

books reviewed

Advanced Optical Techniques

Ed. A. C. S. van Heel (completed by B. S. Blaisse). Published (1967) by John Wiley & Sons, Inc., 605 Third Ave., New York, N.Y. 10016. 678 + x pp. Illus. Diagrams. 7 by 9 1/4 in. Price \$35.00.

The editor of this book says in his Foreword: "For a long time technical optics has been neglected by the research workers in the domain of space physics, of atomic energy, and of other disciplines with a flavor of actuality and even of romanticism; workers, who begin to feel now the need of a sound optical background for the benefit of their own work. . . A book presenting modern subjects in a comprehensive form seems helpful in those cases

where a connection between the more elementary treatises and the specialized publications is missing. The present volume is an attempt in this direction. . . It need not be emphasized that it is unfeasible to be up to date in all subjects treated. . . The respective chapters can be considered as introductions to the pertinent literature. . . The editor can only declare that he has done his best to assemble a number of writers who have won their spurs in their field, and who devoted their time making a collection of texts which to his opinion will prove useful to those who feel the need of modern optical knowledge."

The editor, Professor van Heel, died in May, 1966, and Dr. B. S. Blaisse, of Delft, coordinated the completion of the work.

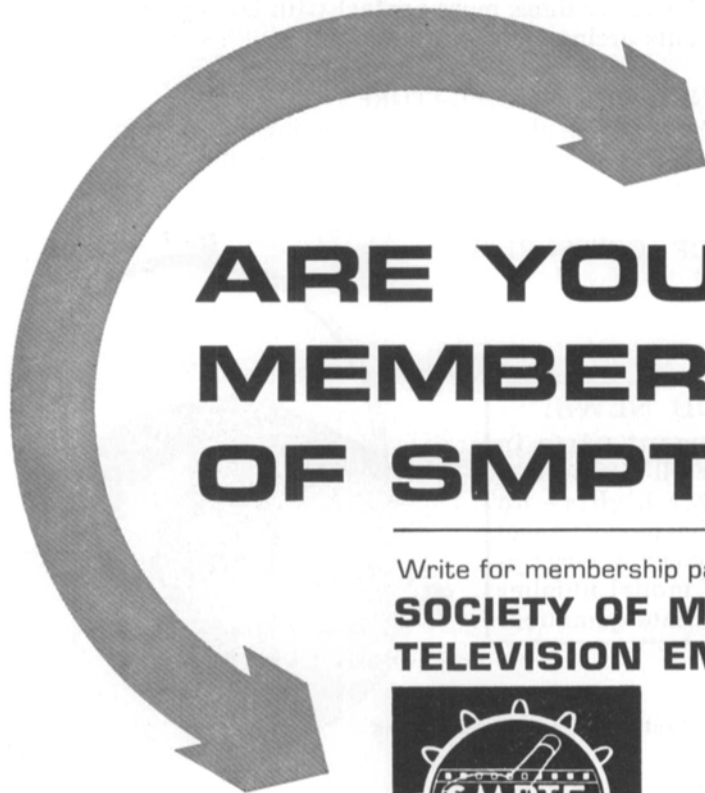
The field is presented in 18 chapters, which have been prepared by 23 authors. The topics, in general terms, comprise interferometry, spectroscopy, and coherence; geometrical optics, aberrations, optical transfer functions, and the design of optical instruments; the production of optical parts, optical glass, and the coronagraph (the more serious problems in which are the grinding and polishing procedures to avoid light scattering); modern light sources, including lasers; thin film and fiber optics; and techniques of alignment and precision measurements.

The editor's objective of presenting a bridge between the more elementary treatises and the specialized publications, so highly desirable in the present days, is achieved with varying success by the

different contributors. It is a tall order for some of these subjects, and one must say that in a number of the cases it is very nicely done. In all the cases a very good collection of references is cited, so that where the reader encounters hard going he is guided to other treatments that can help to smooth his way to understanding.

With the large list of advances presented it is difficult to select any for comment. Two might be noted. The discussion on the coronagraph is very Spartan in its rigid adherence to technical methods. The reader might have been fascinated by the beautiful results which have been obtained with these instruments. The name of Menzel is not even mentioned, nor are cited his remarkable motion pictures of solar edge activity (of which, of course, only still illustrations could have been extracted).

