

books reviewed



Proceedings of the Third International Congress on High-Speed Photography

Edited by R. B. Collins. Published (1957) Butterworths Publications, Ltd., 88 Kingsway, London, W.C.2. Distributed by Academic Press, Inc., 111 Fifth Ave., New York 3. 9½ by 6-in. 417 pp. Illus. Price \$13.00.

The valuable technical content and outstanding organization of the Third International Congress on High-Speed Photography are both evidenced in the 417 pages of the published *Proceedings*, now available to workers in the field.

Upon arrival at the Congress site in the Air Ministry, New Government Offices, Whitehall, London, on 10 September 1956, delegates to the Congress either had with them preprinted copies of the technical papers, or received them at that time. Thus, it was possible to confine the technical sessions to discussions of the papers which had already been examined by the delegates, saving much valuable time.

The published *Proceedings*, therefore, are based upon the preprinted papers, with the addition of the verbatim discussion that followed the announcement of each paper in session.

Other important additions found in the *Proceedings* include a most noteworthy opening address by Lt-Col. Pierre Naslin, of the Laboratoire Central de l'Armement, Paris, entitled "Continuum and Quanta." His broad perspective in analyzing historical developments in the field of high-speed photography, and in relating the overall aspects of communications and control systems on the one hand, with cinematography on the other, provided an excellent basis for commencing this meeting, and makes interesting and valuable reading today.

In addition, the *Proceedings* contain the thorough and incisive review of the Congress delivered on the closing day by Dr. J. S. Courtney-Pratt of the University of Cambridge; a review of the excellent Exhibition by its organizer, Dr. A. R. Michaelis; and a review of the film exhibits that were presented concurrently with the technical sessions, the latter review being prepared by E. G. Hill, Dept. of Scientific and Industrial Research, London.

The fields of interest covered in the *Proceedings* are indicated by the following listing of sessions, with the number of papers in each session given in parentheses:

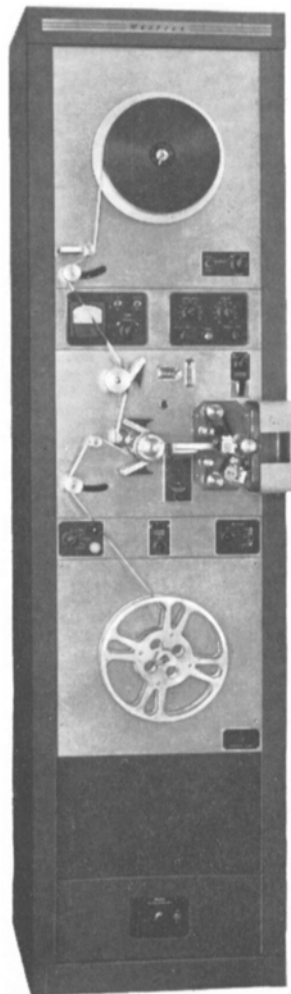
1. Flashlight Sources (4)
2. Flashlight Sources (5)
3. Image-Splitting and Image-Sampling Techniques (5)

4. Inertialess Shutters (4)
5. Application to
 - A. Biology and Medicine (1)
 - B. Machine Analysis (2)
6. Application to Ballistics and Explosives (4)
7. Instrument Aids (3)
8. Photographic Materials (4)
9. X-Rays (3)
10. Film Evaluation (3)
11. Schlieren and Interferometric Techniques (4)
12. Rotating Mirror Cameras (7)
13. Medium Repetition Rate Cameras (3)
14. Application to Aerodynamics (3)
15. Application to Hydrodynamics (5)
16. Review Papers (3)

While it is difficult to comment upon

papers in a limited review article, mention should be made of two papers that especially impressed the reviewer at the time they were delivered at the Congress. They are: "Ultrasonic Fractography," by F. Kerkhof, University of Freiburg im Breisgau, describing the use of the interaction of ultrasonic waves with propagating fractures in glass to obtain fracture propagation rates in two or three dimensions; and "The Dependence of Interpretation on Photographic Technique in Fluid Kinetics Research," by R. P. Fraser and N. Dombrowski, High Speed Fluid Kinetics Laboratory, Dept. of Chemical Engineering, Imperial College of Science and Technology. In the latter paper, the authors have demonstrated in a most elegant manner the radically different results obtained by photographing

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the disintegration of liquid sheets at varying exposure times and by means of several different types of lighting.

