

16 & 8mm Motion Pictures

Changes in five American Standards were given serious consideration: 16mm Camera Aperture (Z22.7-1950); 16mm Projector Aperture (Z22.8-1950); 16mm Double Perforated Film, Usage in Camera (Z22.9-1946); 16mm Double Perforated Film, Usage in Projector (Z22.10-1947); and 8mm Reels (Z22.23-1941). The first two of these involved edge-guiding. Based on a recent study by Messrs. Chandler and Lyman, agreement was reached to ballot the full committee on revision of these two standards. The next two were concerned with rate of 16mm silent film travel through the camera and projector. Now that magnetic striping seems likely to be employed widely, 16mm "silent" projectors are not necessarily silent. Action on these two standards, under consideration for the last two years, was finally concluded and revised drafts are to be submitted to the Standards Committee for further processing. Proposed revision of the 8mm reel standard was approved for letter ballot of the full committee. In addition, further study of a test film for 8mm projectors and standardization of a 16mm reel was initiated.

Sound

Two test film standards, 35mm Sound Focusing (Z22.61-1949) and 35mm Buzz Track (Z22.68-1949), were reaffirmed without change and are to be submitted to the Standards Committee for further processing. In addition, exploratory talks were held on standardization of perspective sound, the status of studies on the absolute measurement of magnetic level was reviewed and the quality of the existing four-track CinemaScope test film was investigated and found adequate.

Magnetic Recording Subcommittee

One proposed standard, 35mm Magnetic Azimuth Checking Test Film, was withdrawn since this specific test film is no longer needed. A new proposal was initiated establishing the separation between the picture and corresponding sound for 16mm film employing magnetic sound recording. A report was made on the status of the studies made by the Navy on the absolute measurement of magnetic level; this report is to be distributed to all members of the subcommittee. Plans were made for the production of some experimental footage of 16mm azimuth test film of the 1000-pulse, 140- μ sec dimension variety. This film is to be distributed to the committee for consideration as a desirable method of setting azimuth.

Television

This group was primarily concerned with concluding the arrangements for the production of a test film and test slides for color television. Every effort is being made to make this test material available within the first few months of 1955.

PH22

This meeting was called for the purpose of reviewing the status of the international standardization program and to establish the United States position as to the participation in and calling of a special meeting of ISO/TC 36 Committee on Cinematography for June 1955. The conclusion was

reached that the United States would not request the arrangement of such a meeting by ASA as Secretariat for the ISO committee but would cooperate in the formation of a delegation to attend a meeting, if there is sufficiently widespread interest on the part of the other members in having one called.

International Standardization

The ASA, as Secretariat, canvassed the members of ISO/TC 36, Cinematography regarding their interest in participating in a June 1955 meeting. The response was overwhelmingly in favor and it was therefore decided to call a meeting of this committee in Stockholm, Sweden, sometime during the period of June 6 to 18, 1955. Preparations are now being made to form the United States delegation and to establish the items the United States would like to have on the agenda.—*Henry Kogel*, Staff Engineer.

Biographical Note



Dr. Alexander Ernemann, General Manager of Zeiss Ikon A.G., has just celebrated the completion of his fiftieth year in the motion-picture industry. When Dr. Ernemann went to work in his father's factory in 1904, 17.5mm film with center perforations was in use and projectors were of brass with wooden housing. Ernemann early traveled to the U.S. and as a result of experience gained on his travels began to manufacture an all-metal projector, the Ernemann Emperor, which continued to be a standard projector until well after the First World War.

In commercial cooperation with Krupp, of Essen, Ernemann put out the first German sound film projector in 1925. Since 1926, when the firm of Zeiss Ikon A.G. was organized, he has been associated with that company, year after year bringing out his numbered series of Ernemann projectors. The latest of these to appear from the Kiel plant, to which Zeiss Ikon moved from Dresden after World War II, is the Ernemann X, which incorporates a magnetic sound reproduction unit.

section reports

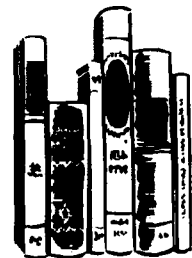


The Central Section held its last meeting of 1954 on December 13 in the United Airlines building at Midway Airport. Approximately 100 people listened to J. E. Sandow, Chief of Flight Training at United Airlines, discuss the operation of the Dehml training unit for training airline pilots. This apparatus constructed by Douglas provides very impressive simulated flight for pilot training along with all possible emergency situations. Actual demonstration of the training unit was conducted by two United Airlines pilots. Coffee and doughnuts were served following the meeting.

