateur and professional alike, the book will provide a comprehensive source of information on sensitometry and tone reproduction. — *Rodger J. Ross*, Canadian Broadcasting Corp., P.O. Box 500, Terminal "A," Toronto 2, Ont., Can.; this review includes comments received from *Pablo Weinschenk-Taberero*, 98-17 H. Harding Expwy, Flushing, NY 11368.

### Overview: A Lifelong Adventure in Aerial Photography

By George W. Goddard (with DeWitt S. Copp). Published (1969) by Doubleday & Company, Garden City, NY 11530. 415 + xiii p. Illus. 5½ by 8 in. Price \$8.95.

*Overview* is a nontechnical history of the development of aerial photography in the USA as the author participated in it from the time of its first organized use in World War I to the satellite reconnaissance of the late sixties — a fifty-year span. The course of the development is shown as very spasmodic, with periods of favor and full funding and backing and other periods of near stagnation and budgetary limitation.

The 20-20 vision of hindsight may lead the reader to wish that foresight could have been better and to feel a degree of thankfulness that there was this central core of vision and developmental effort maintained during all this period. However, the chosen style of the book, as a personal account leaves some uncertainty about the significance of developments which may be taking place in other branches of the service.

Aerial photography has been a major tool of military reconnaissance and presumably will remain a necessary and useful tool in any battles in which we engage as a nation. Only recently has there been need to use high altitude aerial and satellite photography to acquire reliable information concerning what goes on around us so that action can be timed to reduce the threat of war.

The book contains an interesting personal account of the actions and reactions between one man and his surround of military authority and red tape. The man shows himself as having an enduring dedication to furthering the cause of aerial reconnaissance photography. Some advances appear as significant personal contributions, but the majority appear to be the result of technical efforts of specialists sparked by a central driver urging new developments. In times of full organizational

funding and backing rapid progress is made. In the periods of budgetary limitations there is a hint of rule-bending to maintain some progress under the more straitened circumstances, and through it all there is a fund of personal anecdote and detail that gives the account a thoroughly human dimension.

The history is presented in four parts. Part I, entitled the Mitchell Era, traces developments from 1917 to 1926; 1917 was marked by the establishment of the first officer's school to train commanders of aerial photographic sections. The importance of aerial photography under war conditions had already been demonstrated on European battlefields but a United States capability was still to be developed with the aid of British and French instructors. The war years and postwar developments are traced with a very evident appreciation of the important part played by Billy Mitchell. The end of the period designated was marked by the court martial of Billy Mitchell and, technically, by the production of a night aerial flash photograph of Rochester, N.Y.

Part II, entitled the Lean Years, covers the decade 1926-1936. Early in this period photoelectric shutter control improved the coordination of film exposure period and peak flash intensity in night photography, but the lack of urgent practical problems to be solved by this system contributed to reduction of personnel on developmental work. The author was assigned to an observation squadron in the Philippines for some two years and then, as Director of the School of Photography, to Chanute Field. During both of these assignments the author's continued interest in progress and innovation is shown.

Part III, entitled the War Years 1936-1946, starts well before entry of the United States into World War II. The author, reassigned to research and development in June of 1936 at Wright Field, started with limited backing and budget.

Some greater support for research and development was given before the United States entry into war, but with that entry, there was renewal of strong support and activity. Some of the personal differences engendered during the years of service reached a peak and resulted, in 1943, in reassignment from research and development to a "housekeeping job" at Morris Field, NC. Later that year a transfer to the Naval Photographic Laboratory at Bolling Field brought the author back into photographic work at a spot where special values were seen for the strip camera which he had long been championing. A move to England in 1944 brought him close to the pressing demands of field reconnaissance and again his insight supplied useful answers to problems encountered. In 1945 he returned to the United States and became Director of Aerial Research and Development at Wright Field.

Part IV, entitled Bikini Atoll and Beyond, recounts experiences following World War II and the enlargement of the field of aerial photography to include reconnaissance from high altitude flights, from ballistic missiles and from satellites. Korea brought a new series of military demands, including need for further refinement of night photography from aircraft.

