EDUCATION INDUSTRY NEWS

UNIATEC 8th Congress

UNIATEC (Union Internationale des Associations Techniques Cinématographiques) will hold its 8th Congress in Brussels September 23–27 at the Palais des Congrès.

The theme of the Congress will be "Trends in cinematography and television and new media in the service of audio-visual techniques for the communication of information." Chairman of the Congress is Ing. Louis Meeussen, President of the Commission Supérieure Technique du Cinéma Belge. Meeussen is with Gevaert-Agfa N.V. in Mortsel, Belgium.

The official languages at the Congress will be English, French, German and Russian. A simultaneous interpreter service in these four languages will be available.

The 8th Congress will be preceded by the Sixth International Competition on Film Technique, reserved for the Members of UNIATEC and will take place September 20–22.

The SMPTE, which recently became a member of UNIATEC, will send representatives to the Congress. Official SMPTE delegates are scheduled to be SMPTE President G. Carleton Hunt, DeLuxe Laboratories, New York, and SMPTE Sections Vice President Wilton R. Holm, Motion Picture and Television Research Center, Hollywood.

SMPTE's status as a member will be officially ratified at the Congress.

The Rochester and Toronto Sections of the Society are planning a "Little Conference" on the theme of "Telecine Color — Mixing and Matching" to be held September 21 in the Dryden Theater of the George Eastman House, Rochester, N.Y. The program will cover the many factors involved in the proper utilization of film with color television. The speakers will present the views of producers, cameramen, laboratories, distributors, television stations and electronics manufacturers.

The Ladies Program will feature a trip through the Finger Lakes Region and a visit to a famous New York State winery. Closing event of the Little Conference will be a dinner dance at the Sheraton Hotel in Rochester.

The Association of Cinema Laboratories, 1925 K St., N.W., Washington, D.C., has released the 1967 Annual Production Survey of Processed Film Footage. Seventy per cent of the reported processed film footage was color, with an overall increase over 1966 for all film sizes of 10.70%. Largest color increase was in 8mm with an increase of 85.31%; 35mm and 16mm showed gains of 6.29% and 13.33%, respectively. There was an overall decline in black-and-white footage of 21.13%. Total footage for both black-and-white and color was 2,640,454,324, a decline of 1.28% from 1966.

Black-and-white 35mm film declined 32.14% in 1967; 16mm declined 16.63% and 8mm declined 16.11%. Total footage of 8mm in 1966 was 96,153,695, of which 1,655,877 was super 8. Total for 1967 was 80,666,967, of which 6,310,110 was super 8. Total color footage for 8mm in 1966 was 33,928,888, of which 8,715,725 was super 8; 8mm color footage in 1967 was 62,874,013, of which 6,310,110 was super 8.

The survey is based on replies received from 66 firms who reported footage in the same category in each year.

T. Howard James has been awarded Honorary Membership by the Society of Photographic Scientists and Engineers. Presentation of this and 20 other honors and awards was made by SPSE Honors and Awards Chairman, Allie C. Peed, during ceremonies at the SPSE Annual Conference held in Boston. Dr. James was cited "for his well-recognized contributions to the progress of the science of silver halide photography." He is a Senior Research Associate at Kodak Research Laboratories and he served as Editor of the SPSE journal, *Photographic Science and Engineering*, for 11 years.

The Charles E. Ives Memorial Award for the best engineering paper appearing in *Photographic Science and Engineering* was presented jointly to Steven H. Lerman, William A. Minnick and Robert R. Shannon for "Computer Model Image Structure." The SPSE journal award (Science) was presented to Bernard Zuckerman for "Quantum Efficiency Studies on Silver Bromide Single Crystals and the Effect of Dye Concentration on the Efficiency of Spectral Sensitization." Honorable Mention was awarded to Jacob Q. Umberger for "Solution and Gelation of Gelatin as Related to Solvent Structure."

Ninth International Congress

With a background of the Denver Hilton Hotel, site of the 9th International Congress on High-Speed Photography scheduled for August 2–7, 1970, are, left to right: John I. Newell, Local Arrangements Chairman; E. B. McGreal, SMPTE Conference Vice-President; and Carlos H. Elmer, Congress Chairman.

The Ninth International Congress on High-Speed Photography will be held August 2–7, 1970, at the Denver Hilton Hotel, Denver, Colo., under the auspices of the Society. The First and Fifth such Congresses, held at Washington, D.C., in 1952 and 1960, were also sponsored and conducted by the SMPTE, supported by other professional societies for the 1960 meeting.

Carlos H. Elmer has been appointed Chairman of the Congress, with the following Liaison Committee appointed during the 102nd Technical Conference in Chicago to review plans and policies of the Congress and to advise the Congress Chairman: Max Beard, William G. Hyzer, E. B. McGreal, Rodger J. Ross and Deane R. White.

Chairman Elmer's address is 6620 E. Cholla St., P.O. Box 875, Scottsdale, Ariz., 852520.

The following appointments have been announced by the Chairman, and detailed planning is now underway in preparation for this major international conference:

Associate Chairmen — William G. Hyzer, Robert D. Shoberg and John H. Waddell. Max Beard serves *ex-officio* as U.S. Delegate to the International Committee for the planning and conduct of High-Speed Photographic Congresses.

on High-Speed Photography

Deputy Chairman -- Tryggve Ramqvist, Chairman, 8th International Congress on High-Speed Photography, Stockholm.