At the pre-meeting Board of Managers session, the three new managers recently elected in the Central Section were welcomed. These are: D. W. Ridgway, Encyclopaedia Britannica Films; R. G. Herbst, Bell & Howell Co.; and J. C. Diebold, Wilding Picture Productions. Preliminary plans for the 77th Semiannual Convention in Chicago were discussed.—*Kenneth M. Mason*, Secretary-Treasurer, c/o Eastman Kodak Co., 137 N. Wabash Ave., Chicago 2.

The Southwest Subsection election results have been announced by I. L. Miller, with the following officers elected for 1955 and Managers for 1955-56:

Ernest D. Gaw, Chairman
Orville H. Mills, Secretary-Treasurer
Bruce Howard, Manager
Wm. H. Carter, Jr., Manager



books reviewed

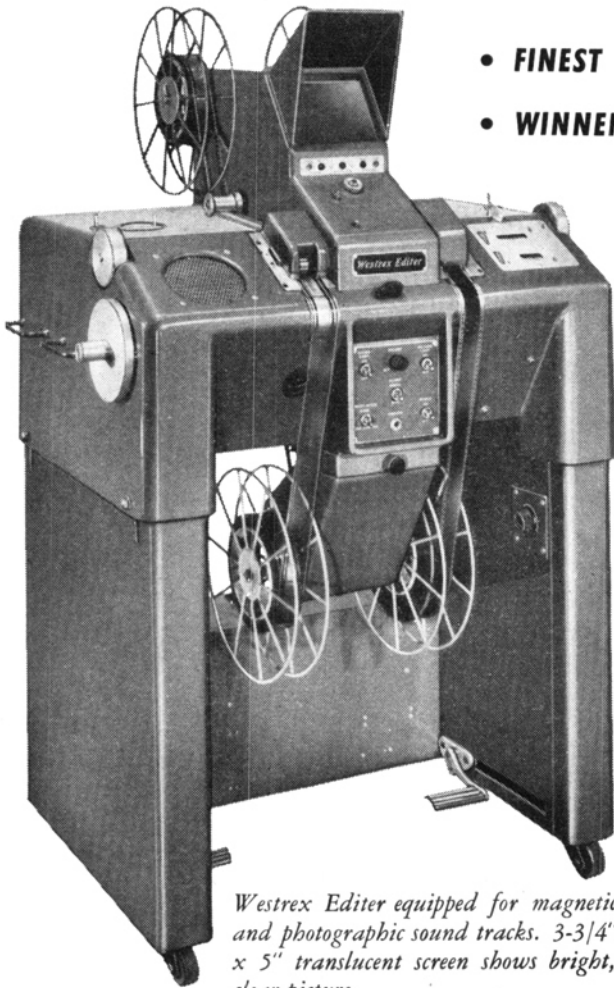
The Theory of the Photographic Process, Revised Edition

By C. E. Kenneth Mees. Published (1954) by Macmillan Co., 60 Fifth Ave., New York 11. i-x + 1133 pp. 416 illus. 6 X 9 in. Price \$21.50.

The long awaited revision of this standard reference work has now appeared, and it is evident that this much used contribution to the photographic literature has been greatly extended, with a thorough coverage of the intervening 12 years since original publication. All chapters and sections have been thoroughly rewritten and in general improved, in part due to the fact that the information available is more complete at present. New chapters have been

