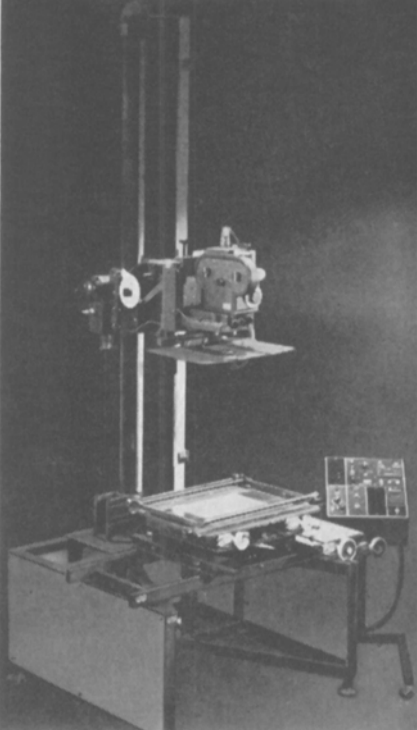


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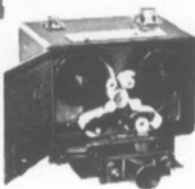
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Arriflex 16mm and 35mm professional motion-picture cameras are described and illustrated in a 40-page booklet available from Arriflex Corp. of America, Technical Information Dept., Box 1050, Woodside, NY 11377. The booklet contains illustrated "case studies" of various applications of Arriflex cameras with emphasis on unusual or difficult film assignments and the ingenuity of cinematographers.

Sony Superscope tape recorders are described and illustrated in color in a 48-page catalog available from Superscope Inc., 8150 Vineland Ave., Sun Valley, CA 91352. The catalog lists various types of tape recorders ranging from simple, comparatively inexpensive tape recorders to more sophisticated machines.

A color and monochrome video-tape recording system (Model EV-320) and a special effects generator (Model SEG-1) are described in data sheets available from Video Products Merchandising Department, Sony Corp. of America 47-47 Van Dam St., Long Island City, NY 11101. Model EV-320 features capstan-servo electronic editing. Model SEG-1 provides such effects as switching, fading superimposing or wiping two video signals.



books reviewed

Animated Film: Concepts, Methods, Uses

By Roy Madsen. Published (1969) by Interland Publishing, New York; Distributed by Pitman Publishing Corp., 6 East 43 St., New York, NY 10017. 234 + xiv pp. Illus. Diagrams. 10 by 8 in. Price \$14.75.

Animated Film: Concepts, Methods, Uses is a very interesting book. It is, essentially, what we could call a teaching book and, as such, it will certainly occupy an eminent place in the existing professional literature. It appears 10 years after publication of the classic *Technique of Film Animation* by Halas and Manvell and certainly invites comparison with that important book. Both books should be read together, and neither of the two should be missing in the serious animation artist's or technician's library.

Whereas Halas and Manvell give us, in the main, an extensive and detailed grounding with respect to the purely theoretical aspects of film animation, the great advantage of Dr. Madsen's excellent book is its practical value. Whereas the older book may give the reader a good understanding of the aesthetics, theory, and even mathematics of film animation,

Madsen's work will actually enable the attentive reader to learn, from scratch, how to make an animated film and to proceed to its practical completion. This is principally due to the excellently written chapters 2, 3, 4, and 5.