SMPTE Conference Vice-President E. B. McGreal has announced the appointment of John I. Newell, Past-Chairman of the SMPTE Denver Section, as Chairman of the Local Arrangements Committee for the 9th Congress. Further appointments within the Local Arrangements Committee will be announced in the next issue of the *Journal*.

The Chairman reports that a summer meeting was scheduled in response to numerous requests from workers in the fields of photographic instrumentation and high-speed photography to permit increased participation by faculty members and research associates at colleges and universities, as well as the opportunity for attendance by families of the delegates. Excellent facilities exist at Denver and surrounding areas for a full program of technical papers, equipment exhibits and social activities.

The following areas of responsibility have been assigned to the Associate Chairmen:

(1) Mr. Hyzer is responsible for Congress publications, with emphasis upon the *Proceedings* to be published following the Congress, but also including supervision of Congress announcements, preprints, and printed program.

(2) Mr. Shoberg will organize and conduct the program of scientific papers.

(3) Mr. Waddell is responsible for the organization of industrial and scientific support of the Congress, including designation of the Committee of Honor, liaison with the SMPTE Conference Vice-President, and the reception of distinguished foreign delegates.

(4) Mr. Beard will provide liaison with interested agencies of the U.S. Government in addition to his function as U.S. Delegate to the International Committee.

The position of Deputy Chairman is an honorary one accorded the Chairman of the prior Congress.

Chairman Elmer has stated: "I am pleased that four Past-Chairmen of the Society's Engineering Committee on Photo-Instrumentation have offered to undertake these major functions of the Congress. In particular, Mr. Hyzer also serves as the Society's Vice-President for Photo-Instrumentation Affairs; Mr. Shoberg has just completed his term as Chairman of the engineering committee in this field; Mr. Waddell was the primary force in organizing and conducting the first such international congress; and Mr. Beard served as Chairman of the Fifth Congress in 1960. With the services of these four men and committee members assisting them in their functions, plus the support and interest of the Society as a whole, I feel that the Denver conference two years hence will reflect great credit upon U.S.A. as the host country."

The Jaromir Kosar Memorial Award was presented to Robert H. Sprague for ". . . outstanding and continuing contributions to the free-radical photo systems. . ."

David W. Latham, a graduate student at the Smithsonian Institution Astrophysical Observatory, received the Itek Award for "an outstanding original student publication in the field of photographic science and engineering."

Fellowships were awarded to Fritz Dersch, John F. Hamilton, Herbert Meyer and Mikio Tamura. Dr. Dersch was cited for ". . . substantial contributions to photographic science and the production of improved emulsions." Mr. Hamilton was cited for ". . . his fine contributions to our knowledge of the mechanisms of latent image formation, particularly the understanding of the mobility of holes and electrons and the silver halide crystals." Dr. Meyer was cited for ". . . his numerous contributions to the photographic industry, both in the science of photography and in the practical applications of photography to motion pictures and television." Dr. Tamura was cited for ". . . his outstanding contributions to our knowledge of the mechanism of photographic sensitization and desensitization, the photochemistry of silver salts, and the properties of gelatin."

Senior Memberships were awarded to John H. Jacobs and Edward K. Kaprelian. Service Awards were presented to James E. Bates, Fordyce M. Brown, Linton J. Godown, Thomas T. Kasiwabara, Richard D. Murray, Joseph W. Schmit, Joseph G. Smajo, (Mrs.) Arlene Dale Stratton and Maj. Ralph Andrea.

The Society of Photographic Scientists and Engineers will hold its 1968 Symposium on Photo-Electronic Imaging October 31 – November 2 in Washington, D.C. For the purposes of the symposium, photo-electronic imaging is defined as any imaging system in which optics, electronic photosensitive devices, materials and photographic processes play a major role. Five papers sessions are planned, beginning with a Tutorial Introduction Session by a group of scientists, each an authority in his field. The other four sessions will each focus on a particular aspect and will feature an invited state-of-the-art review paper covering significant developments in the field. Chairman of the Tutorial Introduction Session will be T. Huang of the Massachusetts Institute of Technology. Other session topics and chairmen are: Present and Futures Systems, Leon Kosofsky, NASA; Pictorial Encoding, M. Winkler, Bell Aero Systems; Signal Treatment, R. Nathan, Jet Propulsion Labs; and Image Formation, Dwin Craig, Fairchild Hiller Corp.

Further information is available from J. R. Iverson, Aerial Photography Div., ASCS-USDA, Room 4405, Auditors Building, Washington, D.C. 20005 or from SPSE headquarters at 1330 Massachusetts Ave., N.W., Washington, D.C. 20005.

Motion Picture Production-Management and Procedures is a course presented by the University of Southern California's Division of Cinema, University Park, Los Angeles, Calif. 90007, in cooperation with the SMPTE Committee on Education. The 3-hour evening classes will be held each Wednesday, beginning September 18 and will extend through January 15, 1969. In announcing the course, the Division of Cinema pointed out that the increasing number of films produced every year by independent producers and organizations requires greater dependence on separate individuals and companies for services and equipment. The course is planned to help management involved in this type of production avoid many problems through a better understanding of current practices and procedures. Enrollment fee is $50 and the course is non-credit.