General (then Colonel) Goddard was assigned to lecture to the NATO defense college on aerial photographic reconnaissance and, after a brief stay in the United States, he returned to Europe as a general to help build the reconnaissance strength of NATO tactical squadrons. Retirement from the Air Force came on July 31, 1953, but contact was maintained with development activities in both government and industry rounding out an unusually long span of creative activity.

I enjoyed reading this book and recommend it to others who are interested in learning the ways a strong personality can work with, through and around formal organization to achieve results deemed important by him and eventually widely recognized as important. *Deane R. White*, E. I. du Pont de Nemours & Co., Photo Products Dept., Parlin, NJ 08859.

### Infrared Systems Engineering

By Richard D. Hudson, Jr. Published (1969) by Wiley-Interscience Division of John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10016. 642 + xxvii pp. Illus. Diagrams. 6 by 9 in. Price \$19.75.

A first impression of *Infrared Systems Engineering* is that it follows the general pattern established by several excellent texts already in existence in the subject area. Closer inspection, however, reveals some interesting features that give the text its own separate identity.

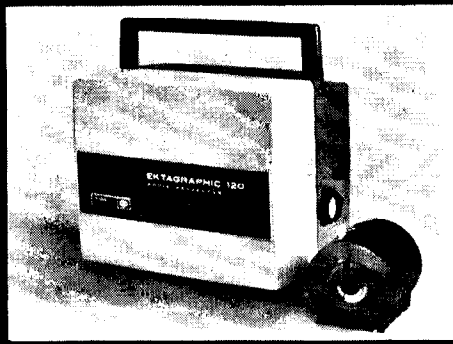
An extensive annotated bibliography and an unusually detailed index deserve special mention. The bibliography may have come from a personal card file which the author has built up over a period of many years. The annotations are crisp thumbnail summaries which make the bibliography much more useful than mere lists of titles. Entries range in date from 1939 to 1968, and come from many countries. (One of the reviewers recognizes the card file and knows of its usefulness through personal association with the author.)

The nonspecialist reader has been considered. Symbols, even commonly used ones, are defined, and lists of definitions are in the index. Literature which is classified or otherwise not generally available to casual readers does not appear in the body of the text, but the principal sources of this literature are identified in an appendix. Readers whose interests are limited to particular applications can find material they want by referring to the applications matrix located inside the front and back cover. When the reader uses the matrix to locate his subject of interest he may be pleasantly surprised to find the material presented in eminently readable style.—*Bernard D. Plakun* and *Robert E. Buckley*, Barnes Engineering Co., 30 Commerce Rd, Stamford, CT 06902.

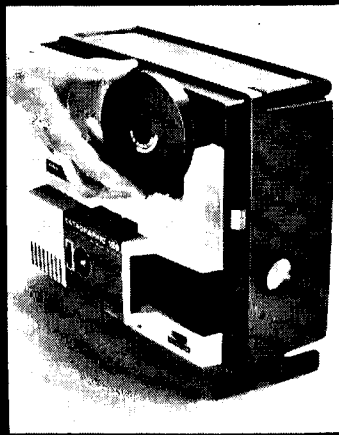
### Index to 16mm Educational Films

Published (1969) by R. R. Bowker Co., 1180 Ave. of the Americas, New York, NY 10036. 1111 + xi pp. 8½ by 11 in. Price \$39.50.

The information in this book was compiled from material assembled by the National Information Center for Educational



# Kodak presents a fully automatic cartridge-loading projector that makes it a snap to show movies.



**“Snap”**

Kodak's done it for you—snap-on movies with the new cartridge-loading Kodak Ektagraphic 120 Movie Projector. Just snap on the new Kodak super 8 cartridge, and the show's on.

With the Ektagraphic 120 Projector, there's now a low-cost, portable, easy-to-use display system that makes it a snap for anyone to show films. Mean anything to you and your business? Like the fact that now your films are more usable by more people in more places? And the fact that now's the time to consider reducing more of your 16mm films to super 8 for even wider distribution? Think about it.