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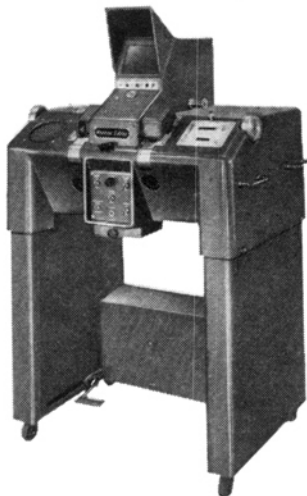
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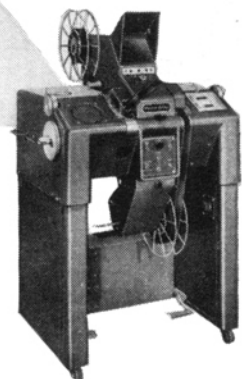
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included on such subjects as the latent image produced by x-rays, the sensitometry of color films and papers, and the effects of charged particles on photographic emulsions. The wealth of new material, in addition to whole new sections, has made it necessary to omit some of the historical material and to delete the chapter on the Photographic Aspects of Sound Recording. Motion-picture engineers will miss this, but more detailed specialized references are available, and it is not of as general interest as the rest.

Since this book is expensive, it is important for motion-picture engineers to realize how useful it is, and why it is well worth acquiring.

The book is well described by Dr. Mees

in his preface to the first edition, reprinted in this edition, in which he says "The purpose of this book is to provide a general handbook of the subject as a guide to the literature and a summary of its conclusions." As an annotated bibliography covering practically the entire literature of the science of photography, this book is unique and could only be produced by a man having access to the tremendous laboratory personnel of the Kodak organizations. As far as its impact upon the science of photography is concerned, it is probably the most valuable contribution Dr. Mees has made. When it is realized that this reference work gives the general conclusions of all theoretical and much practical work in the whole science of photography, and

then refers to the original literature for more details, it will be realized how important and useful it is to have constantly available. The omissions are few and far between; mostly of late data which became available after some particular parts of this book were completed. The volume is a treatise in the strict sense, usable as an encyclopedia, but of course it does not give the complete story on each subject, which would be impossible in this small compass. It is obvious that it cannot be read casually, but must be read with thought and attention. The well over 2100 references give us the chance to go to the original data to form our own conclusions, helped of course by Dr. Mees' experienced comments.

The great quantity of new material added in this edition is evidence of the fact that all phases of the science of photography have been actively studied during this period. There are yet cases where the review must state, as on Page 530, "No general agreement on the mechanism of development has been reached," after the several possible mechanisms are dealt with in adequate detail for most purposes; where further data are needed an exhaustive study such as that of James & Higgins or the original papers can be obtained.

As a text book, this volume will be necessary in schools teaching any aspect of the science of photography, but of course it is a reference text only since it is not intended as an instructional manual. It differs from other works covering much the same ground such as those of Clerc, Mack and Martin, and others which cover a little of the theory and a great deal of the practice. Here very little practice is to be found.

A few very recent items might be mentioned for those who wish to know how late the coverage is. For instance, there is no reference to the work of Andre Rott and his diffusion-transfer reversal processes and little mention of combined developer-fixer solutions. The recent work of Dr. LuValle in photographic theory and analysis of solutions has been available too recently to include. There is only slight mention of the pyrazolidones, which are now the subject of so much activity, and no mention of a few new developing agents such as 8-Hydroxy 1,2,3,4 Tetrahydroquinoline, nor of the work of such groups as that under Dr. MacDonald on various aspects of photographic resolution and image sharpness. The obvious omission of data on emulsion making is explained in the preface as referring to data he is not entitled to publish with frankness.

It is a pleasure to see the full credit given to the original workers and authors of papers to which Dr. Mees refers, and also his acknowledgment of the help given him by the members of his own organization whose names are now given in the table of contents, with reference to the chapters which they specifically contributed. In general, it is a remarkably complete and useful book, full of information for any engineer or scientist working in photography. Its usefulness as a reference is helped by the frankness with which Dr. Mees expresses his own opinions, in contradistinction to those of the authors to whom he refers.