The volume is well-edited and thoroughly illustrated. Its excellent readability and handsome appearance reflect the outstanding work performed by the editor, R. B. Collins, and his staff of assistants. Most significant however, is the fact that this volume was published only a few months after adjournment of the Congress, thus making the work of the Congress available almost immediately. It deserves a place in the library of any serious worker in the field of high-speed photography and its applications.

In conclusion, a quotation from the very able summary by Dr. Courtney-Pratt may

be in order. He stated, in commenting upon the opening address by Professor Naslin:

"This comprehensive view and correlation of the principles underlying high-speed photography will allow us to develop new techniques with greater surety, as it provides a better means of assessing how good a proposed technique is; or of deciding whether the possibilities are such that there is no hope of a great improvement in it although we might effect some technical improvement. We will know too whether what we are trying to do is to make a real improvement, to the eventual advancement of the science, or whether we are really trying to re-group or re-shuffle the parameters so that the particular technique we

have chosen is at its most suitable for our own particular subject."

The vast bulk of the information developed in the *Proceedings* of the Third International Congress on High-Speed Photography is of the type that should contribute to the real improvements which Dr. Courtney-Pratt has mentioned.—*Carlos H. Elmer*, 410 B Forrestral St., China Lake, Calif.

Selling Color to People

By Faber Birren. Published (1956) by University Books, Inc., 404 Fourth Ave., New York 16. 219 pp. Illus. Graphs. 10 by 6½-in. Price \$7.50.

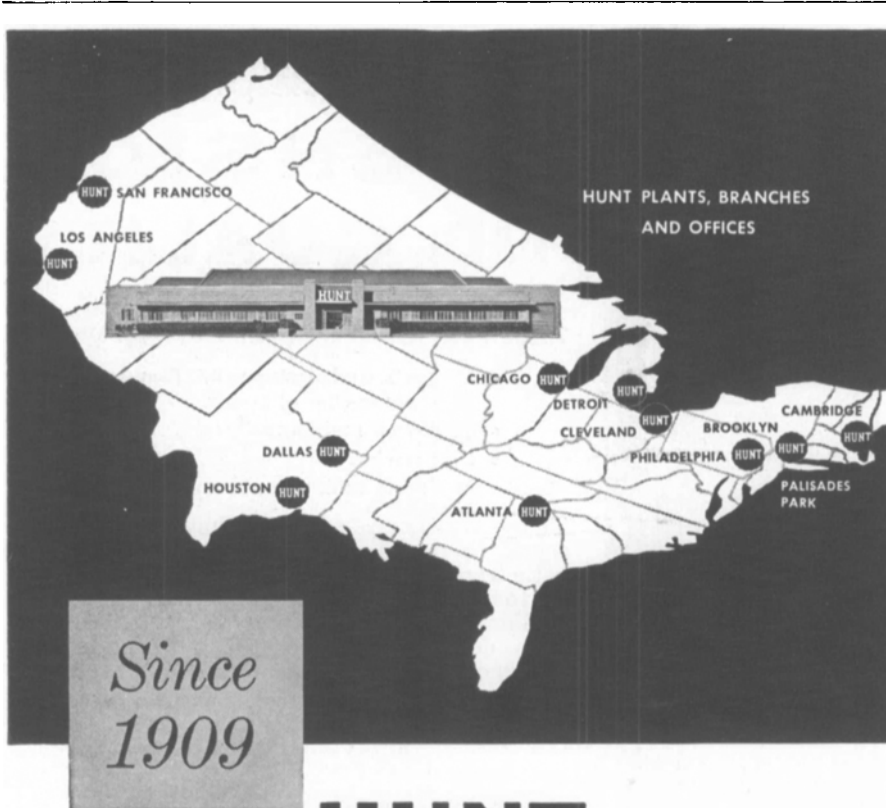
Here is a different kind of book about color. It provides answers to commercial color problems, and in so doing it points up the kinds of commercial pitfalls to which the injudicious use of color can lead. These pitfalls, as Mr. Birren shows, are far from obvious.

