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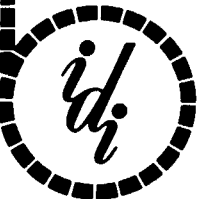
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# Section Meetings

**Hollywood, 15 Feb.** — The meeting was held at CBS Television City's Rehearsal Hall "A" with an attendance of more than 180 members and guests. Richard W. Elliott, Senior Technical Service Engineer in 3M Company's Magnetic Audio/Video Products Division, conducted the entire program which was on the subject of videotape. He opened the program with a playback of a videotape recording made to celebrate the 20th anniversary of the inception of videotape recording. Some of the first equipment was shown followed by highlights of the many advancements in editing, recording and playback equipment that have taken place over the years.

Elliott then presented a paper on "Manufacturing Magnetic Tapes" illustrated by 2 X 2 slides. Details of materials, chemistry, clean rooms and quality controls were explained. This was followed by a presentation on "Improved Audio Characteristics in Quadruplex Videotape." Various audio parameters of magnetic recordings were defined and explained. A videotape playback on five monitors was part of the presentation.

The last segment of the program was a presentation on "Care and Handling of Videotape." This was enhanced with the aid of an overhead projector.

The meeting was preceded by a dinner at Casa Cugat. It was a pleasant occasion with Xavier Cugat greeting our group and presenting us with

a review of his new book. He also showed us some of his own paintings. — Warren Strang (Chairman), Hollywood Film Co., 956 Seward St., Hollywood, CA 90038.

**Nashville, 24 Feb.** — The meeting was held at the WSM-TV Studios in Nashville with an attendance of 48 members and guests. The speakers were Ken Knaus and Bob Baker, both of Eastman Kodak, and Jim Solomon of MPL Motion Picture Laboratories, Inc. The meeting opened with a very amusing film entitled *Live TV*. Knaus provided a demonstration of Kodak's new high-speed 7250 film with an ASA rating of 400 under different lighting conditions from very low light conditions up to 40 fc.

Baker demonstrated, on 35mm, Eastman Kodak's new color intermediate II film, type 5243/7243 under various lighting conditions.

Solomon showed samples on 16mm of direct dupe and dupe negative prints processed at MPL. The demonstration showed the improved quality of the prints. Baker showed also several simulated commercials that had been prepared to demonstrate the high quality of the film.

Following the presentations, another interesting film entitled *The TV Newsmen* was shown. This was a documentary prepared by a West Coast TV station. — S. Lee Whitehurst (Secretary-Treasurer), WSM, Inc., P.O. Box 100, Nashville, TN 37202.

# Book Reviews

**Quadrphony: An Anthology of Articles on Quadrasonic Sound From the Pages of the Journal of the Audio Engineering Society,** Vol. 17-Vol. 23 (1969-1975).

Published (1975) by the Audio Engineering Society, Inc., 60 E. 42 St., New York, NY 10017, 264 pp. Diagrams. 8½ X 11 in. Paperbound. Price \$9.00.

The anthology of quadrasonic sound contains 34 papers written by 42 authors. These articles document the efforts of the scientists and engineers responsible for carrying out the research, development and commercialization of quadrasonic sound reproduction. The great majority of technical papers treating this subject, by authors throughout the world, have been published in the *Journal of the Audio Engineering Society*. The book is divided into five sections as follows: I. Subjective Effects and

Sound Field Analysis; II. 4-2-4 Matrixing; III. Disc Recording; IV. Broadcasting; V. Signal Processing.