The investment in this book is highly recommended not only to laboratories and libraries, but to the individual worker who will seldom find so much information avail-

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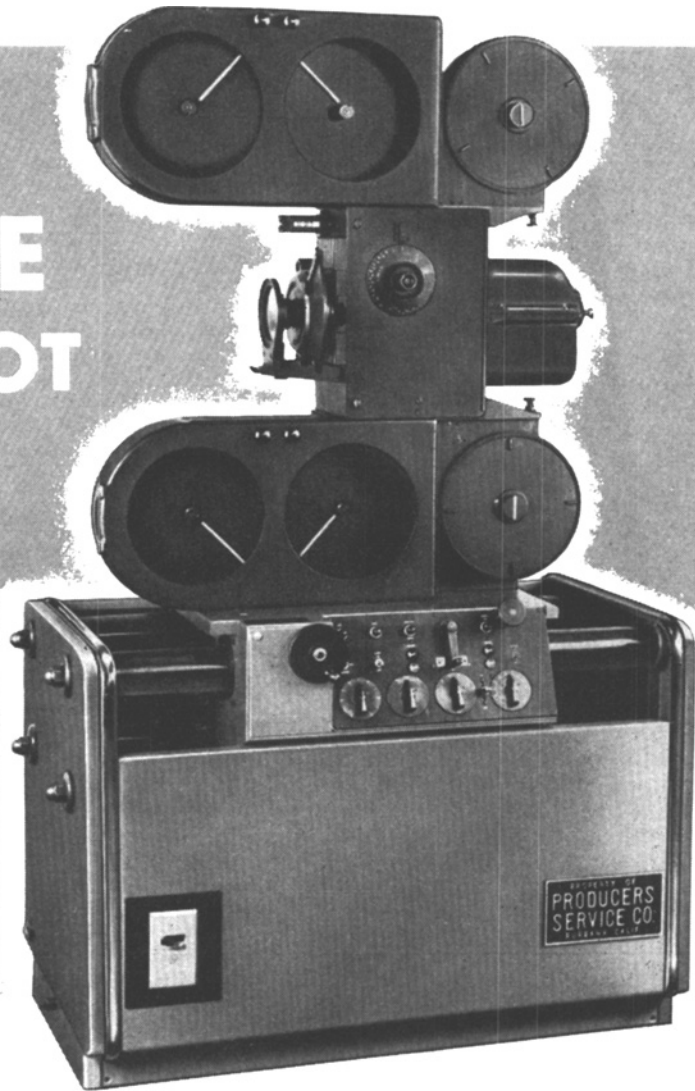
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able in such a short space; information which it will take him a very long time to assimilate.—*Thomas T. Hill*, Director, Photographic Research, Philip A. Hunt Co., Palisades Park, N.J.

Staging TV Programs and Commercials

By Robert J. Wade. Published (1954) by Hastings House, 41 E. 50 St., New York 22. 232 pp. 100 illus. $6\frac{1}{2} \times 9\frac{1}{4}$ in. \$6.50.

As in his previously published books on related subjects in the field of television production. Mr. Wade's concentration on the practical aspects of his trade results in a highly readable volume which is sure to become the standard reference work in solving the physical staging problems of "live" TV programming.

The attention to specific detail is one of the book's principal qualities, and it is evident in its careful planning and intelligent approach. The illustrations are of the widest variety, running from stills to diagrams, floor plans, blue prints and cartoons.

The body of the text scrutinizes the kindred activities of TV staging, dissecting in turn production facilities, scenic design, construction and painting, lighting, props, graphics, and special effects. An index and a suppliers' list round out this most informative work.—*George L. George*, Sturgis-Grant Productions, Inc., 322 E. 44 St., New York 17.

The Television Commercial

By Harry Wayne McMahan. Published (1954) by Hastings House, 41 E. 50 St., New York 22. 192 pp. 109 illus. $6\frac{1}{2} \times 9\frac{1}{4}$ in. \$5.00.

In the highly competitive field of television "spot" advertising, efficiency of production is the basic asset of success. Mr. McMahan's experience in this specialized domain has led him to write a most practical book devoted to this subject, which both producers and users of TV commercials will welcome.

After listing the five production techniques available for TV film spots, (i.e. cartoon, live action, stop motion, puppets, photo animation), the author examines each one in detail from the points of view of the product involved, the selling angle, and the financial cost.