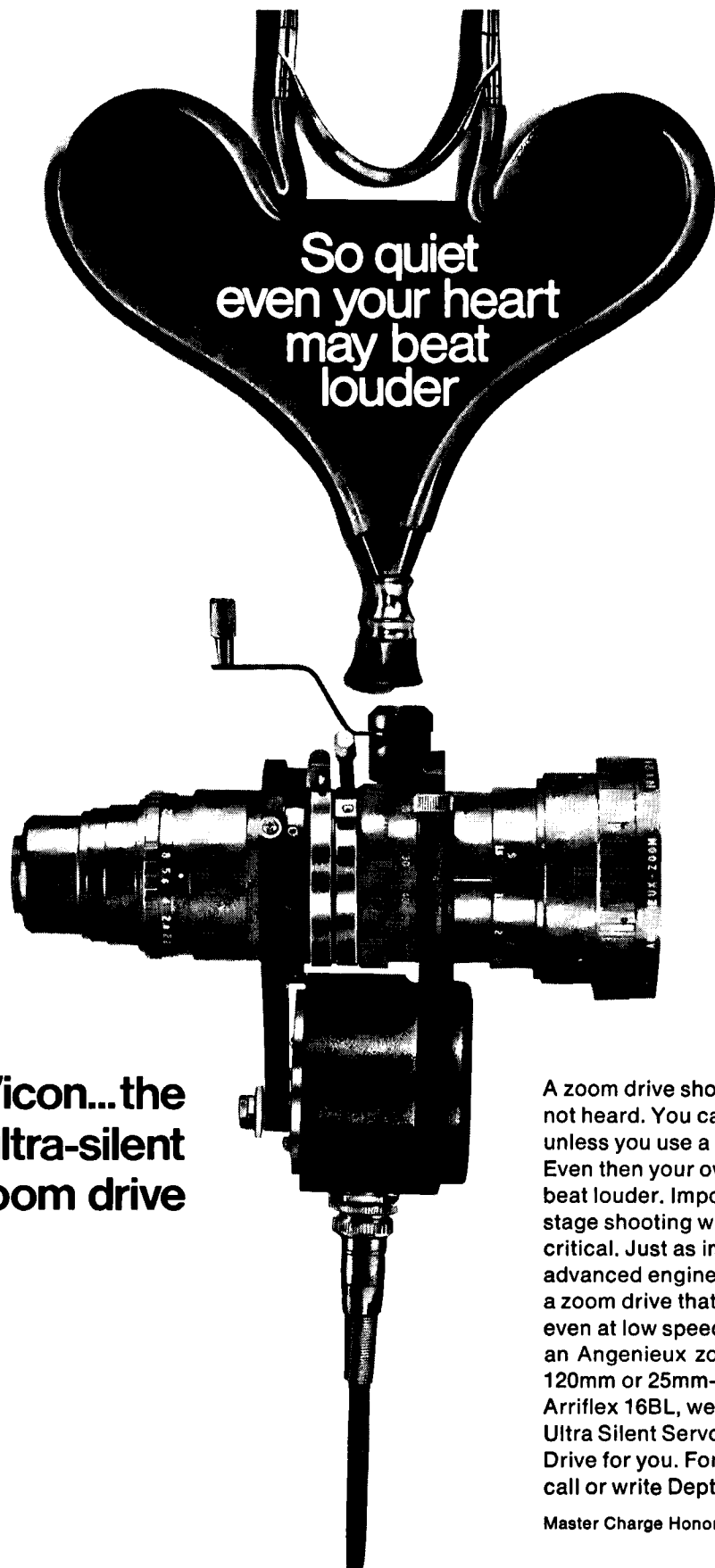
Chapter 2, "Concepts and Language" gives the necessary understanding of the film maker's terminology. Chapter 3, "The Animation Stand" gives a clear and fully comprehensible description of the animator's most fundamental tool. Such information, previously, could not be found anywhere. Chapter 4, "Pan and Zoom: Planning and Execution" and chapter 5, "The Filmograph" tell the reader, in easy understandable sentences, how to make good use of that complex instrument, the animation stand. This also is valuable information to which, previously, no easy access could be had.

These are some of the highlights of the book, but the rest is no less significant. There are very interestingly written chapters on the script, the storyboard, on style and on drawing animation, on the preparation of cels and their inking, on what paints to use (this is of very special importance), on backgrounds and on sound, and many other indispensable topics. As one keeps reading on and on, one gets the feeling that the author must be an outstanding and enthusiastic teacher, and enthusiasm is really what makes a teacher great. His planning of the book is comprehensive, his language is, in general, concise and to the point and his subject matter is well chosen and extensive, almost to the point of becoming encyclopedic.

It also appears that extensive research preceded the realization of the book, and that Dr. Madsen had, as he states, the "freely given cooperation" of a great many persons and institutions, as can be gathered from the impressive list of acknowledgments at the beginning of the text. From this one can infer the large amount of time invested in this work, the enormous correspondence necessary to carry it out, and the sympathetic response the author was able to awaken everywhere, factors all which conspicuously bespeak the author's capabilities.

The book's typographical layout and graphical design is artistically most attractive and in good taste. The many illustrations are, all of them, most useful and of outstanding quality. Page space has not been curtailed, thus favoring a broader approach to the author's exposition of fact and theory.