The first section contains a paper on "Subjective Assessment of Multichannel Sound Reproduction." A very important paper, in two parts, reports the "NQR (National Quadrasonic Radio Committee) Measurement of the Subjective Aspects of Quadrasonic Sound Reproduction" in which 4-4-4 (four channels of transmission), 4-3-4 (three channels of transmission), 4-2-4 (two channels of transmission) quadrasonic systems are compared in a series of comprehensive listening tests. The papers involving the sound field are: "Toward a more Accurate Spacial Environment"; "Sound Image Localization in Multichannel Matrix Reproduction"; "A Method of Analyzing the Quadrasonic Sound Field"; "Phase difference and sound image localization"; and "Simple Equations for Multichannel Stereophonic Localization." Other papers in this section are "Dis-

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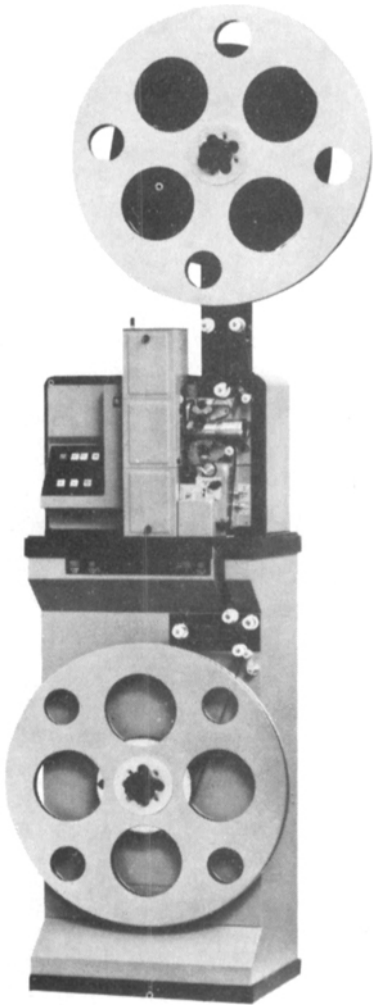
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crete-Matrix Multichannel Stereo"; "Correction for Discrete Matrix Multichannel Stereo"; and "Periphery with Height Sound Reproduction." This section is an excellent exposition on subjective effects and sound field analysis.

The second section on 4-2-4 matrixing includes papers on the following subjects: "Four Channels and Compatibility; Directional Ambiguity of Quadraphonic Matrices"; Multichannel Stereo Matrix Systems; Quadraphonic Matrix Perspective — Advances in SQ (Stereo-Quadraphonic) Encoding and Decoding Technology; Analyzing Phase-Amplitude Matrices; A Geometric Model for Two-Channel Four-Speaker Matrix Stereo System; Proposed Universal Encoding Standards for Compatible Four-Channel Matrixing; 4-2-4 Matrix Systems; Standards and Interchangeability. The papers in this section provide a wide coverage of the encoding, decoding and performance of the 4-2-4 quadraphonic sound reproducing system.

The third section provides papers on the following subjects: Suggested Performance Requirements for Compatible Four-Channel Recordings; A Compatible Stereo-Quadraphonic (SQ) Record System; Recording Techniques for SQ Matrix Quadraphonic discs; A Discrete Four-Channel Disc and Its Reproducing System; Further Improvements in the Discrete Four-Channel Disc System CD-4; Technical Requirements and Analysis of Phono Cartridges for Proper Playback of CD-4 Discrete Four-Channel Records; The CD-4 Mark II Modulation System; Noise Reduction in the CD-4 Disc System; QMX Carrier Channel Disc. The papers in this section cover in a very comprehensive manner the 4-2-4 and 4-4-4 quadraphonic sound recording and reproducing systems by means of disc records.

The fourth section on broadcasting involves papers for FM (frequency modulation) transmission in four channels on the following subjects: Time Division Multiplex for Four-Channel FM; Multiplex Methods for FM Broadcast Transmission of Four-Channel Stereo Signals; Compatible FM Broadcasting of Panoramic Sound; QFMX-quadplex FM Transmission Using the 4-4-4 QMX Matrix System; Some Considerations Regarding Four-channel stereo broadcasting systems. The proposed systems in this section will be considered by the FCC (Federal Communication Commission) for FM transmission in four channels.

The fifth section contains two papers on signal processing as follows: On the Processing of Two and Three Channel Program Material for Four-Channel Playback; and A Quadraphonic Oscilloscope Display Technique.