The Ektagraphic 120 Projector is rugged—completely dependable. You can instantly repeat any part of the film

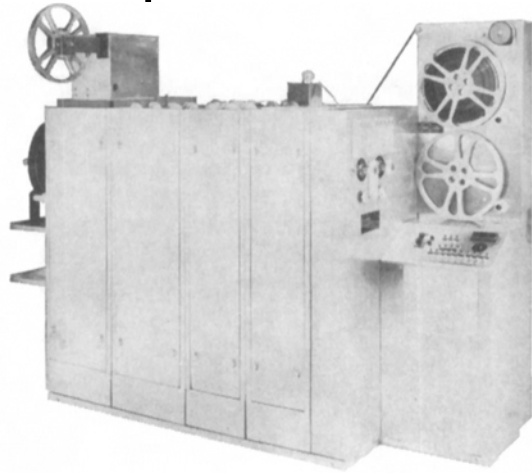
by just pressing a button. You can also project any frame as a still picture. At the end, the film automatically rewinds back into the cartridge—ready to show again, right from the start.

And the unique new Kodak cartridge? It's also a snap to load or unload with standard super 8 reels in 50- or 100-foot lengths. Just snap it open. Drop in the film reel. Snap the cartridge closed, and it's ready for showing. To edit or clean the film, simply snap open the cartridge.

A Kodak Audiovisual Dealer will be glad to show you how the new Kodak Ektagraphic 120 Movie Projector can become a convenience tool in your film operation. See him, or contact the nearest office listed below.

**Kodak**

\$25,900 is what you pay  
for our new Mark V  
color film processor.



At that price we deliver  
almost 30% more  
16mm/8mm capacity  
than other machines in  
the same price range.

- Processes 16mm/8mm Ektachrome at 65 F.P.M.
- Saves Space. About 1/3 the size of machines of comparable capacity.
- 16mm/8mm capability directly interchangeable. No intervening leader necessary.
- Gentlest, most reliable film transport system in the industry.
- Patented tube tanks for minimum chemistry. Gives consistently highest quality.
- Forcing capability available at the flick of a switch.

This is only part of what the Mark V color processor is and what it can do for you. For complete information, write or call.



**Jamieson Film Company**  
EQUIPMENT DIVISION  
2817 CANTON ST., DALLAS, TEXAS 75226  
A/C (214) 747-5634

Media, University of Southern California, which catalogs and stores in computerized form data on all types of educational media.

The material is arranged in three main sections — Subject Guide to 16mm Films; Alphabetical Guide to 16mm Films and Directory of Producers and Distributors.

The book is designed to give easy access to the many thousands of listings and is coded for audience levels beginning with pre-school to kindergarten (K) through college level (C) and including professional audiences (PRO) and industrial (IND) — 12 types of audiences in all.

The Alphabetical Guide is the largest section of the book and contains information about the films. There are 26 main subject headings — Agriculture; Biography; Business and Economics; Civics and Government; Education; English Language; Fine Arts; Foreign Language; Geography, U.S.; Geography, World; Guidance; Health and Safety; History, U.S.; History, World; Home Economics; Industrial Arts; Literature; Mathematics; Physical Education; Psychology; Religion and Philosophy; Science; Science, Natural; Science, Physical; Social Science and Sociology. Under the 26 main headings are numerous subheadings. Producers and distributors are identified by code for each film.

It is difficult to grasp that such an overwhelming number (many thousands) of 16mm films are available to educators, librarians, and other interested persons and organizations. Without this monumental index, information about the films would have to be gained from many sources, and many excellent films might never come to the attention of those who could benefit from them.