The 12th annual San Francisco International Film Festival will be held Oct. 24 – Nov. 2 at the Masonic Auditorium, Nob Hill, San Francisco. Highlights of the Festival will include noncompetitive showings of 16 feature films by outstanding producers in the United States and abroad. Six *Craft of the Cinema* retrospective films showing the work of outstanding producers, directors and artists throughout the world will be shown. Although the competitive aspect of the Festival has been de-emphasized, there will be a competitive division for awards to industrial and business films (Film as Communication), art and experimental films (Film as Art) and television films. The Festival is sponsored by the San Francisco Chamber of Commerce. Further information is available from San Francisco International Film Festival, 333 Pine St., Suite 514, San Francisco, Calif.

The first Motion Picture Seminar of the Northwest was held May 24–25 in Seattle, Wash. Highlights of the seminar included a discussion of types of animation available to nontheatrical producers, including com-

puter-drawn animation. Papers were presented on new processing techniques, interpretative uses of additive color printing and methods and uses of optical effects printing. The program included an explanation and demonstration of the Mini-Sync, a wireless double-system synchronization device for the Auricon, as well as presentations and discussions of other new equipments and film stocks. Moderator of the seminar was Robert Kelley, of San Francisco.

A meeting of the New York State Projectionists Association was held May 27 in Albany, N.Y. The meeting was conducted by George Samuelson who is in charge of the educational programs for the association. Highlights of the meeting included a presentation of new equipment and a discussion of projector and sound problems conducted by Larry Davee, President of Century Projector Corp. The audience was informed that, on January 18, the Underwriters Laboratories issued new

Larry Davee discussing automation.

regulations which allow the operation of projectors without "fire" rollers provided a decal is placed on each projector stating "For use with safety film only. Not for use with nitrate or other flammable film." Among the new equipment, double-dissolving shutters were demonstrated. The new shutters cut off light four ways, exactly on the optical center of the lens system. Automation equipment, developed by Century Corp., was demonstrated by means of a panel of indicator lights to simulate the functions as they would be performed in a booth and a theater.

A five-day seminar on The Photographic Process as a Scientific Instrument will be held September 9–13 at the Rochester Institute of Technology. The seminar will be sponsored by the Institute's School of Photographic Arts and Sciences and Extended Services Division. Seminar sessions will be held in the Frank E. Gannett Memorial building. Sessions on nonsilver processes, microphotography and color sensitometry will be held as well as sessions on statistics, chemistry, physical properties, contamination and image evaluation. Seminar sessions will be conducted by Burt H. Carroll, John F. Carson, Thomas T. Hill, Albert D. Rickmers, William S. Shoemaker, Hollis N. Todd and Richard D. Zakia, all of RIT's photography school; and Joseph H. Altman, of Eastman Kodak Co. Further information is available from Mrs. Doris Dugan, Extended Services Div., Rochester Institute of Technology, P.O. Box 3416, Rochester, N.Y. 14614.

The Tenth American Film Festival sponsored by the Educational Film Library Assn., 250 W. 57 St., New York, N.Y. 10019. More than 300 films and filmstrips were screened in the competition categories and special events. Emphasis of the Festival was on Youth and Films and the program featured field trips to Youth Film Production Centers, arranged by the New York Film Council. The tour included city settlement houses and public and private schools. A talk on Movies by Teenagers for Teenagers was given by Rodger Larson, Director of the Young Filmmakers Foundation.

The 7th Ann Arbor Film Festival will be held March 12–16, 1969, at Ann Arbor. Following the screenings in Ann Arbor, some 12 hours of films from the Festival will be made available to qualified institutions on consecutive weekends. Further information is available from Mrs. Jean Martin, Secretary, 7th Ann Arbor Film Festival, Art Department, College of Architecture and Design, University of Michigan, Ann Arbor, Mich. 48104.

The Sterckshof Museum for Photography and Cinematography is a newly established section of the Provincial Museum for Arts and Crafts in Antwerp, Belgium. The Sterckshof Museum has a substantial collection of historical photographic equipment which is supported by the photographic industry, particularly by the Agfa-Gevaert group. The new museum has a photographic library of some 2,000 volumes, a loan from the City of Antwerp. A donation of its historical archives was made by Gevaert-Agfa N.V., which also provides an operating allowance. Also, photographic and optical equipment has been made available by the City of Antwerp from the private scientific collection of Dr. H. van Heurck. A new building is planned to house the museum's growing collection.

The Professional Make-Up Artist, a leaflet published bi-monthly by the Research Council of Make-Up Artists Inc., 52 New Spaulding St., Lowell, Mass., for professional make-up artists, contains a reprinted article by Vincent J-R Kehoe, RCMA Director of Research, which appeared first several years ago in the Local 798 IATSE Monthly Bulletin. At that time, the principles set forth by Mr. Kehoe were not generally accepted by professionals in the field of make-up, but at present they are "Standard Operating Procedure," Mr. Kehoe reports in a Foreword to the reprinted article. The article (in the May–June 1968 leaflet) deals mainly with make-up required for color television and film and explains how it differs from make-up used for black-and-white.

An article in the March–April 1968 leaflet reveals the secrets of a "temporary face-lift" and shows by means of diagrams and description how professional studio make-up artists have been "lifting" aging actresses. All that is required is a thin material (mousseline de soie), pinking shears (to cut the material to the right shape), an elastic band, a dressmaker's hook and adhesive. The adhesive, the article states, is the *real* secret. The adhesive (to hold the lift to the face) is known as Lacetac or Matte Plastic Sealer. It is a product of RCMA.