Selling Color to People recognizes that there are color trends, and that these trends are not simple to anticipate. Matter-of-fact polls are not of much value, for the reason that the public may not be sure today what it is going to like tomorrow in the way of color. And color trends are not easy to force. A consumer may be susceptible to education as far as product design and utility are concerned, but he seems to remain emotionally stubborn about color. As Mr. Birren says, it is as if the public, wandering in quest of new delights, gropes about with its mind more or less open and undecided. Then, unexpectedly, people gather around the same color wants, and how or why they got there may not be clearly known.

Selling Color to People is an extremely interesting book. Embracing, as it does, strategies of merchandising with color, color and human personality, cycles of color trends, along with many other commercial facets of color, this should be an extremely useful book for business executives, sales managers, stylists, designers and advertising men, and even Mr. John Q. Public, if he wants to learn how color can and will be used on him and for him.

The title, *Selling Color to People*, seems to me to be misleading. Before reading Mr. Birren's book, I had the impression that he thought people had to be sold on color, and so had written a book telling how this could be done. But people do want color—in fact, they demand it, as Mr. Birren states repeatedly in his book. How to understand and to anticipate an unknowing public is what Mr. Birren is really telling us how to do.

I found one mild disappointment in this book — namely that the subtractive or printing primaries are called "red", "yellow" and "blue," rather than magenta (red-blue), yellow (red-green) and cyan (blue-green) as they should be. Regrettably the use of "red" and "blue" in this loose fashion for magenta and cyan undoubtedly acts as a bar to a more widespread understanding of the principles of subtractive color mixture.—*Wilton R. Holm*, Photo Dept., E. I. du Pont de Nemours & Co., Parlin, N.J.



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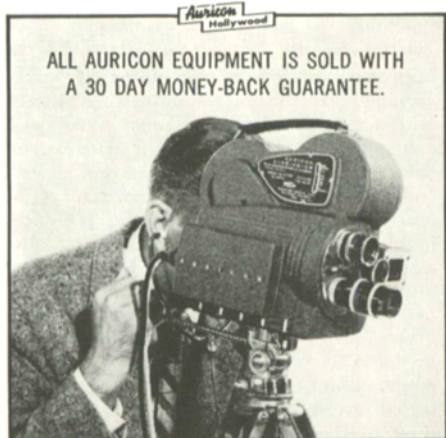
FOR RESEARCH ASSISTANCE WRITE TO:
THOMAS T. HILL,
Director Photographic Research

FOR TECHNICAL SERVICE WRITE TO:
CHARLES F. LO BALBO,
Motion Picture Technical Advisor