A topic that will be interesting to those who are involved with image quality concerns the developments in the recent concepts of optical transfer functions, which derive more or less indirectly from Fourier transform techniques in interferometry and spectrometry. The theory and the measurement of these functions are summarized by Dr. Rosenhauer. The measurement is of course a delicate and tricky proposition, and the several extant approaches are covered. A number of results are briefly interpreted, that illustrate also the variety of ways in which the data can be plotted to evaluate optical system performance. The discussion illustrates the difficulty,



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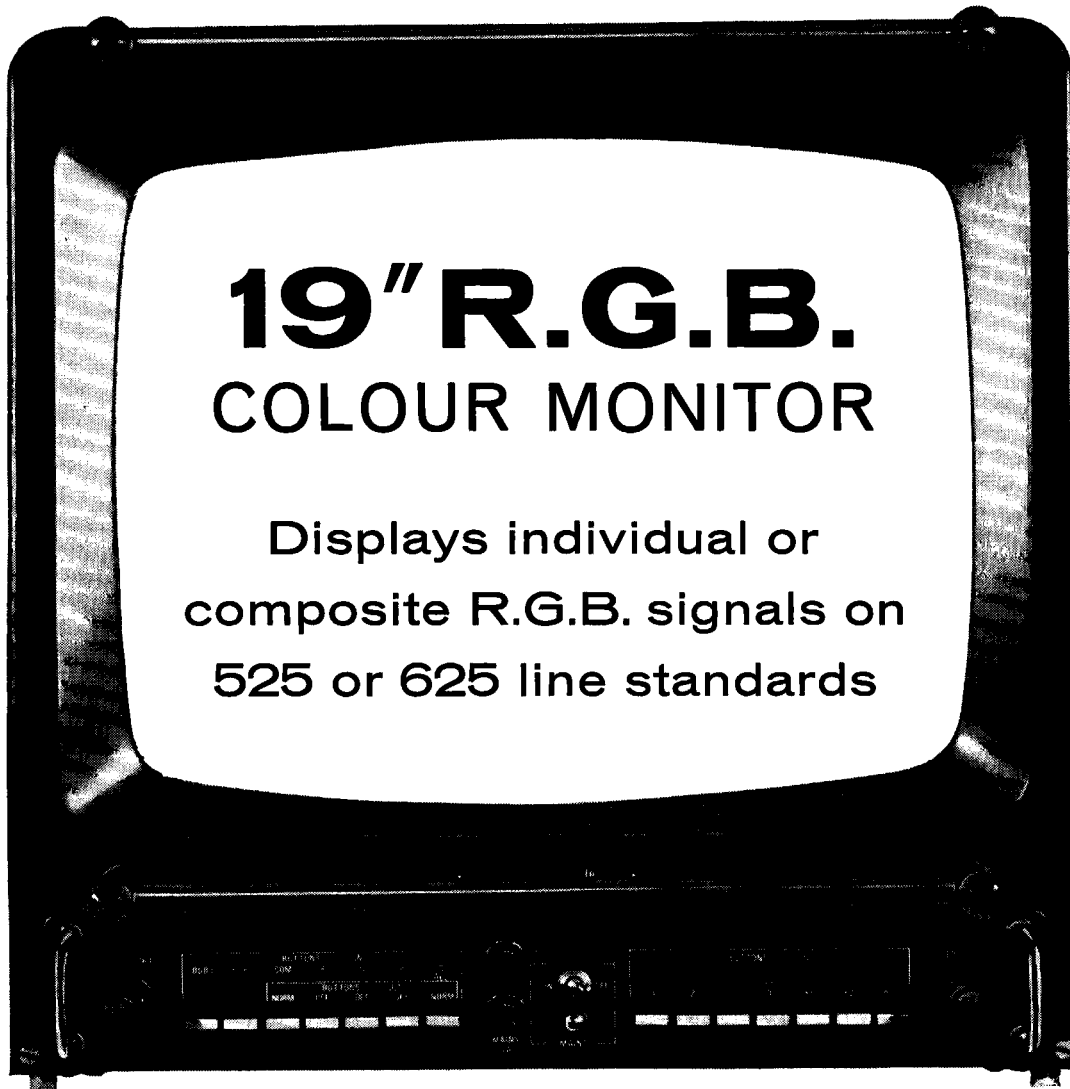
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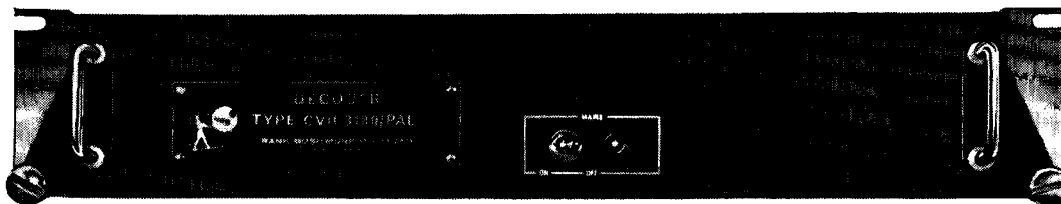
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if not impossibility, of deriving a single figure of merit (as novices are so anxious to do) from the information.