Audio-Visual Market Place will be published in the Fall (1968) by R. R. Bowker Co., 1180 Avenue of the Americas, New York, N.Y. 10036. The book will provide information on producers, distributors, publications and associations in the audio-visual field. Entries for manufacturers and suppliers of audio-visual equipments and materials will include company name, address, key personnel, specialities and membership in audio-visual organizations. Other features will include bibliographic data on magazines and reference books in the field; a calendar of audio-visual trade events and conventions; reports on audio-visual statistics and a list of professional and trade organizations including addresses, telephone numbers, executives' names, special interests and publications. A section of the book will include specialists in language laboratories, electronic classrooms, library listening systems, equipment rental, closed-circuit TV, film libraries and other services.

An article in Educational Broadcasting Review, issue of February 1968, asks "Is There a Constitutional Flaw in the Public Broadcasting Act of 1967?" The author, Walter B. Emery (Professor of Television and Radio at Michigan State University) holds a law degree from the University of Oklahoma and is licensed to practice before the United States Supreme Court. Briefly, Mr. Emery contends that a provision prohibiting educational stations from editorializing on contemporary issues is a serious flaw in the Act.

The February issue also contains other interesting articles, including "Life Without ETV: A Survey" by Donald R. Browne; "Do We Need Another TV Rating Study?" by Robert G. Finney; "The Study of Television Aesthetics" by Herbert Zettl; "Marconi, Royalty, and Yugoslavian Radio" by Milan Zivanovic; and "Repeat Programming" by Warren S. Park, Jr. There are also a number of regular departments, such as Book Reviews, Program Reviews, Research Reviews and the "Open Forum."

Educational Broadcasting Review (formerly *NAEB Journal*) is published bi-monthly by the National Association of Educational Broadcasters in cooperation with Ohio State University. Editorial offices are at Ohio State University, 154 North Oval Drive, Columbus, Ohio 43210. The Editor is Allen E. Koenig.

The Proceedings of the 1967 Technical Session of the International Commission on Illumination (CIE) are available from Harry K. Hammond, Secretary, U.S. National Committee of CIE, National Bureau of Standards, Washington, D.C. 20234, at a price of $20 for a two-volume set. The volumes are not sold separately. The *Proceedings* (656 pp.) cover all of the technical sessions and include all of the papers and discussions presented at the meeting in Washington, D.C., in June 1967.

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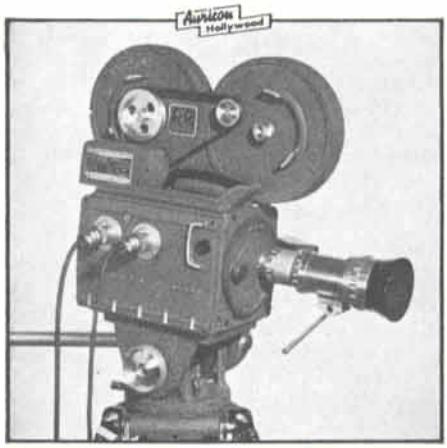

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International Video Corp. Wins SMPTE Exhibit Award

San Francisco Section Chairman Burton Smith presents the SMPTE Exhibit Award Plaque to Donald F. Eldridge, President of International Video Corp.

International Video Corp. of Mountain View, Calif., won the award for the best display at the 103rd SMPTE Technical Conference in Los Angeles May 5-10.

In ceremonies at the June 20th SMPTE San Francisco Section meeting, Section Chairman Burton Smith, Cine Chrome Labs, presented the award plaque to IVC President Donald F. Eldridge. The meeting was held at IVC in Mountain View and was attended by 65 members and their friends.

IVC is one of the nation's newest manufacturers and marketers of color TV cameras and recorders. IVC was founded in 1966 and has already established itself as a major factor in the color television equipment industry.

IVC's revolutionary color television cameras and color video-tape recorders represent genuine technological, design and cost breakthroughs. Product acceptance has been immediate with such companies as Bell & Howell, R.C.A. and G.P.L. selling IVC products in educational and training applications.

This equipment was demonstrated by Ray West and Carter Elliott of IVC.

The Exhibit Award is presented by the Society in recognition of the exhibitors' efforts in preparing effective and rewarding displays. The winner of the award is chosen by the Exhibit Award Committee. The Committee chooses that exhibit it feels to be the most imaginative, effective and best presented, regardless of size.

According to Burton Smith, "The day of opportunity is still very much at hand when a two year old company can become a front runner and have the top exhibit at their very first attempt."

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way at Eastman Kodak Co. in collaboration with the Engineering Index. Computers are being applied to the problem with a technique known as Selective Dissemination of Information. The research includes use of indexing and bibliographic information supplied on magnetic tape by the Engineering Index. Subject fields are plastic engineering and electrical and electronic engineering.

Users list their interests on a series of "profiles." These are compared by the computer to other "profiles" or indexing words describing the contents of the articles in the various journals. When matches are found, the information is recorded in the computer's memory. Documents relating to each man's interests are then brought together by a sorting operation. A digested description of each document is transferred to a notification card which is provided to the user on a programed monthly basis together with an advance copy of the article's abstract.