The author's almost encyclopedic approach, however, is what, in this reviewer's opinion, accounts for certain minor shortcomings of the book, shortcomings, we hasten to say, which in no way detract from the great usefulness of the book. Probably it is this all-encompassing approach which forces the author to mention only in passing certain facts with lesser importance for the general development of his plan. For this reason, perhaps, Lumière's participation in the development of the motion-picture camera is mentioned only too briefly. Not mentioned at all, for instance is the achievement of synthetic sound, produced through drawings of wave forms and their



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subsequent animation, by Fischer-Kösen in Germany as long ago as 1930.

In a few places the author has fallen into a trap which menaces all technical writers, i.e., too great familiarity with the proper technical terminology. Terms, such as, for example, pencil test, are introduced, but explanations are given in later chapters. For the benefit of the reader a parenthetical reference to the corresponding page or to the extensive and very suitable "Glossary" (15 pages, about 500 terms) at the end of the book would be most welcome. Similarly it would be convenient to emphasize from the beginning that the terms horizontal and vertical are always applied only to the animation stand as such, and that, when reference to the image is made, left and right, top and bottom become West and East, North and South respectively. Also the average reader would appreciate being told that a 12 field is really 12 inches wide and that it is the width of the field picked up by the lens that provides the number associated with a given field.

From a purely engineering point of view some explanations could have been more precise. For example, it could be explained that a 170° shutter is normally used instead of a 180° shutter in order to obtain a bilateral overlap of 10° of the two shutter blades in the closed position, and hence a perfect closure without danger of residual exposure. In this respect also the description of a follow focus cam as a "bar" is somewhat incomplete. The

accompanying illustration seems to show a rack-and-pinion driven radial cam. However, the book has not been written for the engineer, so let's not split hairs on this.

In one place somewhat more consistency of magnitudes could be desirable. Speaking of the "Standard Aspect Ratio," this is given at 2.94 by 4.10 for 16mm film, and 0.681 by 0.868 for 35 mm film. The numbers given are, apparently, pure numbers for 16mm film, and the USA standard dimensions, in decimal fractions of an inch, for the 35mm camera aperture. A comparison with the USA standard image dimensions for 16mm, which are 0.295 by 0.404 inches, would have been helpful.

The readers of future editions of this valuable book would be helped by an added chapter on the purely photographic aspects of film animation. Specific types of films, such as high-contrast film or color film, could be recommended for given purposes, and their specifications, such as ASA-speed, denomination, etc., could be given. This applies also to the more complete treatment of the technique of exposure determination. A detailed description of the fundamental relations between film speed, camera running-speed, angular shutter openings, exposure time per frame, lens stops, illumination levels, brightness values etc. would greatly benefit the reader, specially the serious student with no previous experience. To this could be added the organization of exposure test series, and some explanation

of the concept of contrast factor. Suitable exposure meters could be mentioned and their use explained.

This reviewer was rather puzzled by an application of polarization filters to prevent the imaging of dust motes on the cels, (p. 57). The elimination of surface reflections by the method of crossed polarization filters over the light source and over the lens is well known, but the elimination of dust by this method certainly merits an explanation.

This reviewer was delighted, on the other hand, by the method given for graphically plotting the ease-in and ease-out of a pan on the pantograph chart. This is a straight-forward, easy to apply, and time saving method, much more manageable than the corresponding mathematical formula, as given by Brian G. D. Salt in the Appendix of *Technique of Film Animation*.

In summing up it must be said that the great merits of Dr. Madsen's valuable book are in no way diminished by the minor drawbacks observed. In fact, in each of its 15 chapters, the studious reader will find so much immediately useful information, so much instructional material and so many fruitful suggestions and methods presented in so neat and efficient a language that it will be almost impossible for him not to acquire the knowledge, necessary to become proficient in the science and the art of animation. — *Pablo Weinschenk-Tabernero*, Optical Engineer, Engineering Dept. Movielab Inc. Home address: 98-17 Horace Harding Expwy., Apt. 12M, Flushing NY 11368.

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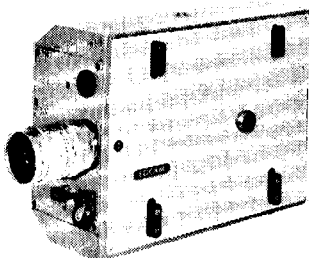
Ed. Raymond Spottiswoode. Published (1969) Hastings House, New York, NY 10016. 1100 +xxiv pp. Illus. Diagrams. 6 1/2 by 9 in. Price \$37.50.

