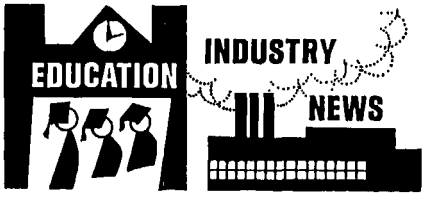
nized college or university with the objective of an advanced degree beyond the baccalaureate are eligible. Undergraduates in their senior year who plan to continue their studies may also apply.

Fields of Study: Applicants should have as a major concern interests related to the technologies of the motion-picture industry including, but not limited to, camera, sound and laboratory. This would include the sciences and engineering aspects of optics, acoustics, electronics and chemistry.

Amounts of Grants: A total of $10,000 will be made available for the academic year 1971–72 for this program. Applicants may apply for any amount up to $5,000. The funds may be granted as scholarships for tuition, fees and/or living expenses of the winners. The funds may also be awarded as "grants-in-aid" to assist in funding graduate research.

Method of Applying: Application must be made on a form available from Society Headquarters. In addition to academic and vocational background, it calls for clear statements of personal interests and objectives of the applicant. It asks for personal and professional references and for a budget showing how the funds will be used. It also calls for the endorsement of the institution the student plans to attend as to his admissibility and its willingness to disburse the funds, if awarded.

Deadlines: Announcement of Scholarships, Feb. 1, 1971; Submission of Applications, Apr. 1, 1971, and Announcement of Winners, Apr. 26, 1971.



A special summer program in cinema is being offered jointly by the University of Southern California's Division of Cinema and Universal Studios. It will be held June 27–Aug. 7, for seniors and graduate students who are not film majors. Students will spend two days a week at the studios and the rest of the time on the university campus to earn eight units of graduate credit. The program is in three parts: A Seminar in Motion Picture Business, conducted at Universal; a Film Workshop wherein each student will make two films and be graded on them; and a course on the History of Motion Pictures. The students must take all three courses to qualify for credit. Further information is available from Director, Universal-USC Course, Div. of Cinema, University of Southern California, University Park, Los Angeles, CA 90007.

The Society of Photographic Scientists and Engineers has announced three tutorial seminars, a symposium and a conference to be held during 1971. A tutorial seminar on Computer Graphics will be held Feb. 25–26 at Cabana Hyatt House, Palo Alto, Calif. On March 18–19 a tutorial seminar on Technologies in the Laboratory Handling of Motion Picture and Other Long Films will be held at the Sheraton Inn at LaGuardia Airport in New York. The SPSE annual conference on Photographic Science and Engineering will be held jointly with Photo-Expo '71 April 18–23 in Chicago. A tutorial seminar on Photographic Information Systems will be held May 12–14 at the Marriott Motor Hotel, Newton, Mass. The third symposium on Unconventional Photographic Systems will be held Oct. 20–23 at Mariott Twin Bridges, Washington, D.C. Further information is available from Raymond A. Eynard, Public Relations Chairman, SPSE, P.O. Box 2001, Teterboro, NJ 07608.

The Illuminating Engineering Society, through its Theatre, Television and Film Lighting Committee, will sponsor a World Colloquium to be held May 23–27 at the Hotel Roosevelt in New York. The colloquium will provide a forum for an international exchange of views. The keynote will be *The Future* and the theme will be *Lighting 2000.* The program will include presentation of papers and technical demonstrations. Considerable emphasis will be placed on round table and open discussions. There will also be technical discussions on such subjects as colorimetry, light sources and product needs and development. Discussions will be held on subjects of international concern including Training, Automation, Relationship of Lighting Design and Techniques to Architecture, and Impact of New Techniques (such as cable TV and cassettes) on Industry and Jobs. Papers Co-Chairmen are Peter Otto, ABC-TV, 1330 Ave. of the Americas, New York, NY 10019; and Charles J. Neenan, L. K. Comstock & Co., 155 E. 44 St., New York, NY 10017. Further information is available from Philip Rose, Publicity Chairman, 6334 Viscount Rd., Malton, Ont., Can.