A new dry-processing system which uses only heat and light to develop the image rather than wet developing solutions has been announced by Eastman Kodak Co. in a paper by Dr. Robert E. Bacon and Ralph S. Colt at the recent annual conference of the Society of Photographic Scientists and Engineers. The system, currently in the experimental stage, is adaptable to both film and photographic paper. After exposure the image is made visible and permanent by first heating the film or paper and then subjecting it to overall light exposure. The material is heated to a temperature of 225 to 245 C for two to four seconds before development. Possible applications for the specially treated film and paper are exposure with laser beams, electronics in a vacuum, electronic flashlamps and cathode-ray tubes with fiber-optic faceplates.

A meter designed to provide faster, more precise measurement of the modulation transfer of color films has been developed at Eastman Kodak Co. and described by Murray C. Goddard before the recent annual conference of the Society of Photographic Scientists and Engineers. The instrument, called an MTF meter, permits rapid measurements of sine-wave patterns on film in a way that minimizes problems encountered in the microdensitometer method, such as misalignment, poor focus and grain noise. The meter also provides for adjustment of illumination and pickup cone angles so that a variety of film applications can be simulated.

The new instrument integrates light from a much larger area of the film than does the conventional microdensitometer and superimposes the image of the sine-wave pattern on alternating opaque bars and transparent spaces. It then measures the average intensity of the light passing through many half-waves of a sine-wave pattern, similar to using many wide slits on a microdensitometer. A bar analyzer moves across the image, and the light passing through is detected by a logarithmic photometer, from which the peak voltage and the maximum voltage charge are recorded. The modulation on the film is then calculated from these measurements on a digital computer.

Red Lake Laboratories, Inc., Santa Clara, Calif., has acquired the Fastax line of high-speed motion-picture cameras and accessories formerly manufactured and marketed by 3M Company, Wollensak Optical Products, Rochester, N.Y. The announcement was made jointly by Donald W. McArthur, Vice-President of 3M Company and Robert D. Shoberg, President of Red Lake Laboratories. Manufacturing facilities and marketing headquarters are being moved to Red Lake's offices at 2971 Corvin Drive, Santa Clara.

F&B/Ceco Industries has announced an agreement to acquire J. G. McAlister, Inc., of Hollywood, manufacturers of lighting equipment, in an all-cash transaction. The name of the company will be changed to Bardwell & McAlister, Inc., the original corporate name. It will be operated as a division of F&B/Ceco Industries. The firm manufactures various types of lighting equipments, including spot lights ranging from the 150-W Inky Dinky to the 10,000-W Big Mac. A newly designed line of quartz lighting equipment which includes a focusing quartz light will be added to the company's products.

In addition, a new division of F&B/Ceco Industries will be created to be known as Bardwell & McAlister Electronics, Inc. The division will produce various items of motion-picture electronic equipment.

Crowell Collier and Macmillan, Inc., has purchased Fleetwood Films, Inc., of Mount Vernon, N.Y. Fleetwood's primary business is the distribution of 16mm educational and entertainment films and short films. In addition to supplying the educational market, the firm also supplies films for home viewing. Through its Audio Film Center/

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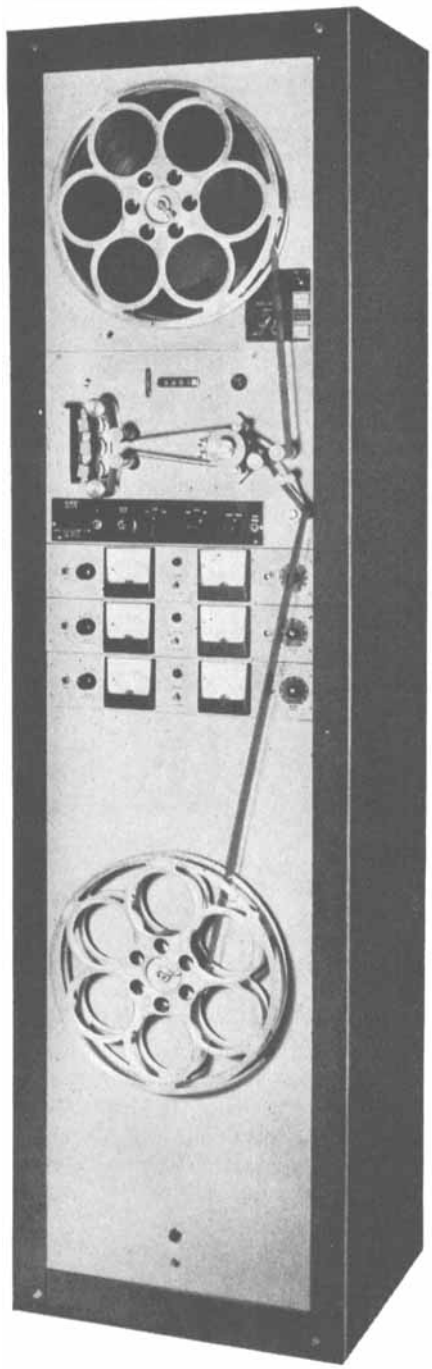

