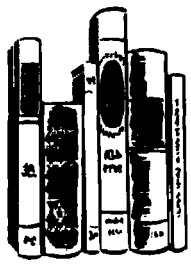


books reviewed

Lighting for Television

Using the Image-Orthicon Tube in the Studio, E.B.U. Technical Monograph No. 3101

By J. Bernhardt (in collaboration with J. Bourdon, T. H. Bridgewater, D. C. Lightbody, M. Morel, G. Orsini, M. Oudin, G. Schadwinkel, C. Van Loo). Preface by G. Hansen, Director of the E.B.U Technical Centre, 32, avenue Albert Lancaster, Brussels 18, Belgium. 98 pp. illus. $11\frac{3}{4} \times 8\frac{1}{2}$ in. Paperbound. Price, 100 Belg. Fr, incl. postage by surface mail.

E.B.U. Monograph No. 3101-1964, Lighting for Television using the image-orthicon tube in the studio, is one of the most comprehensive and down-to-earth reports ever published on television studio lighting. The simplicity and clarity which is condensed into 91 pages of printed matter and illustrations is in itself refreshing. Most important, the material is of interest to both engineers and operating personnel and it can be readily understood by either.

This report was produced by the European Broadcasting Union in order to compare the lighting facilities and methods used in the United Kingdom, Federal Republic of Germany, Italy, Belgium and France. The purpose of this effort was to evaluate trends and tendencies in the choice of apparatus and the methods of using it. These aims were accomplished; but, in addition, the report, due to its universal nature, serves as a communications link between engineering design groups and operating personnel as well as between countries.

Section I offers a clear, concise explanation of image-orthicon characteristics, such as sensitivity, halo, edge effect, contrast, etc. Further, it describes the lighting techniques and levels of illumination required in lighting for the image-orthicon tube.

Descriptions and illustrations of luminaires and control systems are included in Section II. A considerable amount of attention is allotted to grid systems and associated suspensions, or hangers. It is interesting to note that the grid and hanger systems employed in Europe are substantially more sophisticated than those normally used in the United States.

Operational practices and staff requirements are the subjects of Sections III and IV. Described are procedures for setting up lighting-control equipment, functional layouts of control equipment, and the control of lighting as it relates to artistic expression.

Appendix II and Appendix III are of particular interest. Both are devoted to the actual practice of lighting television shows. In addition to the printed descriptions, more than thirty illustrations are displayed. In Appendix II, which is a basic introduction to lighting practices, camera and luminaire plot plans, together with the resulting pictures, are illustrated. Both do's and don'ts are shown.

Progressing into Appendix III, typical examples of practical lighting layouts used for staging various types of television shows are illustrated. In addition to the illustrations included in Appendix II, each example is accompanied by a complete list of the type, rating and function of each luminaire used. Scene content varies from a simple news-type show in Italy to a complex dramatic production in France.

Although of European origin, the concepts covered in the report are universal. It is highly recommended as a lighting reference for engineers, lighting directors, camera men and other operating personnel in the United States and elsewhere. However, it should be noted that the definition of beam angle and field angle, together with some of the terminology in Appendix I, is not in agreement with standards established in the United States.—*Charles J. Neenan*, CBS Television Network, 485 Madison Ave., New York, N.Y. 10022.

Optoelectronic Devices and Circuits

By Samuel Weber. Published (1964) by McGraw-Hill Book Co., 330 W. 42 St., New York, N.Y. 10036. 360 pp. + viii pp. Preface. Table of Contents. Illus. Diagrams. 11 by $8\frac{3}{8}$ in. Price $15.00.

The marriage of optics with electronics, of recent times, has been extraordinarily fruitful in broadening our understanding of the nature of the phenomena that these cover, as well as in generating a whole host of quite new devices. The editor of *Electronics* has here selected a number of articles that have been published in the magazine in the last few years on phases of this subject, and reprinted them together as one book.

The subjects dealt with, by chapters, are modern optoelectronic principles, laser design and application, optical communications, military and space applications, infrared systems, display systems, pattern recognition, computers and digital applications, industrial applications, instrumentation, new concepts in television, and unconventional optoelectronic devices. The style of presentation is, of course that of *Electronics* magazine, namely somewhere between a popular treatment and a really scientific discussion. It is especially helpful to one who is anxious to keep up with the latest ideas, but is not too much of a specialist. Naturally the few pages devoted to each paper do not permit a discussion in depth, but they give at least a quick idea of the material. Of course, some of the bright new ideas may not really pan out. Many types of color and black-and-white television picture tubes have been broached in the last twenty years, but few of these have turned out to be commercially usable; therefore the engineer has to take the ideas cautiously.