The discussion of these various problems is lively, often provocative, and always well informed, with a striking use of stills from actual "spots."—*George L. George*, Sturgis-Grant Productions, Inc., 322 E. 44 St., New York 17.

Introduction to 3-D

By H. Dewhurst. Published (1954) by The Macmillan Company, 60 Fifth Ave., N.Y. xv + 152 pp. 57 illus. $5\frac{1}{2} \times 8\frac{1}{2}$ in. Price \$4.50.

It is very difficult to evaluate this volume objectively. The sentence structure is so tortuous that it frequently succeeds in obscuring the meaning.

From page 10: "Regarded on its own merits as an isolated factor amongst those which we have classed as monocular, accommodation probably plays but a small part in supplying crucial information in the sum total of that upon which the brain arrives at its synthesis of depth awareness from the evidence of the various factors received." If you are puzzled by this, it probably means: "Accommodation seems to be only a minor factor in depth awareness." The latter is eleven words long as against fifty-three in the text.

On page 12: "In essence we are stating that in seeking a suitable definition of the word, our immediate purposes are served if we regard 'perspective' as the drawing-in of the intersection of all light rays from the scene to the eye upon a plane at right angles to the center line of sight, and we have seen that the perspective of the elements within a scene will be different if the distance of this plane from the eye or lens be changed."

This, besides being an example of style of writing, also lacks technical preciseness, to the point of obscurity. Does a perspective have to be on a plane at right angles to the center line of sight? If the eye does not move nor the scene change, a sheet of glass placed anywhere between the two will not alter the perspective one iota. Yet the quoted statement says that the perspective will be different if the position of the picture plane is changed.

These random examples — any page will yield others — should illustrate the difficulty of reading the book with any degree of pleasure or of certainty as to meaning.

From the stereoscopic point of view the author seems to me to accept too many of the standard notions about three-dimensional pictures without critically questioning their validity. The following paragraph (from p. 40) is the heart of the matter:

"The inescapable geometrical requirements of a satisfying projection, whatever the viewing-aids, projection methods and individual projection systems may be that are employed, are four in number. Firstly, let us state these, and afterwards examine how they are to be achieved. They are: (i) the prevention of too severe a departure from the convergence accommodation ratios that we are accustomed to in normal vision; (ii) the prevention of 'divergence,' that is to say, a splay-out of the 'infinity points'—to be explained in a moment; (iii) the establishment on the screen, or rather 'in' the screen, of a definite 'window,' with well-defined and merging side-borders, *through* which the three-dimensional reconstructed scene is more often than not to be viewed; and (iv) the avoidance of too marked a departure, in the viewed image, from that natural depth which is associated with the original scene. Let us take these four requirements in order and see what they imply."

Note to begin with that we are getting "inescapable geometrical requirements of a *satisfying* projection." That is, physical requirements for an aesthetic reaction. These, therefore, are not the requirements for an orthostereoscopic image but for a satisfying image.

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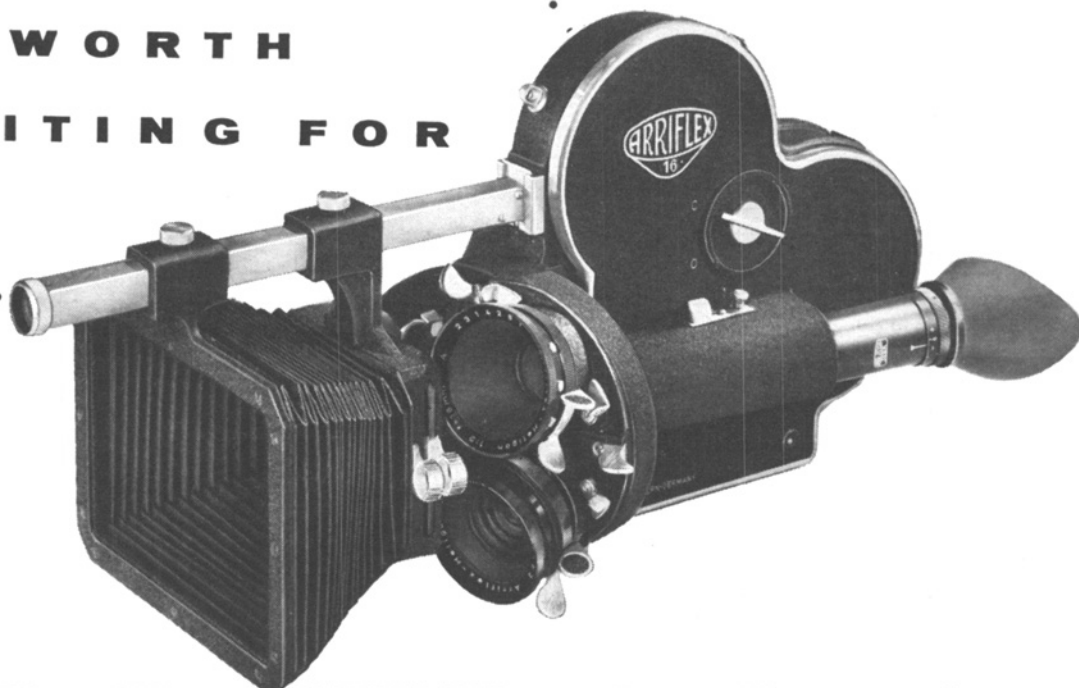