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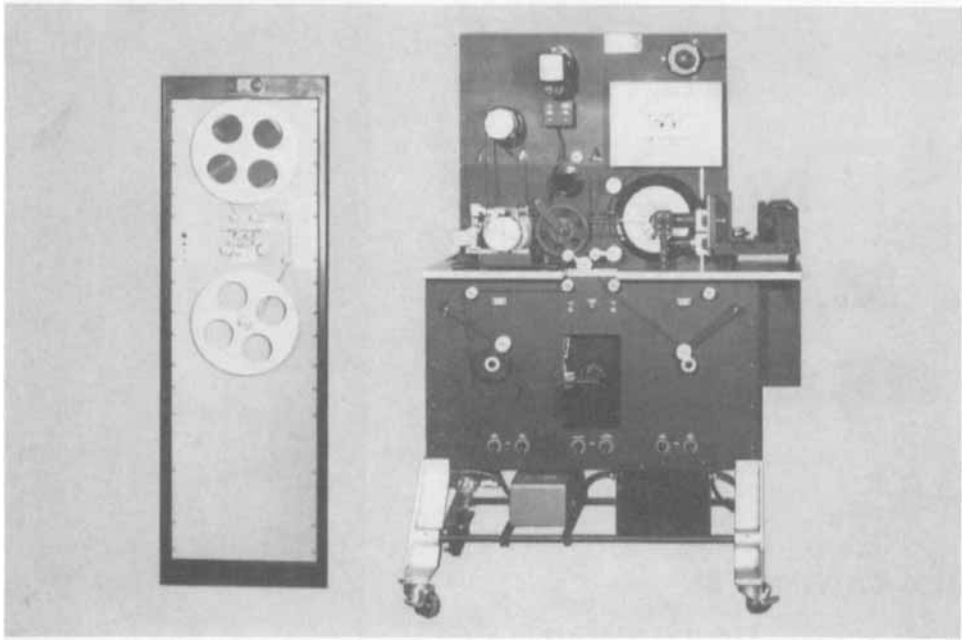

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Ideal Pictures affiliates, it has 19 distribution points throughout the United States. As a CCM subsidiary, Fleetwood Films will continue to operate autonomously. Myron Bresnick, President, will continue in that post and no personnel changes are contemplated.

Criterion Film Laboratories has acquired new motion-picture processing headquarters at 415 W. 55 St., New York, N.Y. 10019. Additional space provides facilities for developing and printing 35mm, 16mm and 8mm films in color or black-and-white.

New techniques for integrated circuit fabrication, being developed and tested at Bell Telephone Laboratories, can provide circuit arrays containing up to 100,000 bipolar transistor logic gates per square inch of silicon. Almost a million electrical components can be made on silicon wafers the size of postage stamps. Each little square, small enough to be visible through a stamp perforation, contains 672 transistors and resistors. Methods are also being tested for connecting the tiny components into arrays of electrical circuits.

The new circuits are fabricated with very thin (about 1 μ) epitaxial layers. (Epitaxial layers are typically 5 to 7 μ thick. The thin epitaxial layers allow a reduction in space between elements. At present, silicon integrated circuits are fabricated by diffusing an n-type silicon collector layer selectively into a p-type layer grown epitaxially. Circuit elements are then isolated by diffusing p+ impurities down through the epitaxial layer to the substrate. The diffusion is isotropic, extending the same distance sideways in the epitaxial layer as down through it. In the thin epitaxial layer the diffusion has less distance to penetrate down through the layer, so it does not spread so far along the surface between devices.

The devices themselves are formed by diffusing additional p-type and n-type layers selectively into the epitaxial layer and are generally surrounded completely by the isolation diffusion. In structures that have been investigated so far, the thin epitaxial layers result in transistors with higher inverse gain. In new circuits, this characteristic can be used for improving switching speed, reducing power dissipation and improving noise margins. The new techniques are applicable to computer logic circuits and memory arrays.

An experimental television-type tube whose images can be held for long periods with the power off and erased in whole or in part with an outside light source has been developed at RCA Laboratories, Princeton, N.J. Called a "cathode-ray storage tube," the unit differs from ordinary picture tubes by having a "photochromic" instead of a phosphor layer on its inside face where pictures or other information are traced by a high-speed electron beam. The photochromic materials in the tube do not emit light like phosphors but change color when struck by an electron beam. For this reason the tube can display and retain data until the normal color returns (about 30 min at room temperature). The materials are sensitive to light frequencies so it is possible to use a light pen to write on them from outside the tube to erase some or all of the data displayed. The tube requires only one electron gun. High resolution is possible because the width of the electron beam doing the writing determines the width of the displayed writing. The tube also has a gray-scale capability and reproduces photographs.

National Showmanship, Inc., 460 W. 54 St., New York, N.Y. 10019, is a new subsidiary of Income Properties, formed for the distribution and co-production of motion pictures and the production of records. Joseph J. Macaluso, President of Income Properties is President of the new corporation. Melvin L. Gold, President of Manhattan Sound Studios, another Income Properties subsidiary, is Executive Vice-President. George Roth, President of Atlantic Pictures Corp. and Clover Films Corp., is Vice-President in charge of World-Wide Sales.

Moviecolor Laboratories, Inc., 2756 S.W. 28th Lane, Miami, Fla. 33133, has announced availability of dubbing services in English or Spanish in the United States and Latin America. The firm has been in existence for 25 years.