One may close with a remark of Dr. Blaise in his preface: "I am convinced that the volume will constitute an invaluable aid for all who are concerned with optical problems, both in research and in the application thereof."—*Pierre Mertz*, Consultant, 66 Leamington St., Lido Beach, L.I., N.Y. 11561.

Acoustics—Room Design and Noise Control

By Michael Rettinger. Published (1968) by Chemical Publishing Co., 200 Park Ave. South, New York, N.Y. 10003. vi + 386 pp. Illus. Tables. Appendix. 5½ by 8½ in. Price \$17.50.

This is an exceedingly well organized and clearly written book on the physics of sound, room acoustics, noise, noise reduction, room design and electronic systems applied to rooms.

The first chapter, which is on the physics of sound, is an illustrated presentation of the various physical aspects of sound waves including pressure, particle displacement, velocity and acceleration, velocity of propagation, intensity, energy density, loudness and decibel notation. Conversion graphs and tables are provided in abundance.

The chapter on room acoustics discusses

room absorption and reverberation time including the optimum reverberation time of churches, concert halls, opera houses, chamber music halls, motion-picture theaters, auditoriums and recording studios. The isolation between rooms and transmission through partitions, the construction of partitions and other aspects of sound insulation are thoroughly covered.

The next chapter covers noise from all standpoints, namely, the injurious effects of noise upon human beings, noise level in various and typical locations and noise sources, involving for the most part machines and the application of noise control.

The important chapter on noise reduction begins by providing the fundamentals of the subject. The design and operation of vibration isolators supplies a useful presentation. The use of barriers or walls to exclude noise is a pioneering subject of the author. The troublesome transmission of sound through piping systems is considered in some detail. There is a section on the design of doors and windows for the reduction of noise through their elements.

The first part of the last chapter covers the important subject of room design. Here the author covers the gamut of architectural enclosure designs from the living room to the concert hall. The parameters involved are geometrical configuration, optimum reverberation time and noise isolation. The middle part of the

chapter covers the specific design of homes, high-rise buildings, instructional spaces, restaurants, hospitals and sanitariums, fairs and expositions, industrial shops, and acoustic models. The last part of the chapter is devoted to methodology of room design. In closing the chapter the author summarizes the important aspects of room design.

The appendix describes sound reinforcement, synthetic reverberation, delay and room compensation systems.

To summarize, this book is a modern, comprehensive and clearly written exposition on the subject of room design and noise control. It should prove to be invaluable to those concerned in any manner with room acoustics, noise control and the allied subjects.—*Harry F. Olson*, RCA Laboratories, Princeton, N.J. 08540.

Microphotography (2d. ed.)

By G. W. W. Stevens. Published (1968) by John Wiley & Sons, Inc., 605 Third Ave., New York, N.Y. 10016. 510 pp. inc. index. Illus. Diagrams. 5½ by 9 in. Price \$25.00.

As has been noted many times before, the information explosion of the last hundred years is placing tremendous and indeed fast-increasing burdens on our mechanisms for storage and retrieval. The advent of microfilm has served to alleviate at least some of these problems. The general art of microphotography is developing greater and more extensive refinements in the microscopic reproduction of documents and other primary records of information, and also, incidentally, in the methods of storage and retrieval of the microcopies.

Microphotography was first published in 1957, and is now appearing in a second and revised edition. It covers not only the photocopying of originals with extreme miniaturization, but also the numerous auxiliary arts to which this has led, such as the photofabrication of optical reticles, small machine parts, solid-state electronic components and integrated devices composed of these, as well as the general uses of microphotography as a research tool. The author is careful to distinguish the term "microphotography" or the copying in greatly reduced form of a larger scale original, from the term "photomicrography" that designates the copying in greatly magnified form of a microscopic original, which covers a different art altogether.

The book is divided into 13 chapters. The first eight describe the elements of the optical components and photographic techniques that are involved in the art. These comprise the lenses, focusing procedures, camera, optical bench, illumination, the sensitive material and its processing, etc. The remainder of the chapters describe the various applications of the art, such as the miniaturization and manipulation of documents, the manufacture of reticles and of automation, electronic, and metrology equipment, and also production tools. The last chapter in this group then covers a general discussion of microphotography as a research tool.