A distinct feature of this book is that the subject matter is written by 42 authors, as contrasted to one or two in the conventional book, resulting in a wide diversity of style and viewpoint. This anthology should give the reader both an historical perspective and a basic understanding of quadraphonic sound reproduction and systems. For anyone, in any manner, interested in quadraphonic sound reproduction this book supplies a very complete exposition on the subject. — *Harry F. Olson*, RCA Laboratories, Princeton, NJ 08540

## Sound Recording

Ed. John Eargle. Published (1976) by Van Nostrand Reinhold Company, 450 West 33rd Street, New York, NY 10001. 328 pages. 232 illustrations. 8 by 10 1/4 in. Price \$16.95.

Sound Recording is an exposition on the background information on acoustics, psy-

choacoustics, and stereophonic and quadraphonic sound followed by detailed explanations of recording tools and their applications. The book is written in the vernacular of the terminology used by the recording engineer and technician. The author stresses the nonmathematical treatment of the subject matter of the book. Instead he leans heavily on illustrations which occupy about one half of the pages in the book.

The first chapter in the book is an elementary treatment of the physical aspects of sound including sound waves, measurement of sound pressure, diffraction and refraction of sound, reverberation, directivity of sound sources and behavior of sound in small rooms.

The second chapter on psychoacoustics provides a very fine treatment of binaural hearing, phantom images, time delay, artificial reverberation and subjective attributes of performance environments.

The third chapter on stereophonic sound illustrates the use of coincident and spaced microphone techniques, signal processing, monophonic compatibility and listening room and loudspeaker considerations. In the illustrations of coincident microphone techniques there is some confusion because the directional patterns do not correspond to the captions. The directivity patterns depict very high order gradient microphones while the captions correctly indicate first order gradient microphones.

The fourth chapter on quadraphonic sound illustrates the use of phantom images, moving sources, synthesis techniques and a description of 4-2-4 matrix (two channels of transmission). The CD-4 (four channels of transmission) is considered in a later chapter. The reason for this is not apparent.

The fifth chapter on microphones provides descriptions of carbon, crystal, magnetic and capacitor microphones. The standard generic terminology for the author's "magnetic" microphone is "electrodynamical" microphone and for the "capacitor" microphone is "electrostatic" microphone. In the opinion of the reviewer, there is no reason for this deviation from standard terminology. Other considerations are electret microphone, random efficiency and cancellation effects.

The sixth chapter on loudspeakers describes monitoring loudspeakers from three commercial companies, specifications for monitoring loudspeakers and equalization for monitoring rooms.

The seventh chapter on audio control systems is an excellent description of flow diagrams in a channel, levels and mixing, operational amplifiers, 20 X 4 consoles, 16- and 24-track consoles and automating the mix-down function.

The eighth chapter on magnetic recording provides a good description of the important subjects in this field as follows; electric and magnetic considerations of the recording and reproducing process, linearizing techniques, mechanical motion of the tape, synchronizing and indexing techniques and alignment and equalizing standards.

The ninth chapter on signal processing devices includes descriptions of equalizers, filters, compressors, limiters, noise gates, expanders, noise reduction and artificial reverberation.

The tenth chapter on disc recording and reproduction is an excellent description of disc groove geometry, cutting heads, signal conditioning techniques, stylus groove relationships, master lacquers, disc transfer systems, variable pitch and depth control, CD-4 four channel disc technology, calibration of disc transfer system and record processing.

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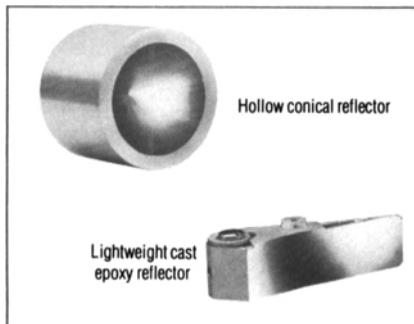
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An appendix includes useful equations, simple mathematical relationships and absorption coefficients for common acoustical materials.