Robert Dressler has been appointed President and Chief Executive Officer of Riker Video Industries, Inc., it was announced by S. Marcus Finkle, Chairman of the Board. Mr. Dressler was formerly Director of Advanced Systems at Raytheon Company where he was concerned with advanced development programs. Prior to joining Raytheon he was Executive Vice-President of Autometric Corp. Riker Video Industries consists of Riker Video and Richmond Hill Laboratories, Ltd. (transitorized equipment for the broadcasting industry); Leitch Research and Development; the ITV companies (closed-circuit TV); Ward-Leonard Electric Co.; Semi-Elements, Inc. (chemicals); CPE (educational audio-visual equipment); and Programming Methods, Inc. (computer software).

George Gill, Inc., 2141 N.E. 124 St., North Miami, Fla. 33161, is a new firm of consultants specializing in staging and lighting services and audio-visual presentations. Head of the firm is George Gill, who was formerly with ColorTran Industries. Prior to his association with ColorTran he founded George Gill Associates Production Facilities (1954). His experience in the lighting field includes work on lighting projects at the New York Worlds Fair.

Barton Kreuzer, formerly Division Vice-President and General Manager of Commercial Electronic Systems Div. of Radio Corp. of America, has been elected to the newly created post of Vice-President and General Manager of RCA's Commercial Electronic Systems Div. Other newly elected RCA Vice-Presidents are George A. Fadler, formerly Staff Vice-President, Materials and Facilities, who has been elected Vice-President, Manufacturing Services and Facilities; and Irving K. Kessler, formerly Division Vice-President, Defense Electronic Products who has been elected Vice-President of the Division. Additional responsibilities of Mr. Kreuzer's new position include the Industrial and Automation Systems Dept. and RCA's Medical Electronics activities.

M. Carlos Kennedy has been named Manager, Camera and Systems Engineering, for Ampex Corp.'s Consumer and Educational Products Division. Prior to joining Ampex, he was Chief of Video Engineering for Raytheon Learning Systems Co.

John H. Barwick has been named Director of the newly created Educational Communications Services of Reeves Sound Studios, 304 E. 44 St., New York, N.Y. 10017. He was formerly Editorial Director of the New York Office of Science Research Associates, an IBM subsidiary. The new group will supply various services including transfers from film in color or black-and-white, 16mm or 35mm, to 1-in. or 2-in. tape; transfers from tape to film and transfers from tape to tape.

Marion M. Rimmer has been appointed Northwestern Marketing Manager for Berkey-ColorTran. His headquarters will be at 3813 E. Laurel Lane, Phoenix, Ariz. Prior to his association with Berkey-Color Tran, he represented Arizona Photo-Center in Phoenix.

Rupert F. Goodspeed has been appointed General Sales Manager for Philips Broadcast Equipment Corp., Paramus, N.J. He joined the firm in 1967 as Broadcast Product Manager. In his new post he will head the national sales organization for the company's various product lines including broadcast television, closed-circuit TV, audio and motion-picture projection systems. Before joining Philips Broadcast Equipment Corp., Mr. Goodspeed was with RCA as Rocky Mountain Regional Sales and Engineering Representative. He was formerly employed by Red Skelton as Director of Technical Operations and Studio Manager for Skelton Studios and Research Laboratories.

Alvis A. Ward, former President and Chief Executive Officer of LTV Ling Altec Corp., subsidiary of Ling-Temco-Vought of Dallas, Tex., has been advanced to the post of Chairman. He is succeeded by Lee D. Webster. Mr. Ward has been associated with LTV Ling Altec, Inc., and its predecessors since 1929. He became President of Altec Companies in 1958 and when Ling Altec, Inc., was formed in 1965 he continued as President and Director of the LTV subsidiary.

Melvin L. Gold, President of Manhattan Sound Studios, has been elected to the Board of Directors of Income Properties, Inc. Income Properties, formerly involved in real estate, is currently the parent company of Manhattan Audio Co., Inc. (Manhattan Sound Studios), Cineffects, Inc., Cineffects Color Laboratories and National Showmanship Services. Additional acquisition under the Manhattan Sound Studio aegis was the equipment and leasehold of Murlyn Recording, 17 E. 45 St., New York.

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U.S. Chief Negotiator, W. Averell Harriman, surrounded by newsmen at site of peace talks, Paris. GAMMA-PIX

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Alex Ushakoff, Jr., has been elected President of Center for Communications, Inc., 43 Lovett St., Beverly, Mass. 01915. Thomas E. Wilber has been elected Vice-President and Treasurer. Mr. Ushakoff is presently a professor of Scientific Communication at Boston University and a member of the faculty at North Shore Community College in Beverly, Mass., where he teaches Engineering and Instrumentation. He has been a consultant in educational technology to many organizations, including the United Nations. He has produced films for a number of government agencies and various international firms. Mr. Wilber was formerly Director of Management Communications for Indian Head, Inc., New York.

Center for Communications, Inc., was formed to produce nontheatrical films and other visual communications, emphasizing a systems approach to communications problems in science and technology. The firm is an expansion of Ushakoff enterprises, founded in 1952 by Mr. Ushakoff. The firm will continue to plan and produec motion pictures, technical exhibits, training programs, conferences, seminars and other audio-visual communications including those requiring closed-circuit television.