Certainly this comprehensive work should be on the reference shelves of every school and library in the country.—*Edit.*

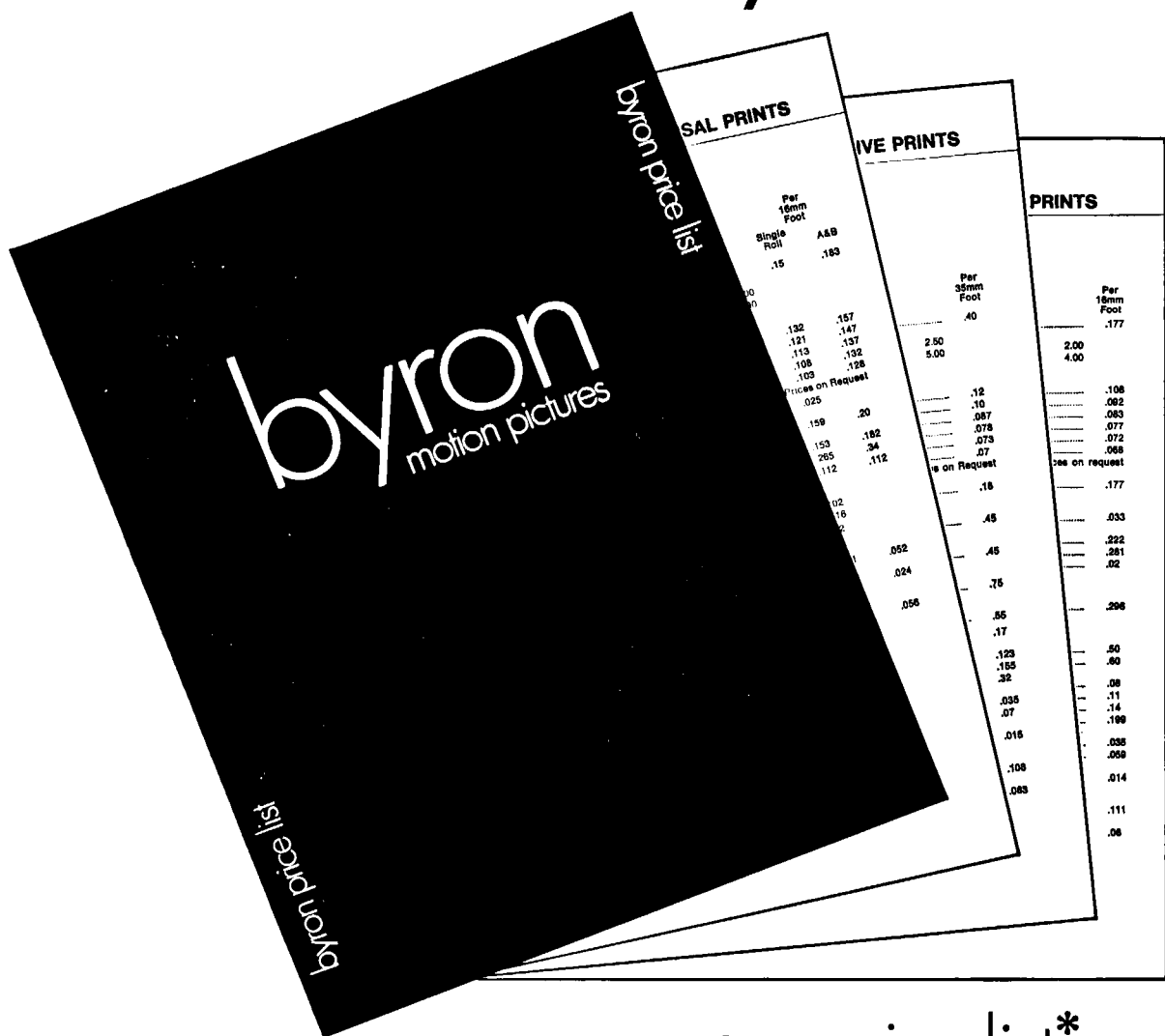
#### Index to Overhead Transparencies

Published (1969) by R. R. Bowker Co., 1180 Ave. of the Americas, New York, NY 10036. 552 + xiii pp. 8½ by 11 in. Price \$22.50.

Some 18,000 entries are contained in this comprehensive guide to overhead transparencies. The material contained in the volume is based on information compiled by the National Information Center for Educational Media, University of Southern California. The Center operates the world's largest data bank for audio visual materials.