There are three appendixes, and subject and name indexes. The book also contains

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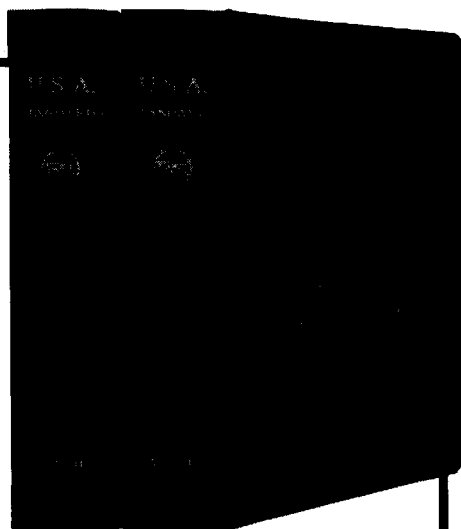
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over 450 references, ranging from early art to the present. Many of these are American, and a substantial number come from the *Journal of the SMPTE*. One of the important problems the author admits to has been when to stop bringing the material up-to-date and going to press. This is of course particularly characteristic of the fast developing art of miniaturization. The book will be important to those involved in the art, especially in its photographic and film aspects.—*Pierre Mertz*, Consultant, 66 Leamington St., Lido Beach, L.I., N.Y. 11561.

Basic Mathematics for Engineers

By D. J. Hancox. Published (1968) by McGraw-Hill Book Co., 330 W. 42 St., New York, N.Y. 10036. 197 + ix pp. Diagrams. 5½ by 8½ in. Price \$6.95.

What makes a new math refresher book interesting enough to rate a place on an already crowded bookshelf? Books on this subject are so numerous that each new one must either fill a new need or meet an old need in some particularly outstanding way. With this thought in mind, one hopes to find in *Basic Mathematics for Engineers* something exciting in the way of insight or presentation. Instead, one finds just another classroom textbook. The book covers the ground its title describes, but in the plodding way that used to characterize American textbooks of many years ago.

The book has a British background. It was prepared as a comprehensive text for an introductory course of study in basic mathematics for engineers. Students using the text are assumed to have taken the preceding General Course, essential material from which is summarized where needed. The book, transported unchanged to an American setting, is offered as, "... a 'must' for the engineer who may have studied calculus sometime in the past and is seeking a handy refresher and reference in his daily work."

Subject matter covers differentiation, integration and complex numbers, but does not include statistics and probability theory. Much of the text presents without comment questions from past examination papers and the answers. There are few illustrations and only brief explanatory text passages.

The outstanding feature of the book is a direct, no-nonsense approach to its subject matter.—*Bernard D. Plakun*, Barnes Engineering Co., 30 Commerce Rd., Stamford, Conn. 06902.

Thesaurus of Engineering and Scientific Terms

Published (1967) by Engineers Joint Council, 345 E. 47 St., New York, N.Y. 10017. 690 pp. 8½ by 11 in. Price (soft-bound) \$19.50, (hardbound) \$25.00.

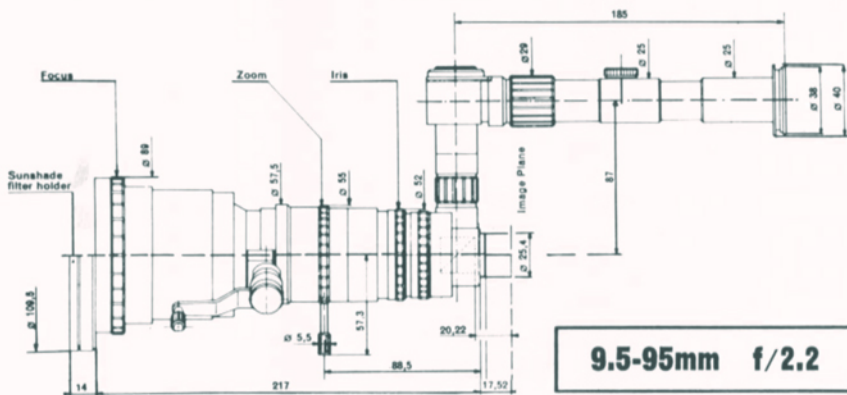
This book is a major revision of *Thesaurus of Engineering Terms* published in 1964. The revision was prepared by staff lexicographers of the Engineers Joint Council in cooperation with the Department of Defense.