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I have no quarrel with (i). Eye-strain is never satisfying.

I do quarrel with (ii). Most of us involved in stereo projection accepted this as gospel until the recent Hollywood splurge in 3-D. It has become quite clear, however, that most eyes will comfortably tolerate much more divergence than was hitherto suspected. Divergence adds depth. To some persons depth is "satisfying." Though much more experimentation is needed in this area, "prevention of divergence" is certainly not an "inescapable geometric requirement"—assuming, of course, that prevention could be a geometric requirement under any condition.

I disagree with (iii). Of course a sharp window with well defined borders is, in the present state of the art, the best way to

handle the edges of a stereo picture, but there is nothing inescapable about it. If Cinerama were made stereo, a fading off at the edges might prove better. Certainly there is no reason at all that the window should be 'in' the screen. When the screen texture becomes really invisible, the spectator cannot locate the screen at all and the window may be in front or behind the screen so long as, in general, it remains in front of objects in the scene. Furthermore, a window built into the scene itself provides an excellent solution, as the author himself admits only three pages later.

I disagree with (iv) completely. It is on this score that I would quarrel with most current stereo literature. Spottiswoode in general falls into the same trap. Of course it is of great importance to know the ge-



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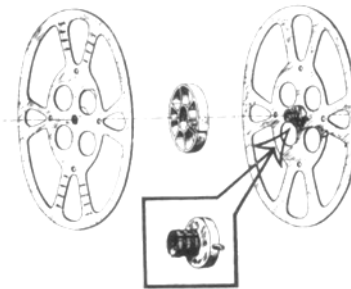
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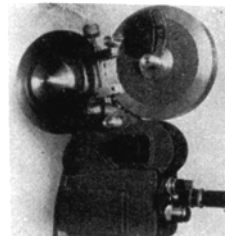
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ometry of obtaining a stereo image which is exactly the size, shape and location with respect to the eyes as the original scene. But to state that this is an "inescapable geometrical requirement of a satisfying projection" is not only sheer nonsense, but it at once destroys any possibility of treating stereo as an art.

Pictorial art in all its forms is the process of altering reality to make it aesthetically more meaningful or, if you will, more satisfying. Under certain conditions exaggerated depth is far more satisfying than the original — under others, flattened depth. Certainly the ability to alter shape and location is the heart and soul of stereo's creative, artistic possibilities. The difficulty of obtaining accurate reproduction may be a defect where you must have accurate reproduction. However, we should keep forever before our eyes that the true future of stereo lies in its ability to remold spatial reality. Let us abandon this obsession with true shape and at least begin to explore the aesthetic possibilities of the various possible departures from it.

On the same score, the author assumes as Spottiswoode does that giantism and miniaturism are, per se, bad. In some circumstances they are, but in others quite the contrary may be true. They are tools in the photographers kit that may be used effectively under proper conditions and should be viewed as such.