The name of Raymond Spottiswoode on any work having to do with film (and television) amounts to a guarantee of its excellence. His earlier works, *Film and Its Techniques* and *A Grammar of Film* are classics in the genre of the art and science of motion picture. Bernard Happé is Editor of Film and Eric Vast is Television Editor. The book contains contributions of more than 90 authors well known throughout the world of motion picture and television.

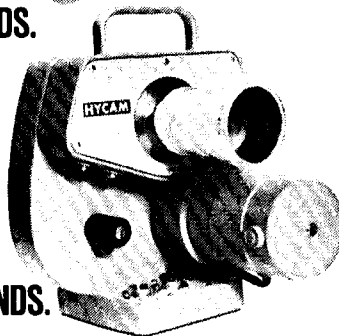
The volume contains 1,600 entries in alphabetical order, some 1,000 illustrations (line drawings and diagrams) and an index of 10,000 references. This is the first major work of its kind in that it deals with the similarities as well as the differences in the two fields (or "branches" of the same art).

In the preface, the editors admit that the original concept of the book — to produce a comprehensive encyclopedia of cinema, including history, aesthetics and impact on society, as well as production techniques — was scrapped, at least in part, when it became apparent that coverage of all aspects of cinema could not be contained in one volume. It also became apparent that there was an increasing convergence of film and television, and that there were also great gaps in knowledge

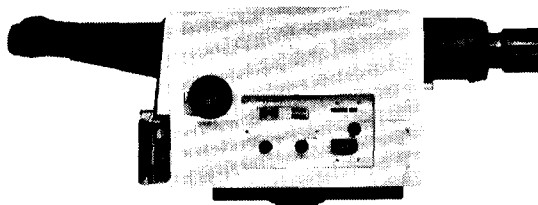
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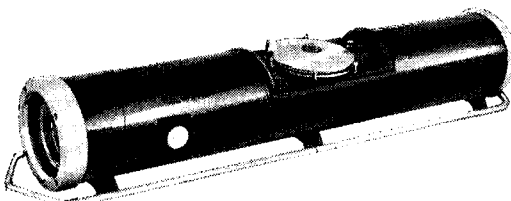
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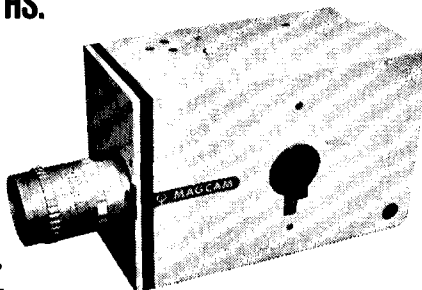
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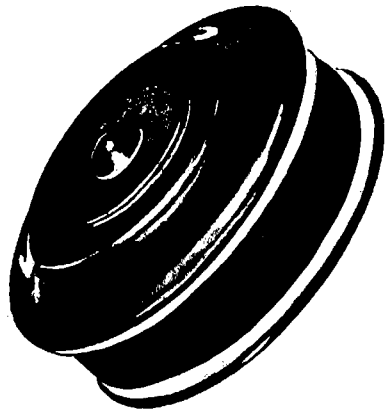
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which an encyclopedia linking the two media might help to bridge. One of the main problems faced by the editors was that of combining two different worlds of knowledge — the photographic and the electronic.

One of the most attractive sections of the book is the 40,000-word survey, "Film and Television, a Basic Anatomy," by Mr. Spottiswoode which he presents in his usual literate style. This section, in particular, has much of interest for the casual reader as well as for those active in photography and electronics.

This is a book that will be useful for many years and is unquestionably a "must" for every reference library. — *Edit.*

Principles of Cinematography (4th. ed.)

By Leslie J. Wheeler. Published (1969) by Fountain Press Ltd., 46 Chancery Lane, London, WC 2, England. 440 pp. Illus. Diagrams, 6 by 8½ in. Price 84 s.

The first edition of this book was published in 1953 and it became an immediate succès d'estime within the motion-picture and television industries. The third edition was reviewed in the *Journal* (July 1964, p. 598) by Ernest M. Pittaro who noted that "... the content goes far beyond basic principles. The volume is actually an encyclopedia of motion-picture facts." The statement continues to apply to the new edition.