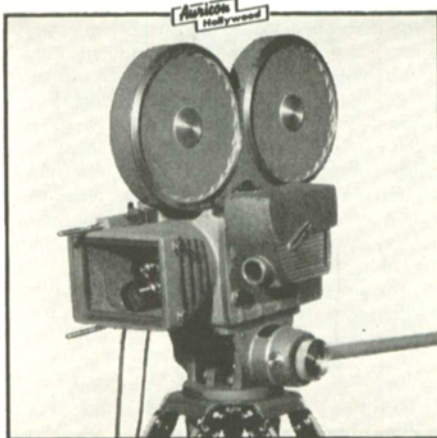
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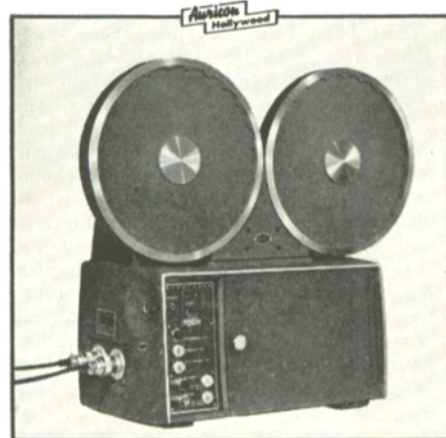
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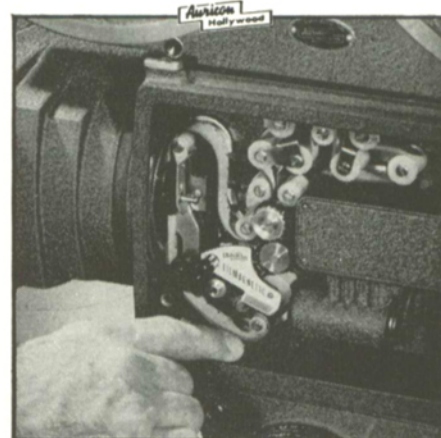
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MANUFACTURERS OF SOUND-ON-FILM RECORDING EQUIPMENT SINCE 1931

Proceedings of the National Electronics Conference Vol. 12

Published (1957) by National Electronics Conference, 84 E. Randolph St., Chicago 1. i-xiv + 1095 pp. (incl. numerous charts, diagrams and tables) + 31 pp. contents of previous vols. 6 by 9-in. Price \$5.00.

After eleven consecutive years of publication, we have begun to accept the annual volume of NEC Proceedings as one of the inevitable concomitants of living, like death and taxes; however, we should not permit this familiarity to cause us to minimize the value of the yearly product. It remains consistently an excellent job of publication, covering a wide range of topics, and containing a large amount of new, significant, and useful information.

The variety of subjects covered, in the more than 100 papers contained in this volume, makes it a difficult, perhaps impossible task for any reviewer to do it justice in a short article. The material ranges from general papers on such topics as "The Space Satellite Program" by J. P. Hagen, through eminently practical papers on topics such as "Selenium Rectifiers for High Voltage" by V. Wouk, and "A Description of Plated Printed Wiring Boards and a Comparison of Their Performance Characteristics With Those of Etched Boards" by J. J. Schoebel and D. E. Yost, to more complex and theoretical papers on "Stability Criterion for Digital Feedback Control Systems" by J. Tou, "Transient Analysis of Discrete Networks by Dirichlet Transforms" by A. E.

Sabroff and T. J. Higgins, and "Network Design by Use of Modern Synthesis Techniques and Tables" by L. Weinberg.

There is clearly something for everybody here, and it is generally well presented and of good quality. While the number of papers specifically concerned with television is small, with only one, entitled: "A Survey of TV System Parameters Applied to Closed-Circuit Industrial TV" by F. R. Pike, actually mentioning television by name, many of the papers contain information as useful to the television and sound engineer as to any other electronic engineer. A few papers of this sort which might be mentioned are "Analysis and Design of Transistor Bias Networks" by S. K. Ghandhi (which appears almost unchanged in a new transistor text of which he is co-author), "Evaluation of High Powered Outdoor Sound Systems" by R. W. Benson, and "Building Reliability Into Cathode Ray Tubes" by R. K. Reichenbach.

This reviewer might summarize his comments by stating that while the book is something of a hash, the ingredients are of high quality, and, if the reader will pardon a slightly mixed metaphor, this is not a case of too many cooks spoiling the broth. The price has been maintained at \$5.00 over the years, while the number of pages has almost doubled over the contents of the first volume. Under these conditions it is certainly to be recommended, using the jargon of certain consumer research organizations, as a "Best Buy."—S. Sherr, General Precision Laboratory Inc., Pleasantville, N.Y.