The extensive use of graphical and non-mathematical explanations of current techniques and devices employed in sound recording renders the book easy to read and useful for producers, engineers, technicians and serious amateurs engaged in the recording of sound on magnetic tape and disc records. — *Harry F. Olson, RCA Laboratories, Princeton, NJ 08540*

### Laser 75 Opto Electronics Munich 24–27 June 1975 Conference Proceedings

Ed. Prof. W. Waidelich. Published (1976) by IPC Science and Technology Press Ltd., 32 High St., Guildford Surrey, England GU1 3EW. 293 + viii pp. Illus. 8½ × 12 in. Price \$22.

The *Proceedings* consists of 75 papers, 12 of which are one page abstracts and 20 are in German. The topics that were included are: Opto-Electronic Components; Laser Systems; Lasers in Nuclear Energy Technology; Television Pickup; Lasers in Material Processing; Lasers in Medicine; Opto-Electronic Displays; Lasers in Optical Communications Engineering; Lasers in Measuring and Testing Practice; Infrared and Ultraviolet Techniques; Lasers in Data Processing; and Lasers in Environmental Measuring Techniques.

The papers that are included represent a good cross section of the laser field with the minimal addition of the papers on solar cells, photodiodes, television solid state image sensors, infrared and ultraviolet detectors and a tutorial paper on "The Evolution of Infrared Technology."

Several papers of special interest are noted below.

(1) "Laser Fusion" by K. Eidmann — The paper describes the physical principles and most important problems associated with studies in controlled thermonuclear fusion as a long term solution to the energy problems. It describes a series of experiments using a fusion fuel consisting of tiny pellets of deuterium and tritium that are strongly heated by intense irradiation with laser light so that fusion reaction with energy output can take place.

(2) "The Role of the Gas Nozzle in Metal Cutting with CO<sub>2</sub> Lasers," by N. Forbes; and "Material Processing with Solid State Lasers: drilling, cutting and welding" by E. Kocher — These two papers describe special techniques for material processing with an explanation of the procedures, equipment and results that can be obtained. Various photographic examples are included for a clear understanding of the different types of techniques.

(3) "Holographic Interferometric Investigations of Plastic Parts" by E. Roth — By using holographic interferometry, built-in flaws can be detected in welded PVC sheets, PVC pipe coatings and orthotropic FRP sheets. The geometry and density of the interference lines will give precise qualitative information about the kind of deformation produced by a flaw in the material.

(4) "The Laser as a Probe in Bio-Medical Research" by P. Greguss; and "Clinical Results of Wound-Healing Stimulation with Lasers and Experimental Studies of the Action Mechanism" by E. Mester — The application of lasers for treatment and diagnosis of biomedical process is described by these papers. The use of laser beams for analysis by immunofluorescence makes short illumination times possible. The laser beams help identify bacteria and tissue

structures by means of the scatter pattern. Holographic methods are used for both measuring purposes and Fourier spectroscopy.

The healing effects on sutured wounds, human ulcers, and a study of vascularization of a rabbits ear chamber, are among other areas reported on.

In general the book is well edited with easily read type and clear illustrations and photographs. As a reference source it would be desirable to add to a library if the usage warrants the cost of approximately \$44. — *Lincoln L. Endelman, Aerospace Systems, c/o Perkin-Elmer, 411 Clyde Ave., Mountain View CA 94040.*

### The Silent Clowns

By Walter Kerr. Published (1975) by Alfred A. Knopf, Inc., 201 E. 50 St., New York, NY 10022. Pages 1-364; sources and index, pp. 367-373; profusely illustrated. 9 × 12 in. Price \$17.95.

The cue specifically for SMPTE readers is in the jacket photograph of Chaplin behind a modest cine camera calling for attention with his finger pointing to the exposed mechanism. This promise of attention to the use of technology is fulfilled; but author Kerr tells much more: what all cine films should be, and much of what is basic art. In some ways Keaton was more the essence of cine film than Chaplin; there is also extensive attention for Sennet, Langdon, Lloyd, Laurel and Hardy, and Linder. The 37 chapters and profusion of illustrations bring the silent clowns to us in fine style to gratify nostalgia or more recent addiction to motion pictures.