The Third Conference on Photographic Science and Technology sponsored by Hindustan Photo Films Manufacturing Co. will be held Apr. 15–16 at Indu Nagar, Ootacamund-5, India. The main objectives of the conference are (1) to afford an opportunity to scientists, engineers and technologists who are engaged in work in the photographic field to meet and discuss common problems; (2) to stimulate interest in the study of current problems in photographic science; (3) to encourage interest in the study of particular problems relating to the photographic industry; and (4) to discuss problems regarding import substitution. Papers dealing with various aspects of photographic science and technology, including photographic theory, silver halide chemistry, color photography, photographic optics, manufacture of photographic equipments and other topics will be presented. There will be two technical sessions on April 15 and one technical session on April 16, after which there will be a visit to the factory of Hindustan Photo Films Manufacturing Co. Further information is available from Dr. S. K. Jain, Secretary, Conference on Photographic Science and Technology, Hindustan Photo Films Manufacturing Co., Indu Nagar, Ootacamund-5, India.

Interkamera 71 will be held Mar. 29–Apr. 6 in Prague, Czechoslovakia, under the auspices of the Centre for International Cooperation in the Field of Audio-Visual Engineering and Artistic Creation, Praha 1, Konviktska 5, Czechoslovakia. In addition to exhibits of equipments and techniques, an international exhibit of publications will be held. Conferences will be held in High-Speed Photography, Independent Testing Techniques, The Technique of Infrared Radiation, and Applied Optics and Microscopy. A conference of editors and publishers of audio-visual periodicals will also be held. Prizes will be awarded for technical advances in the audio-visual field during 1970. Highlights of Interkamera also include a showing of amateur films and photographic exhibits from the United States, U.S.S.R., Italy, Japan, Germany, Great Britain and Czechoslovakia.

The IEEE International Convention and Exposition will be held March 22–25 at the New York Hilton Hotel and the Coliseum sponsored by the Institute of Electrical and Electronics Engineers, Inc., 345 E. 47 St., New York, NY 10017. A 30-member committee has planned a diversified 80-session program with 56 technical and socio-technological sessions scheduled for the New York Hilton. A series of socio-technological sessions will cover such topics as: The Interaction of Technology and Society; Computer Art and Music; Design Objectives for Transportation Systems; The Role of the Engineer in the 70's; Medical Electronics; and Urban Systems and Privacy. Other sessions will cover Semiconductor Memories, Communications, Displays and CATV.

The Eleventh Symposium on Electron, Ion and Laser Beam Technology will be held May 12–14 at the University of Colorado, Boulder, CO 80302. The symposium is one of a series of biennial meetings covering the engineering basis underlying the practical application of energy beams. Major topic areas will be information storage, ion beam technology, interaction mechanisms, fabrication systems, neutral particle systems, high energy beams, microfabrication and beam theory. Dr. Frank S. Barnes, Chairman of the Department of Electrical Engineering, University of Colorado, is Chairman of the Symposium. Further information is available from the Bureau of Conferences and Institutes, 130 Academy Bldg., University of Colorado, Boulder, CO 80302.

Cinema Institute provides a four-week comprehensive course in film and television production using the facilities of a professional motion-picture studio. The course, which began January 3 and will extend through January 29, will be repeated in the summer, June 6–July 2. The program consists of classroom presentations, which will be devoted to lectures, demonstrations and workshops, and film production. Small groups of students will

work with experienced filmmakers in the studios, on location, in the editing room, preview theater and dubbing theater to produce their own films from concept to answer print in four weeks. Evening programs will include screenings of significant films from major studios and non-theatrical sources and will include discussions with guest directors, producers, writers and critics. Further information is available from the Resident Director, Dr. Melvin E. Lorentzen, Cinema Institute, Chester Springs, PA 19425.