The Lion's Share

By Bosley Crowther. Published (1957) by E. P. Dutton & Co., 300 4th Ave., New York 10. 320 pp. Illus. 5½ by 8-in. Price \$5.00.

While reading *The Lion's Share* one is impressed, almost to the point of being appalled, by the vast amount of research and documentation that must have preceded this pared-down, tight account of the giants who created a baroque, super-colossal world and whose enormous vulgarities, wild eccentricities and fabulous luck have come legend, symbolizing one aspect of the American Dream. As the author explains in the foreword, he set out to write of the "growth, grandeur and grotesqueries of American films" and to do so he tells the story in terms of the people who made them. The quiet, understated style of the book is in effective contrast to the flamboyance of the material and the deft little touches of wit come with the flash of a rapier.

Mr. Crowther who, if not the dean of motion-picture critics, is certainly one of the more grave and erudite, has selected the story of Metro-Goldwyn-Mayer and it's parent, Loew's Inc., to represent the whole gaudy era. Viewing his subject with a clinical although not necessarily an unsympathetic eye, the author tells of the great personalities of the film world in a mood of cool detachment. If the book can be said to have a "hero" other than the MGM lion it is Irving Thalberg whose brilliant portrait is shaded with a touch of pathos.

In an especially interesting chapter, happily entitled "The Crash of Sound," the author credits Lee de Forest's miracle "device" of the audion, invented in 1906, for the rapid development of sound after its early beginnings. In a significant comment, the author says, "The notion... that *The Jazz Singer* was a miracle that touched the screen one fateful evening in 1927... is an unfortunate impression — particularly in these days when the screen is undergoing an evolution comparable to the prolonged change to sound. For the factors that brought the transformation were actually extensive and involved, beyond the manipulation of any individual will. They included the forward push of science in the new electronic age that was as inexorable and compelling as it was in the period of invention when the movies were born."—R.H.

Responsibilities of Film Producers and Sponsors is a 40-page publication issued by the Association of National Advertisers, Inc., 155 E. 44 St., New York 17, for the information and benefit of both sponsors and producers of nontheatrical films. The report discusses five phases of film-making: Planning, Script, Production, Prints, and Distribution. The report is presented in a two-column format with the sponsor's responsibilities outlined in one column, parallel to the column describing similar responsibilities of the producer. An appendix contains examples of contracts and a glossary of terms used in the report. It is available to nonmembers of the ANA at \$5.00 a copy.

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Magnetic Recording Handbook

By R. E. B. Hickman. Published (1956) by George Newnes, Ltd., London. Distributed by Transatlantic Arts, Inc., Hollywood by the Sea, Fla. 5½ by 8½-in. 176 pp. 109 Illus. Price \$5.00.

A wealth of practical information on tape recorders used in Great Britain is included in this book. More than half of its 176 pages and 109 illustrations describe British machines which range from pocket models to fourteen-channel airport installations. Drum-type and disk-type dictation machines are included. A chapter on special methods and applications deals briefly with FM, PM, and boundary-displacement recording, "stereosonic" tapes, the RCA system of television recording, etc.; however, computers, data and telemetering, and other non-sound applications are not treated in detail.

Sound film equipment is limited to the GB-Bell and Howell Model 630D Magnetic Optical 16mm Projector, and to the Cole Sound Magnetic Adaptor which can be installed in Victor 16mm projectors. Professional 35mm equipment is considered beyond the scope of this book.

Chapters on practical recording and on maintenance and servicing give useful information for the professional recording technician, as well as for owners of tape recorders who want to get the most out of their equipment.