This is a sufficiently heavy book to provide sustained leafing through for oldtime's sake; it will also stimulate the serious student to many ways of thinking about film. Both seasoned and young filmics will risk involvement when they begin to read the text. When we were technical primitives and had for film no color, sound or third dimension, we were enjoying the epitome of the art. In the first chapter, Mr. Kerr refers to Kevin Brownlow who wrote in *The Parade's Gone By* about the expired art of the silent film. In it Mary Pickford was quoted: "It would have been more logical if silent pictures had grown out of the talkie instead of the other way round." Mr. Kerr explains this as no mystery: "What I think she had in mind was a truism not about silent films in particular but about art in general. Logically, art begins in a taking away. No painter or poet or dramatist in his right mind ever attempts to reproduce the abundance of life *in toto* . . ." Also, film creators may refer to Rollo May's *The Courage to Create* in which he writes, "The imagination leaps to form the whole, to complete the scene in order to make sense of it . . ."

Space must permit here a plea for an end of films with no spaces, no pauses in them, made by authoritarians who impose, especially in documentaries, superfluous colloquy and overriding noise/music, never leaving a split second for the viewer to use his own mind or imagination. — *Victor H. Allen, Old Sleepy Hollow Rd., Pleasantville, NY 10570.*

### Data Communications Dictionary

By Charles J. Sippl. Published (1976) by Van Nostrand Reinhold, 450 W. 33 St., New York, NY 10001. 530 pp. 6 × 9 in. Price \$19.95.

The *Data Communications Dictionary* is an excellent reference for those who want to keep pace with the rapidly expanding field of data communications. It defines 14,500 terms, con-



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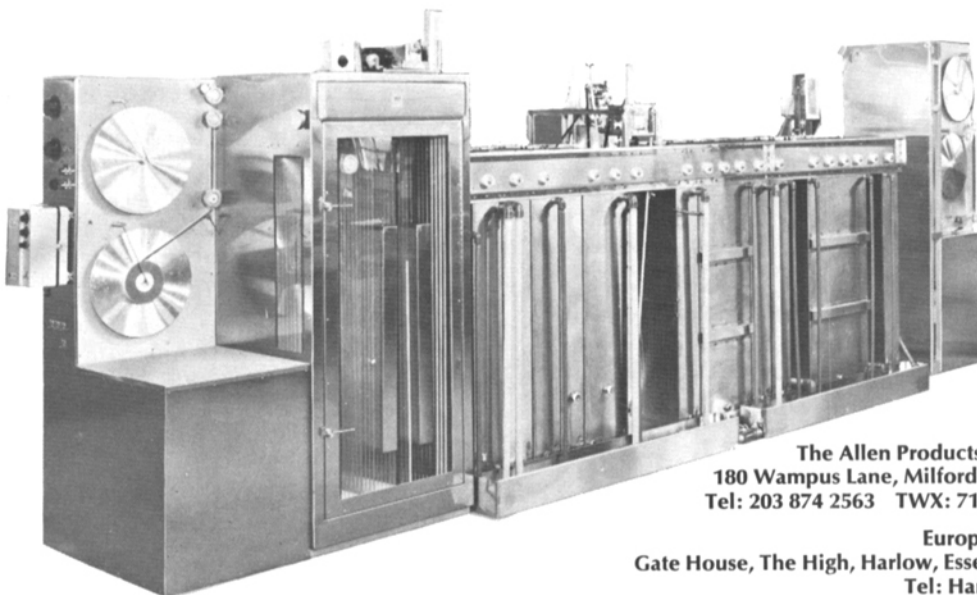
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cepts, acronyms and abbreviations used in data processing and communications, and is the first dictionary to cover these interrelated areas of information systems in one convenient volume. The dictionary is cross-referenced for easy use and it encompasses the major areas of data communications, carrier systems, special data networks, and data system equipment and components. It is very easy these days to get lost in a thicket of technical terminology, but this dictionary can help the reader to extricate himself because it provides numerous guideposts for areas such as: information utilities and data banks; electronic funds transfer systems; Telex, TWX, WATS, and interconnects; time-sharing service networks; microprocessors and micro-computer systems; minicomputer control systems; CATV two-way home and specific site networks; programmable calculators as terminal systems; and input/output voice communications systems.