In gathering terminology from which selections were made for the *Thesaurus*,

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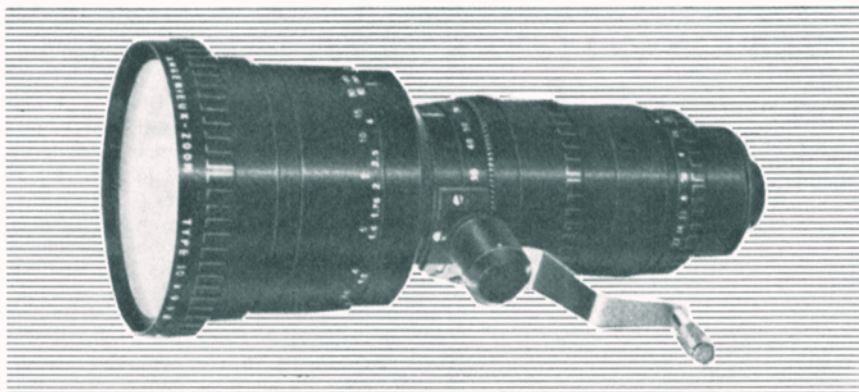
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some 350 subject indexing vocabularies, thesauri, glossaries and other specialized lists were consulted which included terms from essentially all scientific and technical disciplines.

Because of the interdisciplinary nature of the *Thesaurus*, more than 300 engineers, scientists, technical information and library specialists were invited to participate in the preparation of this impressive work. Many of the participants represented scientific and technical societies. There were also representatives from numerous Department of Defense interests and other government and non-government activities.

One of the main purposes of the *Thesaurus* is to clarify the many ambiguities that have crept into scientific and technical terminology and thus facilitate communication. It contains 23,364 main entries, 17,810 descriptors and 5,54 USE references. Some 22 major fields are covered, including Electrical Engineering, Biological and Medical Sciences, Aeronautics, Astronomy and Astrophysics, Atmospheric Sciences, Mathematical Sciences, Physics and Space Technology. — *Edit.*

Television News

By Irving A. Fang. Published (1968) by Hastings House, Publishers, 10 E. 40 St., New York, N.Y. 10016. 285 pp. Illus. 6 by 9 in. Price \$8.95.

This book covers every aspect of television news reporting, from the equipment required ("A fully-equipped sound cameraman traveling to a distant city for a story resembles in some respects a hunter on safari. His gear is likely to fill two dozen boxes, trunks and suitcases of assorted sizes.") to the moral responsibility of the reporter ("The few newsmen who have an ax to grind do not deserve their jobs, for then they are propagandists, not journalists.").

Although the book is directed mainly to writers, reporters and news analysts, the role of the cameraman and the technician is explored in detail and the symbiotic relationship of the cameramen, laboratory technicians and engineering personnel of a TV station with the newsmen — writers, reporters and analysts — is thoroughly discussed.

The book is intended as a textbook for students and also as a "refresher" for professionals, but it contains much of interest for the general reader. It is divided into 15 chapters and includes appendixes and a glossary. Five chapters (10 through 14) are concerned specifically with the technical aspects of television news. Chapter 10 (Using Camera Equipment) is concerned not only with how to use the camera, but with the various kinds of cameras best suited for specific purposes. Such cameras as the Auricon Cine-Voice, Bolex, Arriflex and the Beckman & Whitley newsreel camera are mentioned. A chapter is devoted to the "how to" of film editing and the author notes, "The film editor is both artist and technician." A detailed description of the editing process is given and advantages and disadvantages of double-system filming are discussed.

In Chapter 15 (Integrity and Broadcast Standards), the author notes (p. 219),

"Objectivity never comes easily to a responsible journalist. It comes because he wills it so, although he personally has developed strong political views on many subjects. . . . If he lets (these views) take over he becomes nothing more than a hack, a flack or a propaganda mouth-piece."

The author also looks at TV news from the point of view of the politician — "Television-wise politicians use the enthymeme, the aphorism, the pungent phrase, the statement which can be taken alone and out of context . . . knowing that the medium of the film transforms the dimensions of time into the dimensions of length . . ."

The book is well written and well organized. The author has been a working newsman since 1951 for newspapers, a wire service, radio and television. He is presently Assistant Manager for the ABC political unit.

A very minor flaw in the book is the misquoting of Marshall McLuhan (p. 108) — "Let us disagree with Marshall McLuhan as concerns news and say that the medium is not the message. The message is the message." McLuhan's (often misquoted) statement (the title of a book) is *The Medium is the Massage*. Except for this small quibble, this reviewer found nothing to carp at in this informative book. — *Edit.*

An Actor Guide to the Talkies (Two Volumes)

By Richard B. Dimmitt. Published (1968) by Scarecrow Press, Inc., 52 Liberty St., P.O. Box 656, Metuchen, N.J. 08840. 1555 pp. inc. Vol. II (Index). Price \$35.00.