Frank J. Haney has been appointed General Manager of the Sunnyvale Division of Visual Electronics Corp., 356 W. 40 St., New York, N.Y. He was formerly Manager, Audio/Video Systems at ABC-TV's network engineering department. While with ABC he designed the first long-distance (New York to Washington) remote control of studio equipment using pulse-code-modulation techniques over data telephone lines. Prior to his affiliation with ABC he was project engineer, network engineering staff, at CBS-TV, where he designed studio facilities for the network's overseas stations. In his new post he will have overall responsibility for the development and manufacture of video-tape recorders and related electronic equipment at Visual's newly expanded Sunnyvale, Calif. plant.

Peter C. Goldmark, President and Director of Research of CBS Laboratories, received an honorary Doctor of Science degree from Fairfield University at commencement exercises held June 9. The degree was awarded for "personal achievements and contributions to communications, entertainment, scientific invention and innovation." Dr. Goldmark is a native of Budapest, Hungary. He studied at the Universities of Berlin and Vienna and was granted a Ph.D. degree by the University of Vienna.

books reviewed

Acoustics and Vibrational Physics

By R. W. B. Stephens and A. E. Bate. Published (1966) by St. Martin's Press, 175 Fifth Ave., New York, N.Y. 10010. 818 + xiii pp., including index. Illus. Diagrams. Tables. 6 by 9 in. Price $22.50.

This book, encyclopedic in scope, provides a broad-scale text and reference work on sound and the applications of acoustics. The authors state that the text is intended for the use of both graduate and undergraduate students as well as acoustical, mechanical and communication engineers and technicians.

The first part of the book covers the early history of sound and music, fundamentals of periodic motion and wave propagation. In this part of the text there are many subjects which cannot be found in the conventional book on acoustics.

Mechanical vibrations of strings, torsional vibrations and vibrations of plates, and the reflection, refraction, absorption diffraction, scattering interference and Doppler effect relating to sound waves are considered quite thoroughly.

The section on physiological acoustics is not completely up to date. For example, the artificial larynx described in this book has been replaced by a different type operating on the outside of the throat. Also, some important sources on physiological acoustics are omitted.

In the chapter on wave analysis and synthesis the pertinent aspects are treated in an exceedingly abbreviated manner. Only 19 pages are used to cover the field of sound reproduction, and only two pages are devoted to stereophonic sound. Surely, sound, which is a major channel for the mass dissemination of information, deserves more than this meager treatment. A brief consideration of musical instruments appears in this chapter.

The chapter on acoustical measuring instruments covers also the subjects of microphones and loudspeakers; here, again, the treatment is encyclopedic. The subjects of noise, architectural acoustics, sound absorption, reverberation, anechoic rooms, and testing the quality of rooms are treated in an excellent manner.

The book also includes a chapter on mechanical and acoustical analogies. The treatment of ultrasonics, shock waves and waveguide propagation is quite complete for a textbook of this scope; and the classical treatment of velocity potential and wave propagation is excellent. The subject of nonlinearity in wave phenomena is a fine presentation of this complex subject.

There is an Appendix of 196 pages covering 53 major subjects in encyclopedic mathematical form. Practically all of the elements of acoustics and vibrational physics are included.

This book covers more subjects in the field of acoustics and vibrational physics than any other single book of which the reviewer is aware. The major part of the text is excellent. There are, however, as stated above, omissions in references and some rather meager treatments of some subjects. — *Harry F. Olson*, RCA Laboratories, Princeton, N.J. 08540.

Edit. Note: Dr. Olson is the author of *Music, Physics and Engineering* (Dover Publications, Inc., New York, 1967, 460 pp. illus., paperbound, $2.75). This book is the second edition, revised and enlarged, of *Musical Engineering* (McGraw-Hill Book Co., New York, 1952).

The Reproduction of Colour (2nd Ed.)

By R. W. G. Hunt. Published (1967) by John Wiley and Sons, Inc., 605 Third Ave., New York, N.Y. 10016 500 pp. incl. Appendixes, Index, Illus., Diagrams. 6 by 8½ in. Price $16.00.

Color is a most important subject these days, in all walks of life, and color reproduction is of great importance in such fields as paintings, film projection, television, and magazine printing. The Foreword (by W. D. Wright) to this work notes that "a book on the reproduction of color requires a broad outlook on the part of the author," also that it "demands a very wide and deep understanding of the facts of color mixture and color perception" and that the author "is very well qualified to give a balanced and comprehensive account of the subject." The second edition has been made necessary by the "tremendous advances in the subject."

The book is divided into four parts. The first covers fundamentals of tricolor vision and colorimetry, additive and subtractive methods, light sources, and assessment of the final result. The second part covers color photography by subtractive methods, including quantitative colorimetry, masking methods, color negatives, and the chemistry of color photography. The third part covers color television, including discussions of standard signals and the use of color film. The fourth part covers color printing, including a variety of "automatic" systems. Three appendixes are also included.

The subjects are generally well covered, with full references to the literature for more complete discussions. The work is up to date enough to include information on the new CIE standard illuminants D_{5500} to D_{7500}.

The reader will be dismayed to find that the elaborate multiple-variable colorimetric equations, when used for film (for example), cover principally the securing of objective exactness in the positive film itself, rather than in the projected image as seen and interpreted by the viewer. This is, of course, far short of what is necessary in the art, and it is a current thorny problem in color television. The projection lamp and color adaptation effects on the part of the viewer are largely dealt with in only roughly qualitative fashion; the Foreword notes: "However much we may regret that the requirements of a color reproduction cannot be expressed in precise colorimetric terms, we have to recognize that engineering concepts alone are not enough." Thus the