There were some omissions that surprised us: for example, there were no definitions of video-disc or muldem (for multiplexor-demultiplexor) or codec (for coder-decoder). The proofreading, both general and technical, was quite uneven: errors such as the word "of" being printed "on" are far too common, and engineering abbreviations are inconsistent and meet no recognized standard. (We saw PSEC instead of ps for picosecond and Mh instead of mH for millihenry.)

Still, the book's strong points are substantial enough to make this a valuable addition to the bookshelves of anyone working in the field of data communications. Charles J. Sippl, we may note, is the author of several other excellent computer and communications dictionaries, handbooks, and professional articles. — *Edit.*

## The American Film Institute Guide to College Courses in Film and Television

Ed. Sam L. Grogg, Jr. Published (1975) by Acropolis Books Ltd., Colortone Bldg., 2400 17th St. N.W., Washington, DC 20009. 286 + xii pp. 5½ × 8½ in Softbound. Price \$6.95.

This updated edition of the American Film Institute's Guide to College Courses in Film and Television lists 791 colleges and universities offering 8225 courses in film and/or television. This represents a notable increase over the listings in the last (1973) edition — 613 schools and 5889 courses. An invaluable reference of particular value to students as well as to parents, teachers, guidance counselors, librarians, film distributors and others interested in film and television studies, the book lists in concise and easily findable form an enormous amount of information.

Included in the listings are: listing of schools by state; names of full-time and part-time faculty; information on scholarships and distinctive programs; the philosophy, priorities and aims of each program; film and TV equipment and facilities; listing of schools according to academic emphasis; listing of special degree programs and teacher training programs. An entirely new section of the updated *Guide* is a section giving the names and addresses of foreign film schools.

The Foreword on Film is by Robert W. Wagner, Director of Graduate Studies, Department of Photography and Film, Ohio State University, and the Foreword on Television is by Erik Barnouw, Professor Emeritus, Columbia University. These two Forewords alone, in the

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opinion of this reviewer, are worth the price of the book.

Dr. Wagner notes, "The motion picture, a phenomenon among the communicative arts which academicians have yet to explain, continues to excite the creative, social, scientific, and personal sensibilities of people of every type all over the world."

In Dr. Barnouw's stimulating Foreword he notes, "In our day it is not through books, newspapers or even newscasts that the average person forms his impressions of the world he lives in. Long before he has done much reading, or can make much sense out of the fragmented contents of newscasts, he has watched thousands of hours of events via the picture-window we call television . . ."

This book should certainly be in the reference library not only of students but of everyone whose interests are directly or peripherally related to the motion picture and to television. — *Edit.*

## Acronyms, Initialisms, & Abbreviations Dictionary

(Fifth Edition, Vol. 1.) Ed. Ellen T. Crowley. Published (1976) by Gale Research Co., Book Tower, Detroit, MI 48226. 757 + xiii pp. 11 1/4 x 9 in. Price \$38.50.

This book is not perfect. Plot and character development are both weak. Once in a while a researcher will try to decode an acronym and he won't find the key to it here because *nobody* can completely keep up with the proliferation of acronyms and abbreviations. So much for the negative criticisms. In this book, you *will* find more than 130,000 entries that cover aerospace, associations, biochemistry, business and trade, domestic and international affairs, education, electronics, genetics, government, labor, medicine, military, pharmacy, physiology, politics, religion, science, societies, sports, technical drawings and specifications, transportation, and other fields. We can't say whether AIAD has collected all the ticker symbols for all the stock exchanges everywhere, but a lot of them are included. We found it particularly useful in our work that several thousand foreign terms are included. Any person or organization whose field is broad or interdisciplinary is likely to have to cope with jargon, including acronyms and abbreviations. Nothing else that we have seen is so effective as this dictionary at breaking the codes and thereby helping us to cope with the languages of our business. As far as we are concerned, the book has got to be indispensable. — *D.H.*

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