A companion volume to the author's earlier publication, *The Title Guide to the Talkies*, this new two volume work lists by title over 8,000 foreign and domestic films released between 1949 and 1964. The main volume lists the individual titles, their release or copyright dates, and their casts of characters. The index volume lists approximately 30,000 performers and the films in which they appeared. It is intended that later volumes will cover the period from 1929 to 1948.

A spot check of selected entries showed them to be complete and accurate. One regrets that a compilation project as ambitious as this could not have resulted in a guide which presented all production credits, including those of the artists and technical supervisors working behind the camera. As it is, however, a considerable amount of work has gone into this compilation, and it should serve as a very useful addition to the reference tools now becoming available to film students and scholars. — *Raymond Fielding*, Div. of TV-Radio-Film, Iowa City, Iowa 52240.

Photographic Film Dosimetry

By Klaus Becker. Published (1966) by Focal Press, 20 E. 46 St., New York, N.Y. 10017. 223 pp. incl. Bibliography, Indexes, Illus., Diagrams. 7 by 9½ in. Price \$21.50.

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exposure was perhaps one of the most widespread examples, but the technique was used in many other cases. The method is in many respects very convenient, but it does require many precautions to obtain any degree of accuracy.

In the case of visual radiation a complicating factor in the measurement has been that the units employed vary according to the use to be made of the radiation. Units of "luminance" refer to a weighted intensity in the spectrum, where the final use is connected in some way with visual appearance, while "radiance" refers to unweighted intensity, connected with the power of the radiation. In the case of high energy quanta or particles there are many more categories, and the author describes relatively esoteric units, for example, "R," "rad," "LET," "RBE" (or "QF"), "rem" and "DE." To distinguish one from the other requires an effective filter of some kind, and its choice involves one of the types of precautions needed for accuracy (which ultimately is apt to be much lower than that realized with visual radiation). In the case of neutrons, these being without charge have little effect on the photographic emulsion. Thus instead of a filter an "intensifier" is used, to convert them into another form of radiation which can affect the emulsion. But even then the author says "at present there are practically no film dosimetric methods available for neutron energies covering a range of about six orders of magnitude." In the usual cases of dosimetry the measurement is made on the density of the developed emulsion, but for special radiations the measurements can be made on number of ionization tracks recorded in the emulsion, or even occasionally on the diameter of round spots recorded. Automatic scanning methods are described for the measurement of some of these special cases. The author treats in some detail, at various places in the book, the mechanism of the formation of the latent image and the development process, to analyze these situations.

The book covers the general problem of photographic dosimetry but also gives specialized attention to the matter of badges worn by workers in atomic plants to check on their exposure to various dangerous types of radiation. This has developed into a fairly elaborate procedure, with multiple filters incorporated into the badges, and highly standardized methods of development and measurement.

The book will of course be of especial interest to those working in dosimetry in atomic plants or on other scientific applications of the art; but it also gives much general information on the special photographic processes which are to be encountered when recording such radiations. — *Pierre Mertz*, Consultant, 66 Leamington St., Lido Beach, L.I., N.Y. 11561.

Manual of Color Aerial Photography

Ed. John T. Smith. Published (1968) by American Society of Photogrammetry, 105 North Virginia Ave., Falls Church, Va. 22046. 550 + xv pp. Illus. (including numerous aerial photographs in color). Diagrams. 10 by 10½ in. Price \$22.50, (ASP members) \$19.00.

A Foreword by Lawrence W. Swanson, Past President of the American Society of Photogrammetry, notes, "At the Society's annual meeting in 1963, a number of photogrammetrists met to discuss the use of color and infrared films for aerial photography. . . In 1964 the Society formally recognized the accomplishments of this group by officially designating it a technical committee. The members of this committee or the organizations they represent are the experts responsible for producing the material in this manual, which the American Society of Photogrammetry is proud to present as a valuable addition to the art of photogrammetry. Nothing so comprehensive has previously been written on the subject of color aerial photography."