After developing the theory of stereo photography and projection, the author surveys all the current systems and their resulting equipment. This yields a valuable picture of the various mechanical devices in existence for solving stereo problems. The author seems to me to be much more at home with equipment than with theory, though the same tortured sentences mar the text. Thus the value of the book lies chiefly in its supplying a ready source for checking up on current systems and equipment.—*Prof. John T. Rule*, Massachusetts Institute of Technology, Cambridge, Mass.

Commercial Motion Picture Production Accounting is the title of a paper by Ben Dyer published in the March 1954 issue of *The New York Certified Public Accountant*. While it is a little off the well-beaten tracks of equipment techniques, this subject is nevertheless one which will undoubtedly interest many technical people around the studios and production companies, and published material on it is relatively rare. This paper distinguishes commercial from theatrical production and outlines approaches common to all commercial producers; contracting procedures; script analysis; cost estimating; contracts, schedules and controls. The author tries: "... to cover those phases not found in other business and to show that, although both theatrical and commercial producers use the same techniques, the same equipment, the same unions, the same materials, etc., theatrical production is speculative but commercial production is a highly competitive contracting business. And that, while theatrical production costs bear little relation to its profits, commercial production costs directly affect its prices and profits."

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Managers and heads of recording departments from some of Westrex Corp.'s subsidiaries in Europe, Africa, Australasia and Latin America attended a conference in New York, November 8-19. The conferees discussed new equipment operational tech-

niques and surveyed Westrex sales and servicing activities in motion-picture studio and theater equipment fields, as well as Teletype, Teletypesetter, communications and other electronic apparatus. New equipment displayed at the conference included

single and multichannel sound systems for theaters, a film editing machine, multichannel magnetic recording systems, the type RA1524 six-position mixer console, the 35 mm newsreel recording system, the new re-recorders, electrical printing equipment, the new hot-stylus lateral feedback disk cutter, and the new black-and-white and color densitometers for studios.

In the picture above, E. S. Gregg, President of Westrex Corp., is showing the firm's new multichannel amplifier system to, from left to right: J. A. Todd, recording manager of the Westrex Co. Ltd., England; J. Cuevas, manager of the Westrex Co., Brazil; J. Y. Abe, director and assistant manager of the Westrex Co., Orient, Japan; P. Amourgis, manager of the Westrex Co., East, Egypt; R. Senechal, head of recording department of the Westrex Co., France-Belgium, France; M. Storms, II, manager of the Westrex Co., Caribbean, Venezuela; behind R. J. Hortis, manager of the Westrex Co., Argentina; W. E. Kollmyer, manager of the Westrex Australia Pty., Ltd., behind K. Kagara, recording engineer of the Westrex Co., Orient, Japan; O. J. Forest, manager of the Westrex Co., Caribbean, Trinidad; W. De Mello, manager of the Westrex Co., Caribbean, Cuba; and C. Adlerstrahle, manager of the Westrex Scandinavia, AB, Sweden.

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current literature



The Editors present for convenient reference a list of articles dealing with subjects cognate to motion picture engineering published in a number of selected journals. Photostatic or microfilm copies of articles in magazines that are available may be obtained from The Library of Congress, Washington, D.C., or from the New York Public Library, New York, N.Y., at prevailing rates.

- Acoustical Society of America, Journal
vol. 26, Sept. 1954
Loudspeakers and Microphones (p. 618) *L. L. Beranek*
A Review of Twenty-Five Years of Sound Reproduction (p. 637) *H. F. Olson*
Sound Systems for Large Auditoriums (p. 661) *L. L. Beranek*
- American Cinematographer
vol. 35, Sept. 1954
MGM's New Underwater Camera Blimp (p. 440) *A. Rowan*
He Makes News Live (p. 442) *J. F. Palmer*
Sync Sound Without Interlock (p. 445) *F. Harris*
Hank McCune TV Series Filmed in 16mm Color (p. 446) *F. Foster*
High-speed Filming of Instrument Action (p. 448) *A. D. Roe*
Radio Controlled Cinematography (p. 450) *J. W. Bakke*
High-speed Film Processor (p. 451)
Is Your 16-millimeter Camera Showing Its Age (p. 452) *H. Stockert*