The brief history of magnetic recording is apparently derived from literature available to the author, who gives due credit to British and German work; but is not aware that high-frequency bias was used in the USA before World War II, that present-day high coercivity tapes were developed here, and that (with one or two early exceptions) American recording machines did not stem from wartime German designs but from independent development.

The chapter on theory is also brief, but gives a general background for one who is interested in practical aspects. A bibliography lists over 100 references for further study.

Appendixes include an opinion on the legality of home recording of broadcast programs, CCIR frequency response characteristics for interchangeable tapes, and standard spools and hubs for magnetic tape.

All in all, this *Magnetic Recording Handbook* duplicates little of what is available in the USA literature, and is a valuable addition to a complete recording library.—*Marvin Camras*, Physics Research Dept., Armour Research Foundation of Illinois Institute of Technology, 3440 South State St., Chicago.

Das Agfa Magnettonband, Seine Anwendung und Prüfung (Agfa Magnetic Tape, Its Application and Testing)

By K. A. Mittelstrass. Published (1957) by VEB Wilhelm Knapp Verlag, Halle (Saale), East Germany. Paper cover. 85 pp. 34 Illus. 5½ by 8½-in. Price DM 3.50.

This booklet (in German) outlines the fundamentals of tape recording, and describes in detail the many tests which are applied to magnetic tape.

Emphasis is placed on operational tests which include sensitivity, uniformity, fre-

quency response, distortion, noise, inter-layer crosstalk, etc. These are made on a special test rig equipped with signal-generators, filters, and meters. Although equipment for magnetic testing is mentioned, numerical values for the magnetic properties of Agfa (or any other) tape are not stated.

A pre-recorded test tape available from Agfa is described. This is accurately recorded at $90^\circ \pm 3'$ for azimuth alignment, and has test frequencies ranging from 40 to 12,000 cycles for checking the playback response of machines at 19 cm (7½ in.) per second.—*Marvin Camras*, Physics Research Dept., Armour Research Foundation of Illinois Institute of Technology, 3440 South State St., Chicago.

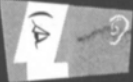

Technisches Kinetaschenbuch, published by Zeiss Ikon, Kiel, Germany, is a 4 by 6-in., 155-page pocketbook containing every type of reference material for projectionists. It is published only in German, and is made available by Zeiss Ikon to its customers on a complimentary basis. Among the contents are relevant standards, measurement conversion tables, circuitry and all kinds of informative matter on lenses, lamps, filters, projector mechanisms, sound systems and projection practice in general.

This little booklet is the work of Herbert Tümmel, of Zeiss Ikon ("Design of projection rooms for German motion-picture theaters," *Jour. SMPTE*, 66: 123-126, Mar. 1957). Mr. Tümmel is also the editor

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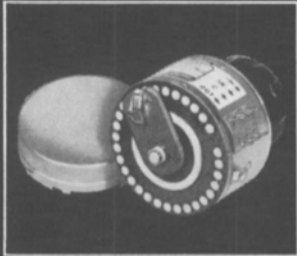
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of the well-known technical periodical put out by Zeiss Ikon, *Bild und Ton*, which is published in English as *Picture and Sound*.

Lexikon der Kinotechnik

Die Theorie und Praxis der Filmwiedergabe, by Alfred R. Schulze. Published (1956) by VEB Wilhelm Knapp Verlag, Halle (Saale), East Germany. 6 by 8-in. 508 pp. 48 illus. 91 tables. Price: DM 16.

This encyclopedia is intended primarily for engineers, projectionists and theater managers and purports to cover all the available information on the construction and operation of motion-picture equipment, including mechanical troubles and their causes. With the technological expansion of the motion-picture industry it has been found necessary to include many terms borrowed from the areas of acoustics, electroacoustics, electrotechnics, optical and magnetic sound, and optics. The alphabetically arranged articles cover all types of film processes and handling, film standards, maintenance and repair problems and projection practice. An appendix contains the text of the official regulations governing the industry in East Germany.