Color photography in its modern form, with its convenience and simplicity for the user, is one of the miracles of the mid-twentieth century, and has revolutionized many arts — including that of photogrammetry and aerial mapping or reconnaissance. This manual gives an essential grounding in the techniques of the art, using color film, and presents some illustrations of what can be accomplished with it. The authors of the various parts number up to 57, and, in addition, some of the instructions in the use and processing of the film or paper have been prepared by the manufacturers and are unsigned. There is also a list of some 16 consultants or others who have assisted in the preparation of the manual.

The work starts with elementary groundings on a number of basic subjects — first is color vision and colorimetry. An interesting illustration shows color chips as seen by a normal individual, then by a protanope, and then by a deuteranope. The chips for the last two, seen by a normal viewer, approximate what the color-blind individual sees. Also, to guide the reader on the actual colors of Munsell designations, there is appended to the book a set of the ISCC-NBS centroid color chips (with their locations in the Munsell plots). Another subject is optics and filters. Here, beyond the elementary treatment, a number of field distortions are described which are particularly relevant to accurate photogrammetry; also, a fairly close treatment is included on the use of filters to cope (to the extent feasible) with atmospheric haze of various types. The exposure evaluation for aerial color photos differs from that for black-and-white, and also for photography on the ground, and thus necessitates changes from the usual ASA rating techniques. The section further includes details on various cameras, shutters, etc. An introductory section also covers the planning and operation of a color aerial photographic mission.

Once these things are out of the way, quite extensive chapters are included on the various available color aerial films and the details of their processing and sensitometry. These sections have been mostly written by the manufacturers. Following these sections are descriptions of printing stocks, either for copies or for obtaining positives from negatives, and for diapositives or paper-like prints. The descriptions are generally written by the manufacturers. A chapter follows on the metric quality of color aerial photography.

With the techniques described, the manual outlines a variety of applications. These include spectacular photographs of the earth from space, applications to agriculture, forestry, hydrology, etc. Many of these pictures are of great beauty. An interesting application is the use of "false color" photography, in which a fixed pack of several cameras with parallel axes photograph a scene in different spectral bands. These are then printed by superposition on a color film, using lights of colors not corresponding to the original scene. Various effects may be emphasized to a startling degree in this way.

Numerous appendixes are attached, including abstracts of much of the literature and a glossary of photographic terms.—*Pierre Mertz*, Consultant, 66 Leamington St., Lido Beach, L.I., New York 11561.

The Cinema in the Arab Countries

Ed. George Sadoul. Prepared for UNESCO. Published (1966) by Interarab Centre of Cinema and Television, Beirut, Lebanon, B.P. 3434. 290 pp. + section of illus. Map, Tables. 6½ by 9½ in. Paperbound.

This informative anthology contains some 36 papers covering all phases of the cinema in the Arab countries and includes statistical tables on film production, export and import, boxoffice receipts, number of theaters, attendance, etc.

The book is divided into six sections: The Cinema and Arab Culture; History of the Arab Cinema; Geography of the Arab Cinema; Problems and Future Developments; Recommendations; Film Lists and Statistics.

A paper by Galal El Charkawi covering Arab cinema from 1896 to 1962 states that "the first cinema film (Lumière) was screened at Alexandria in the back room of a cafe called Zavani." And the author tells us that by 1908 there were five cinemas in Cairo, three in Alexandria and one each in Port Said, Assiut and Mansura.

In describing films produced by the Lama brothers during the early days of sound (Ibrahim and Badr Lama founded the Mina Film Ciné Club in Alexandria in 1926), the author remarks, "In dealing with such Bedouin traditions as honor, courage or vendettas, or recounting legendary and platonic love affairs, one almost has the impression that the Lama brothers were attempting to produce Eastern Westerns."

The papers included in the anthology contain a great deal of information for the general reader interested in the Islamic religion and Arabian culture and history as these affect the development of the art of the motion-picture in the Arab countries. A paper by Mario Ruspoli (in the section on Problems and Future Developments) on "The Light Weight Synchronized Cinematographic Unit," will be of more interest to the specialist as will also the section containing Film Lists and Statistics.

This is an admirable book, particularly impressive because of the wide range of information and the arrangement of statistical information so that the reader can see at a glance the significance of the facts and figures presented.—*Edit.*

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The Technique of Film Editing (2d. ed.)

By Karel Reisz and Gavin Millar. Published (1968) by Hastings House, Publishers, Inc., 10 E. 40 St., New York, N.Y. 10016. 411 pp. incl. index, bibliography, glossary, appendix. Illus. 5½ by 8½ in. Price \$13.50.

The first edition of *The Technique of Film Editing*, by Karel Reisz, was published in 1953 and the book has been reprinted 15 times in 15 years. The second edition has been brought up to date by the addition of a second part (The Fifties and Sixties) written by Gavin Millar in cooperation with Mr. Reisz. The book is also published in Spanish, Polish, Czech and Russian.