The entries are arranged alphabetically by individual title and also by series title in the main section of the book. Individual title entries include information such as the number of overlays; stock or color code; a brief description of content; series title reference where applicable; year of release and codes indicating producer and distributor. The size of the transparency is given together with a physical description (i.e., prepared transparency, transparency master, etc.). Audience or grade levels are designated beginning with "K" (preschool to kindergarten) through "C" (college and university). Other audiences are designated as "T" (teacher education); "A" (adult education and general use); "S"

# One of the best read books in the industry...



...our price list\*

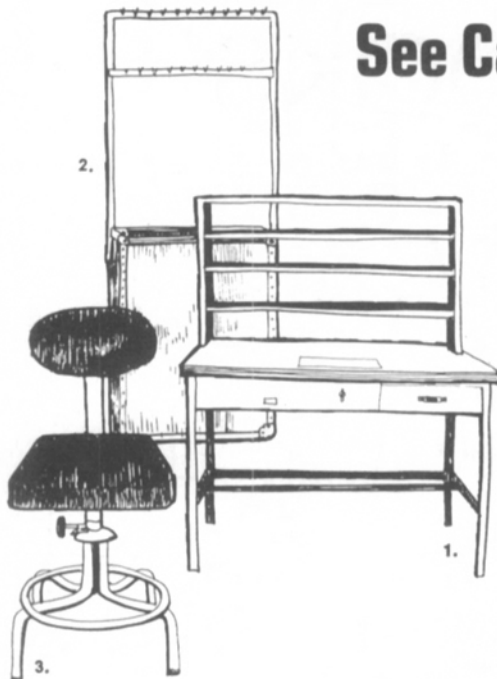
**byron** MOTION PICTURES

65 K Street, Northeast, Washington, D.C. 20002 • 202/783-2700  
World's Most Sophisticated Film Laboratory

\*call or send for yours today.

# Editing Equipment for motion picture and TV?

## See Camera Mart.



**1. CAMART EDITING TABLE** Custom-built, heavy-duty all welded steel construction, genuine formica top (flush trim). Built-in light-well (9" x 12") with 1/4" frosted plexiglass. U.L. approved. 28" x 33" x 60" with light box \$129.50, without light box \$109.50, other sizes, prices on request. (Packing charge for deliveries outside New York City Area.)

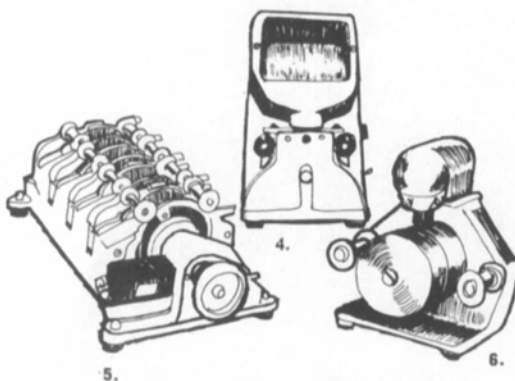
**2. CAMART FILM BIN** • Rectangular construction—30" x 24" x 12" • Vulcanized fiber with reinforced metal frame • Double-row racks. Complete with rack and scratch-proof liner. With skids \$43. with casters \$48.75

**3. EDITORS SWIVEL CHAIR** Seat and back-rest are deeply upholstered with Durafoam. Mounted on heavy gauge steel seat pan 17" x 16". Adjustable backrest. All welded tubular steel frame. Without casters \$35.80, with casters \$39.10.

**4. 16mm ZEISS MOVISCOP VIEWER** Sharp 2 1/4" x 3 1/4" picture. Large magnifying screen, hooded against stray light, shows exceedingly bright image, right to corners. • Film can be run backward or forward, left to right. • Fits Precision sound base. \$144

**5. MOVIOILA SYNCHRONIZERS** Easy to read. Easy to operate. Strong cast aluminum frame. Main Shaft turns on sealed, precision ball bearings. Film retaining rollers equipped with self-lubricating bearings. All parts machined for interchangeability. From \$120.