Cinematheque de Belgique, publisher of the *World List of Film Periodicals and Serials* in 1955, has announced the availability of a 56-page *First Supplement* which completes the main volume. The book is bilingual (French and English) and mentions 131 new film periodicals and 245 corrections and additions to the former notes.

It contains a general index of titles, an index of subjects and an index of countries. Price is \$1, which can be sent by postal money order or Unesco book coupons (crossed checks also accepted) to the publisher at Palais des Beaux-Arts, 23 Ravenstein, Brussels.

1957 Film Daily Year Book

Jack Alicoate, Editor-in-Chief. Published (1957) by Film Daily, 1501 Broadway, New York 36. 1280 pp. illus. 6 by 9-in. Price \$15.00. (The price includes a year's subscription to the publication *Film Daily*.)

The *Film Daily* year books, published annually since 1918, are perhaps the best known and most comprehensive reference sources for persons connected with or interested in the film industry. This year's volume includes every conceivable item of information that might be useful to industry personnel or to editors, writers and researchers. A few of the listings include theaters, industry personnel, equipment manufacturers and publications. Another helpful feature is the listing of Los Angeles and New York telephone numbers of producers, studios, publications, associations and major hotels, restaurants, air lines and railroads.

The book also contains copyright information, analysis of foreign markets and informative articles by authorities on various phases of film production.

Fundamentals of Optics Third Edition

By Francis A. Jenkins and Harvey E. White. Published (1957) by McGraw-Hill Book Co., 330 W. 42d St., New York 36. vii + 637 pp. Illus. 6 by 9-in. Price \$8.50.

This is the third edition of a book which has acquired a reputation in the twenty years of its existence. It is designed as a text for an advanced undergraduate course in optics, but has also extensively served as a useful reference on general optics.

In its first form the book covered only physical optics. The second edition added geometrical and quantum optics. The third edition keeps the same general subject matter, but derivations have been simplified and a few new items of current interest have been introduced.

The topics in geometrical optics include reflection and refraction phenomena, thin and thick lenses, mirrors, ray tracing, effects of stops and aberrations, and a brief survey of optical instruments.

In physical optics the topics cover the various phenomena of interference and diffraction, of absorption, scattering, polarization and reflection, a discussion on the electromagnetic character of light, electrooptic and magnetic phenomena, and the velocity of light.

The book is especially useful because a number of topics are treated unusually well. Examples of this are the discussions on third order lens aberrations (which are usually much too sketchy in treatises at this level) and on the effects of stops (which again are rarely included). The photometry of optical systems represents still another example of fuller treatment than usual.

On the other hand it must be noted that the discussion on eyepieces is quite conventional. As in most treatments, even moderately advanced, it fails to indicate the primary reason for use of the field lens, namely to reduce loss of light toward the edges of the field of view. In discussing the achromatization of the Kellner eyepiece with Porro prisms, the aberration characteristics of the latter are left in a very sketchy state.

It is recognized that a compact volume like this must omit some material, but the motion-picture engineer will regret that there is no discussion of projection optics, particularly that condensers are ignored. Microscope condensers are also omitted.

A very desirable feature of the book is the frequent reference to both older and current literature. As the author notes, this not only gives the reader access to detailed information, but it also emphasizes continuing developments in optics.

The book will be important to motion-picture and television engineers who have occasion to consult basic topics in optics.—*Pierre Mertz*, Bell Telephone Laboratories, 463 West St., New York 14.

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Commercial Television Year Book and Directory. 2d Ed. Published (1957) by Business Publications Ltd., Mercury House, 109-119 Waterloo Rd., London, S.E. 1. 5½ × 8½ in. 272 pp. Price: \$5.00. This reference book to British commercial television has been considerably enlarged since the first edition appeared. In addition to the usual directory listings of TV stations, advertising rates, etc., it now contains an artists' who's who, agents' addresses, a bibliography of television, and a number of special articles and maps.