The first section of the book is unchanged from the original text. According to the Publisher's Note (by A. Krasna-Krausz), "Karel Reisz's original text is reprinted as it was. Any attempt to revise or re-interpret it could only blur its spirit. It would also handicap the reader in forming his own views about the ever-growing momentum of sophistication that went into cinematic expression and perception during the last decade and a half."

The first edition was reviewed in the January 1954 issue of the *Journal* by Thomas C. Daly (of the National Film Board of Canada), who said, "This is the best book yet available on film editing, either for the layman or for those learning the craft. . . . Now, for the first time we have a comprehensive book, attempting to make clear the

'pivotal contribution of the film editor' to filmmaking as a whole." Mr. Daly notes in his laudatory review that ". . . the author has enlisted the expert advice of ten of Britain's top film editors in various fields."

The new second section deals with the techniques of editing for wide-screen which, the author says, "was certainly the first significant technical development of the fifties." Examples are given of the aesthetic and dramatic effects possible, by means of skilled editing, on wide-screen, that would be difficult, if not impossible, to achieve on the "square" screen.

The second section also has chapters on Cinéma-Vérité and the Documentary Film of Ideas and Nouvelle Vague. While not precisely viewing with alarm cinéma-vérité (Renoir, Leacock, Warhol and others), the author notes that it "may be a token of a growing inclination to eschew the editing process altogether." He warns that "The power to select and order is a privilege dangerously dispensed with and it is the central issue in all discussion of improvised cinema or cinéma-vérité. The director can never do away with the editing process altogether. . . ."

An Appendix gives a detailed presentation of cutting room procedures. A Glossary of Terms is included.

This enjoyable book combines a practical explicit "how-to" presentation with a literate approach to the past, present and future of the art of cinema. It will certainly remain a classic in the field for a long time to come. — *Edit.*

The Technique of Film Animation (2d ed.)

By John Halas and Roger Manvell. Published (1968) by Hastings House, Publishers, 10 E. 40 St., New York, N.Y. 10016. 360 pp. incl. index, glossary. Illus. 5½ by 8½ in. Price \$10.95.

The first edition of this book was published in 1959. It was reviewed in the *Journal* (pp. 722, 724, Oct. 1959) by Ernest M. Pittaro, who said, "This is the most complete work on animation that has been done to date." We believe that this statement obtains for the second, revised edition.

The book covers the entire field of animation — entertainment, television, commercial, instructional, the puppet film — and gives attention to specialized forms of animation, including the work of Alexander Alexieff and Claire Parker who use three-dimensional objects. Detailed descriptions of their techniques are given. The authors devote a chapter to the work of Norman McLaren, including a description of his abstract films made without a camera and with hand-drawn synthetic sound. (A paper by Norman McLaren in the December 1951 issue of the *Journal*, "Stereographic Animation — The Synthesis of Stereoscopic Depth From Flat Drawings and Art Work," gives a detailed description of his methods.)

The history of the animated film, in Europe as well as in the United States, is briefly reviewed. The authors credit Emile Cohl, of France, with being one of the earliest (if not the earliest) practitioners of the art. His "little white match-stick figures jumped about against a black background as early as 1908." A year later, in America, Winsor McKay produced *Gertie the Trained Dinosaur*, for which he is said to have used some 10,000 drawings. However, it was only with the advent of the soundtrack and the Walt Disney cartoons that animation really "arrived," the authors point out.

The book is divided into four main sections: Factors Governing Animation; The Uses of Animation; Cartoon Animation; and Other Forms of Animation. The section on Cartoon Animation gives a "how to" discussion of the making of an animated cartoon, beginning with the creation of the storyboard and describing in detail the techniques of production. A chapter on Costing the Production is included.

The revised edition contains a chapter on Future Animation Techniques which includes a detailed discussion of computer animation. A glossary of animation terms is included. The book is profusely illustrated with stills from animation films from many countries and also contains a number of diagrams illustrating technical discussions.

The book is well written and can be read for enjoyment as well as for information. — *Edit.*

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The advertisement features a central image of a film strip with sprockets. The film strip is shown in a curved path, with sprockets of various sizes and designs. The numbers 16, 29, 42, 55, 68, 81, 2, 15, 28, 41, 54, and 57 are printed along the length of the film strip. The background is a light, textured surface. The text is arranged in a clean, professional layout, with the company name 'LaVezzi' in a stylized script font.