It is interesting, nevertheless, to see all of this material gathered together, in an art that is growing so very fast. The book is marred by a number of typographical er-

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

NEW

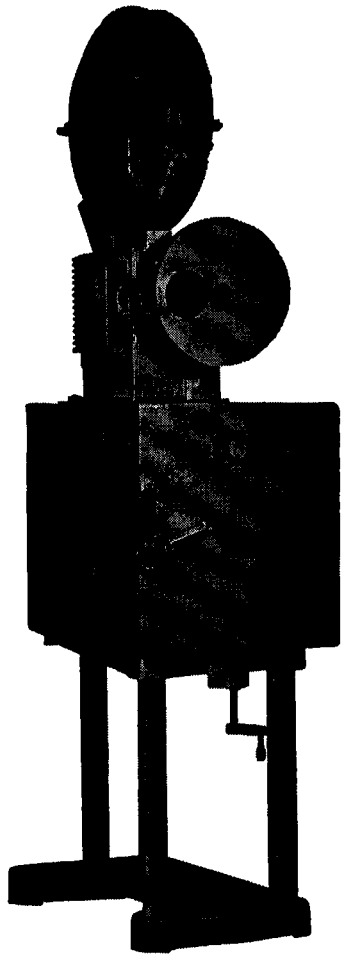
The projector is a converted front shutter Simplex with a two pin intermittent. 16mm or 35/32 film runs at a speed of 144 ft. per minute while 35mm film runs at a speed of 165 ft. per minute.

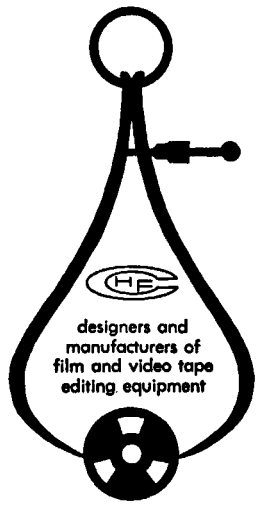
1. A variac controls the light intensity.
2. A 500 watt lamp is used for 16mm and a 1,000 watt for 35mm (a blower is used to cool the lamphouse).
3. A 2½ inch projection lens is furnished with each unit.
4. A start-stop lever controls the power to the lamp and motor.
5. The magazine and take up core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

NOUVEAU

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

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





NUOVO

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

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

NUEVO

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

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

HOLLYWOOD FILM COMPANY

REELS / CANS / CASES

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

rors. Instead of correcting these, the editor has included a supplementary section on "Comments and Errata," where readers, and the authors themselves, have a chance to rectify misconceptions and important errors. The book is also provided with a short index.—*Pierre Mertz*, Consultant, 66 Leamington St., Lido Beach, L.I., N.Y. 11561.

Making and Coating Photographic Emulsions

By V. L. Zelikman and S. M. Levi (translated from the Russian by the Consultants Bureau, N.Y., and edited by E. A. Sutherns). Published (1965) by Focal Press, Inc., 20 E. 46 St., New York, N.Y. 10017. 312 pp. Diagrams. Tables. 9¾ by 7½ in. Price $23.00.

This book attempts to cover in comprehensive fashion the entire field of photographic emulsion making. In addition, much of the material which originally appeared in *Film Coating Theory* by Deryagin and Levi has been rewritten in two chapters on emulsion coating. The four chapters primarily concerned with emulsion manufacture discuss:

(1) precipitation of silver halides and the factors which affect grain size and photographic properties;

(2) physical or first ripening and the many factors which affect grain size distribution, crystal shape and sensitivity, including the effects of bromide ion, time, temperature, concentration, and halide type;

(3) washing methods;

(4) chemical ripening and the effects of gelatin impurities, various sensitizers including gold and sulfur types, electrolyte concentration, time and temperature;

(5) aging problems; and

(6) emulsion manufacture, including considerable discussion of continuous processes and the adjustment of contrast by blending emulsions and use of multilayers.

Many references to the literature are given, primarily to Russian sources.

The book, a translation from the Russian, is well written, though not easy to read because it is written more as a summary of the state of the art than as a textbook. It covers a wealth of information not normally available to one source and should be a worth-while reference book for any scientist or engineer in this field.—*W. R. Thomas, Jr.*, Photo Products Dept., E. I. du Pont de Nemours & Co., Parlin, N. J. 08859.

Photographic Lenses

By C.B. Neblette and Allen E. Murray. Published (1965) by Morgan & Morgan, Inc, 25 Main St., Hastings-on-Hudson, N.Y. 10706. 152 pp. Diagrams. 8½ by 5½ in. Price $6.95.

Mr. Neblette is well known for earlier books on various phases of photography. The present work, according to a statement on the dust jacket, "is an essentially non-mathematical treatment of photographic optics and photographic lenses for the general reader. There are hundreds of illustrations covering all the important lens groups. This can be a fascinating photographic text for the beginner or professional." And the book is exactly that.