Noise Control, a monthly periodical of the Acoustical Society of America, is being expanded in its field of coverage to include shock and vibration control. The Acoustical Society is a member society of the American Institute of Physics, 335 East 45 St., New York 17.

The new policy was inaugurated with the September issue which featured articles on vibration and shock, including an article by Dr. Walter Ramberg, Chief of the Mechanics Division, National Bureau of Standards. Subsequent issues will have discussions of device and materials used to isolate vibration and articles on current problems in industrial and military installations.

The magazine, now in its third year is of special interest to engineers, architects and hygienists. Recent issues of the publication have considered noise problems in motion-picture, radio and television studios; in heating and ventilating and air-conditioning systems; industrial zoning and

community noise and conservation of hearing in industry.

An index of RCA technical papers for the year 1956 is available upon request from Radio Corp. of America, RCA Laboratories, David Sarnoff Research Center, Princeton, N.J. The Index lists substantially all technical papers by RCA employees published during 1956. A limited number of indexes covering the years 1919-1945 (Vol. I), 1946-1950 (Vol. II) and 1951-1955 (Vol. III) are still available.

The Technical Book Co., 253 South Spring St., Los Angeles 12, has issued a "New Books" list of professional and scientific books, including publications in such scientific fields as communication and management; mathematics; electronics; electrical engineering; and radio and television are included. The list is available from the company upon request.

The American Society of Colleges for Teacher Education, 11 Elm St., Oneonta, N.Y. has issued a series of bulletins on *Television in Teacher Education*. Release No. 4 discusses "Points of View Regarding Television in Education." A statement by the Committee on Television of the American Council on Education warns against the extremes of an uncritical acceptance of television in education and the equally serious mistake of failing to explore its full possibilities as an educational tool.

Interscience Publishers, Inc., 250 Fifth Ave., New York 1, has been appointed exclusive, world-wide distributors for publications of the Microwave Research Institute of the Polytechnic Institute of Brooklyn. The publications include the Symposia Series, edited by Jerome Fox, and the two-volume *Handbook of Electronic Measurements*, reviewed in the July Journal, p. 442.

SMPTE Test Films

Test films planned by the Society's technical committees and produced under the Society's exact supervision are available from the headquarters office at 55 West 42 St., New York 36. Catalogs containing brief descriptions of each film are obtainable on request.

These films are used by manufacturers for testing the performance of new equipment, by television station technicians for lining up and adjusting film pickup systems, by maintenance men for "in service" maintenance of projectors and sound equipment, and by dealers for testing and demonstrating equipment.

The complete line of films is as follows:

Television—Picture Only

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- 16mm Television Test Film, including Alignment and Resolution Section
- 35mm Color Television Test Film
- 16mm Color Television Test Film
- Color Television Test Slides 2 × 2 in.
- 35mm Television Leader
- 16mm Television Leader

CinemaScope

- Level Balance Test Film
- Multifrequency Test Reel
- Loudspeaker Balance Reel
- Stereophonic Test Reel
- Flutter Test Film
- Loudspeaker Phasing Test Film
- Constant Level Test Film
- Channel-Four Test Film
- Projector Alignment Chart
- Projector Alignment Chart (Optical Track) Standard Sprocket Holes

Visual 35mm — Picture Only

- Focus-and-Alignment Section
- Travel-Ghost Target Section
- Jump-and-Weave Target Section

Magnetic — 16mm Sound Only

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- Multifrequency Test Film
- 400-Cycle Signal-Level Test Film
- 300-Cycle Flutter Test Film

Picture and Sound — 16mm

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- Multifrequency Test Film
- Scanning-Beam Illumination Test Film
- Buzz-Track Test Film
- Sound-Focusing Test Film
- 400-Cycle Signal-Level Test Film

Picture Only — 16mm

- Registration Test Film
- Travel-Ghost Test Film

Glass Slide — 16mm

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