The present (4th) edition has been revised and brought up to date and new chapters, dealing with film emulsions, the principles of color cinematography and magnetic sound recording, have been added. The earlier editions are illustrated with more than 150 line drawings. A number of new line drawings are included in the present volume as well as some 20 photographs of the equipments described in the text. An extensive Bibliography adds to the usefulness of the book.

In the Introduction to the Fourth Edition, the authors states, "... it is still true that literary work in this field generally falls into one of two sharply divided spheres — either as advanced academic treatises read only by scientists, or as popular general outlines of 'movie making' which rarely help the technicians of the industry. The purpose of the book is to bridge the vital gap between these two extremes."

The book contains 13 chapters: General Principles; The Cinematograph Camera; Film Emulsions; Film Processing Equipment; General Quality Control in Film Processing; Sensitometry; Printing Motion Picture Film; The Reduction Printing Process; Special Effects and Editing Equipment; The Motion Picture Projector; The Addition of Sound to Films; Processing Photographic Sound Film and Photographic Sound Reproduction.

To those familiar with the earlier editions of this book no laudatory comment is necessary. However, the extensive revisions and added material, while certainly not rendering obsolete the previous editions, make advisable the addition of this volume to the libraries of serious workers and students in the field of motion picture and television. — *Edit.*

Selected Scientific Papers

By A. Bouwers. Published (1969) by North Holland Publishing Co., 305-311 Keizersgracht, P.O. Box 3489, Amsterdam, The Netherlands. 626 + xvi pp. Illus. Diagrams. In English (53 papers) and Dutch (3 papers). 7½ by 10½ in. Price \$28.

In reviewing the 626 page collection of the papers of Albert Bouwers dated from 1924 to 1968, this reviewer found only a very few of the papers that would prove interesting to SMPTE members. For half a century this brilliant, creative mind in applied physics contributed several revolutionary scientific achievements.

Prior to World War II, Dr. Bouwer's activities were in the field of x-ray problems and he contributed two major improvements. First, the replacement of the previously used glass tube with the Metalix x-ray tube, and second, the rotating anode, which solved the cooling problem and allowed higher output of x-rays.

After World War II Bouwers attacked the difficult problem of obtaining small-scale x-ray photographs of a fluorescent screen to replace the plate behind the patient. Bouwer's 1941 patent using concentric mirror optics proved a satisfactory solution. This and other optical systems Bouwers developed has numerous applications besides those in the medical field. High resolution photography from aircraft at high altitude was improved by Bouwers's new approach. Several other unconventional constructions of well known optical instruments result from his inventions. His works touched on anamorphic mirror systems, low brightness photography by image intensification, and electronic image systems.

A man with honorary degrees, medals, and the 1960 Eurotechnia Award for his contributions to technical cinematography, Dr. Bouwers is still active in his chosen field. He has relinquished his presidency of The Old Delft Optical Co. which he held for 27 years, during which time that company grew to its present predominance in the optical field.

The book is a great honor to this man of high talent and even a quick review of the contents is rewarding. — *Roxanne O'Malley Ray*, 172 Greystone Lane, Rochester, NY 14618

Electronic Circuit Design Handbook (2d. ed.)

By the Editors of *EEE Magazine*. Published (1968) by Tab Books, Blue Ridge Summit, Pa. 17214. 320 pp. Diagrams. 8½ by 11 in. Price \$14.95.

A total of 472 different electronic circuits are presented in this book together with brief explanatory material with each one. Originally issued in 1965, it was updated and reissued in 1968. All of the circuits appeared in various issues of *EEE Magazine* and were selected for publication primarily on the basis of novelty and usefulness. Nineteen different circuit categories are represented including all those the ordinary reader would expect, such as amplifiers, oscillators, power supplies, test equipment, pulse circuits, gating,

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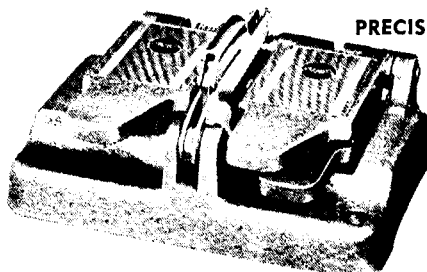
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switching, and logic circuits, and finally a miscellaneous category containing those circuits that are not readily classifiable.

The book is particularly good in its wide range of pulse and timing circuits. It appears to be adequate in its treatment of power supply circuits but is perhaps somewhat deficient in RF circuits. Radio amateurs might very well be disappointed in the attention given to this activity. However, the principal merit of the book is undoubtedly its use as a source of ideas for the inveterate experimenter.