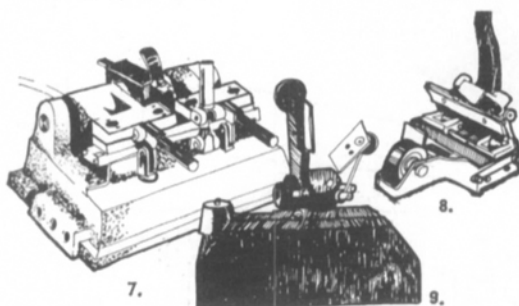
**6. MOVIOILA OPTICAL SOUND READER MODEL SRB—35 mm-16mm, 35-32mm \$155.** Moviola's versatile optical sound reader, reads left to right, right to left, emulsion up or down.



**7. M-H PROFESSIONAL HOT SPLICER** Cuts splices and welds in one operation. Low visibility splices made at frame line. Built-in "life-time scraper blade and holder." Precision, full fitting pilot pins. Thermostatically heated blades make perfect welds-fast. Model 135—16/35mm \$349. Model 116—8/16 mm \$249.

**8. GUILLOTINE SPLICER** • Precision machined for accurate registration. • For use with non-perforated Mylar or Cellulose Tape. • Cuts straight for picture and diagonal for sound 16mm Model \$155 35mm Model \$180

**9. RIVAS MYLAR SPLICER** Constructed to professional specifications for 16 or 35mm film. Registration pins align the film perfectly while the serrated cutter holds the tape firmly over the film during the splicing operation. Rivas 16 or 35mm straight \$165. diagonal \$175.



For Editing Equipment catalog write:

**The Camera Mart Inc.**  
456 W. 55th St., (Bet. 9th & 10th Aves.)  
New York, N. Y. 10019 Phone: (212) 757-6977



(special education, e.g., physically handicapped, mentally retarded and gifted); "R" (regional); PRO (professional) and "IND" (industrial).

A special Subject Guide is provided which lists entries under 25 broad subject categories which are further divided into several hundred subheads.

A directory of transparency producers and distributors is included and arranged alphabetically by code and by name.

This is the first comprehensive bibliographic guide to overhead transparencies, one of the important audio visual teaching aids in the modern approach to education. The *Index to Overhead Transparencies* will unquestionably become essential equipment for teachers, librarians and media specialists—*Edit.*

### Cassettes and Cassette Duplication

By Peter H. Stanton. Published (1969) by Infonics, 1723 Clovefield Blvd., Santa Monica, CA 90404. 46 pp. Illus. Diagrams. 5 1/2 by 8 1/2 in. Paperbound. Price \$2.00.

This informative book is intended especially for the nonprofessional user of cassettes. It provides the user of multiple cassettes with information about high-speed cassette duplication. General background material on magnetic tape and directions for preparing a good master are included.

The book contains four chapters: The Cassette; A Revolutionary New Communications Tool; The Master Tape; Recording the Master Tape and Cassette Duplication. A glossary of tape-recording terms is included. Numerous simple and explicit diagrams are included and the text is easy to read and easy to understand. The book will be especially helpful to first-time users of multiple cassettes.—*Edit.*

### Index to 8mm Motion Cartridges

Published (1969) by R. R. Bowker Co., 1180 Ave. of the Americas, New York, NY 10036. 402 + xv pp. 8 1/2 by 11 in. Price \$19.50.

*Index to 8mm Motion Cartridges* is a bibliographic guide to commercially produced educational 8mm motion cartridges based on information compiled by the National Information Center for Educational Media, University of Southern California. The Index was designed to meet an increasing need for information on the availability of 8mm titles. During 1968, 8mm motion cartridge titles increased more than 100%. The *Index* contains some 10,000 entries.

The entries are arranged alphabetically by individual title and by series title. Individual title entries include such information as title with subtitle, size and physical characteristics, length of film, stock or color code, description of contents, series title reference where applicable, code indicating producer and distributor, year of release and Library of Congress number when available. Designations of 11 audience grade levels are indicated after most entries, ranging from pre-school (K) to professional (PRO).

A directory of producers and distributors, arranged alphabetically by code and by name, is included.—*Edit.*