The text covers elementary lens theory—with some good points on photometry—followed by a brief history of the development of the photographic lens, including some information on the manufacturers in the United States, Europe and Japan. The text continues with a discussion of lens performance and lens testing. The many pitfalls in this subject, and why simple performance specifications are so apt to be illusory and meaningless, are explained. Then there is given an extensive list of all the major lenses for 35mm cameras, 2¼-× 2¼-in cameras, larger cameras, zoom lenses, mirror systems, and process, macro and enlarging lenses. No lenses are listed specifically for motion-picture cameras, nor for projectors. The cross-sectional diagrams of the lenses in these lists are fascinating, but they really convey very little information to the reader unless he is a sophisticated lens designer and knows a good deal of the material anyway.

A short index of subject matter and a trade-name directory are also provided.—*Pierre Mertz*, Consultant, 66 Leamington St., Lido Beach, L.I. N.Y. 11561.

Television and Society:

An Inquest and Agenda for Improvement

By Harry J. Skornia. Published (1965) by McGraw-Hill Book Co. 330 West 42 St., New York, N.Y. 10036. 268 pp., appen-

dixes, notes, index. 5⅜ by 8 in. Price $7.50.

Harry J. Skornia, who has had experience in both commercial and educational broadcasting at home and overseas and is now Professor of Radio and Television at the University of Illinois, has a vision of what American broadcasting could and, according to him, should be. *Television and Society* is an incisive analysis of the status quo in the mercantile-minded television industry and an impassioned plea for making the electronic communications medium into a true profession. In his final chapter, "An Agenda for Change: Some Proposals and Recommendations," he makes some specific suggestions "for national discussion, rather than as definitive proposals." But he feels that time is of the essence and hopes that "the drastic changes necessary in broadcasting can be made before the full effects of satellite and color broadcasting are added to the present [problems]."

Dr. Skornia's "Agenda for Change" includes calls for a national study of "the changes in broadcast structure, policy, leadership, and goals, which the nation requires"; the establishment of a national public-service radio and television network which would exist parallel to commercial networks and "serve in the electronic area the same purpose that the *Congressional Record* and government publications at the federal, state, county, and city levels now serve in printed form"—he points to New York City's WNYC as a precedent; the installation of feedback mechanisms on privately owned television and radio sets to make them "electronic instruments of democracy"—the hardware for such a two-way communications system is now in use on some pay TV; regulatory changes, possibly including the creation of a Department of Communications headed by a man with cabinet rank, since, Dr. Skornia says, "there is little hope that the present Federal Communications Commission, the Communications Law of 1934, and later amendments to the latter can do what is needed"; congressional steps, including the divestment of broadcast interests by congressmen "serving on committees supervising the FCC and broadcasting"; industry steps, including the installation of a lock on each set sold, so parents can control what youngsters watch; and impartial research into the efforts of television, which Dr. Skornia sees as far more deleterious than does the industry which says it is "giving the public what it wants."

Dr. Skornia has deep faith in the electronic media despite his despair. "American television could probably do more than the United Nations to lay the foundations of peace," he declares. "United States broadcasting with its great potential could lead all the rest of the world in such a crusade. It should; it must. Even now United States television is making history. For history records the failures of nations and leaderships as unremittingly as their successes."—*Ed.*

The Fourth Symposium on Instructional Communication, sponsored jointly by The University of California, UCLA and Berkeley Campuses, and the Society's **Hollywood** and **San Francisco Sections** was held May 18 with concurrent sessions conducted at UCLA and the Berkeley campus. The theme of the Symposium was "Lesser Known Techniques in Telephonic Visual and Aural Communication.

Two-way audio public address systems (covering the 475 miles between the two Campuses), slow-can television (ITT Videx) and Electronic Blackboard (Electrowriter) systems enabled both audiences to hear the same speaker, ask questions and see simultaneously the same documents, photographs, TV live scene still frame shots, diagrams, equations, sketches, etc. Conventional 3 kc telephones in the University's intercampus private line telephone system were utilized, one for two-way audio and two others for two-way video transmission.

Chairmen of the afternoon session were Ken Winslow, Berkeley, Coordinator EYV, and John Beeston, Director Academic Communications Facility, UCLA.

The evening session consisted of a joint meeting of the Society's Hollywood and San Francisco Sections conducted through two-way audio and visual communication channels. Jack Hall, Hollywood Section Chairman, and Stewart Macondray, San Francisco Section Chairman, were in charge.

The audience at Berkeley included more than 125 persons during the afternoon, and about 80 at night. The UCLA audience exceeded 200 at both sessions. Many persons traveled from Colorado and Nevada, but most of the group were from areas within 10 miles of the two campuses.

At Berkeley, informal groups ate together at the Student Union prior to the meeting, and early-comers were able to examine the equipment before the meeting. Introductions between two groups were on an *ad-lib* basis and the general tenor of the meeting was one of spontaneity. Audience reaction was excellent, and after the conclusion of the question-and-answer period