Most of the circuits were apparently designed in response to a need for an electronic subsystem that could perform a certain definite function. As a consequence not many of those included in this volume will be found in a standard textbook. In selecting circuits for publication an effort has evidently been made to include those least likely to become obsolete. Although many of the circuits use transistor types that would be considered by some to be out-of-date, the average experimenter will have little difficulty in substituting newer types because of better performance or availability.

There are, of course, omissions that were, perhaps, necessary to keep the volume to a reasonable size. Little attention is given to some of the newer semiconductor devices that are rapidly gaining acceptance in the industry. Integrated circuits, MOS devices and hot carrier diodes, for example, are given only limited treatment. Future editions of the *Handbook* will undoubtedly reflect the increased use of these newer semiconductor devices by

the forward-looking experimenter. In the meantime, the present edition will provide a valuable storehouse of circuit ideas that can be used to satisfy a wide variety of circuit requirements. — *Waldemar J. Poch*, 19 Cranbury Neck Rd., Cranbury, NJ 08512.

USA Standard COBOL, X3.23-1968

Published (1969) by United States of America Standards Institute, 10 E. 40 St., New York, NY 10016. 464 pp. Price \$6.50 (USASI members, \$5.00).

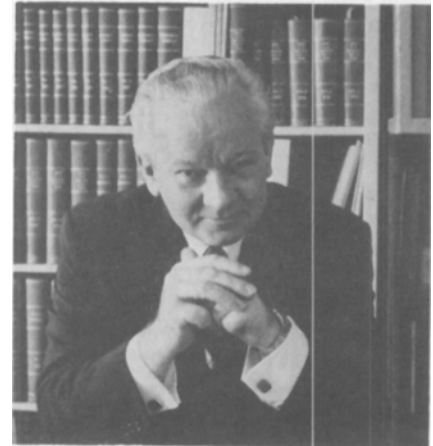
Since 1959, when the conference on Data Systems Language (CODASYL — a group comprising members of the government, computer manufacturers and users) agreed upon the development of a common language for programming commercial problems, the Common Business Oriented Language (COBOL) has undergone considerable refinement and standardization.

This standard describes the COBOL language in terms of a nucleus and seven functional modules with both a high and low level of standard defined. The users may request the level of language best suited for their needs and the computer manufacturers have a better means of defining the level of language associated with their equipment.

The standard defines a new language, with English-like notation, which is reasonably machine-independent and upwards compatible. This means that to a great degree a program written for one machine may be run on another with little or no modification provided that the level of

COBOL on the second machine is at or higher than the level of the first. Furthermore, because of the standardization of the language there is less chance of misunderstanding as the program passes hands. The program logic is reasonably readable by non-programmers due to the English-like quality of the notation.—*Steven Itzkowitz*, Computer Software Systems, Inc., 460 Summer St., Stamford, CT 06902.

Obituary



Lloyd E. Varden

Lloyd E. Varden died January 15, 1970, at the age of 58. He was internationally known as an authority in the field of photographic science and engineering. At the time of his death he was Professor of Photographic Science and Engineering at Columbia University and a leading consultant to the photographic industry in this country and abroad. He was born in Evansville, IN, and was educated at Maryville College (where he majored in chemistry) and the University of Kentucky. He received the honorary degree of Doctor of Science from Maryville in 1964.

He was Director of Education for Ansco at Binghamton, NY, from 1934 to 1945 and he was Technical Director and Vice-President of Pavelec Color, Inc., New York, NY, from 1945 to 1955. He joined the faculty of Columbia University in 1960.

During his active professional career he received many honors. He was a Fellow of the Royal Photographic Society of Great Britain and a Fellow of the Photographic Society of America. He held U.S. Patents for motion-picture developments, among his inventions being an electronic coding apparatus and a color analyzer.

He was the author of numerous articles on scientific, technological and aesthetic aspects of photography which were widely published in journals throughout the world. The photographic library accumulated by Dr. Varden is, with the exception of the Eastman Kodak collection, the largest in the world, containing more than 10,000 volumes.

Dr. Varden joined the Society in 1943. Papers which he authored appear in various issues of the *Journal*, among them, "Concerning Photography as an Art in America" (June 1942); (with E. G. Seary) "Rapid Test for Ferricyanide Bleach Exhaustion" (June 1949) and "Semiautomatic Color Analyzer" (February 1951).

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