Moviclab, Inc., 619 W. 54 St., New York, NY 10019, has instituted a major restructuring program for its East and West Coast laboratories, it was announced by President Saul Jeffee. In New York, a special developing machine for Eastman Kodak Ektachrome 7252 and the Ektachrome print film 7389 has been installed. A new super-8 facility has been completed and placed under the direction of Edgar Schuller and the TV and commercial spot laboratory has been relocated at the home office headquarters to operate as a separate "lab within a lab" with its own plant, equipment and shipping facilities. More space has been taken over at the New York headquarters to expand facilities for editing, screening and storage. At Moviclab-Hollywood, Mr. Jeffee said that the emphasis will be placed on an acceleration of the front end work and the continuance of the recently expanded 16mm facilities for TV, industrial and educational film. John J. Kowalak, Executive Vice-President in charge of Engineering and Overall Plant Operations, and Peter Cardasis, Vice-President in charge of Production, will be temporarily headquartered on the West Coast.

Mr. Jeffee also announced plans to establish a full service super-16 installation at the company's home office building in New York.

The Oxberry Division of Berkey Photo Inc., 842 Broadway, New York, NY 10003, has been purchased by Richmark Camera Service, 516 Timpson Pl., Bronx, NY 10455, it was announced jointly by the two firms. The Oxberry Division resulted from the 1965 purchase by Berkey Photo of Oxberry Corp. Many of the techniques used in making animated cartoons and TV commercials were developed by John Oxberry, founder of the company, who will become associated with the Richmark enterprise. Richmark will manufacture and sell Oxberry products.

Calvin Cinequip, Inc., 1909 Buttonwood St., Philadelphia, PA 19130, (CCI of Philadelphia) has completed the largest soundstage in Philadelphia. Completely soundproofed and air-conditioned, the stage is 60 ft long, 60 ft wide and 20 ft high. There are two dressing rooms, overhead catwalk for lighting, a 35- by 20- by 12-ft cyclorama, Mole-Richardson sound boom and a Raby and Camera Mart dolly. Numerous adjoining facilities are available for sound transfers, editing services and laboratory services. Professional motion-picture rental equipment is available from CCI of Philadelphia, which is located in the same building and adjacent to the stage. The studio will be rented to film producers.

Angenieux Service Corp. of California, 13381 Beach Ave., Venice, CA 90291, has been created to support the service requirements of the West Coast motion-picture and television industries, it was announced by John Wallace, General Manager of Angenieux Corp. of America, 440 Merrick Rd., Oceanside, NY 11572. The new service corporation has complete service facilities including factory test equipment, factory-trained technicians and parts inventories to cover all Angenieux motion-picture and television lenses, Mr. Wallace said.

A system that uses air to move the audience sections on a TV show has been designed by Gene McAvoy, art director for the NBC Andy Williams Show, and Rolair Systems, Inc., Santa Barbara, Calif. The system is used to move two bleacher sections, each weighing about 50,000 lb when occupied, during taping of the show. The two audience sections are located in the center of the studio. When facing, the sections look out onto the center stage where solo numbers are performed. A 30-piece permanent orchestra section is at one end of the studio and a huge production stage is at the other end. During taping, the audience sections are rotated toward any one of the three performing stages. The 25-ton audience sections are moved by means of Rolair air bearings permanently located under the bleachers. Eighteen air bearings are used for each section. Three air tanks are attached to the rear of the bleachers. As the show moves from one stage to another, stagehands open the air valves on the tanks. The air film system is activated and the bleachers float to the new position. The audience sections, anchored in the center, rotate around this point.

Jack Pill & Associates and Tech Camera Rentals have opened a branch in Honolulu to serve sales and rental requirements of professional motion-picture producers in Hawaii. Bud Weisbrod, President of Pacific Instrumentation Co., will manage the Hawaiian operation.

RCA Corp. and Viewlex, Inc., have announced an agreement whereby Viewlex will acquire the RCA 16mm motion-picture product line designed primarily for educational and training use. Included are projectors presently in inventory, patents, engineering designs, manufacturing drawings, test equipment, tooling and a quantity of projectors to be manufactured for Viewlex by RCA. The agreement does not include other projector products and no RCA plant facilities are involved. Following delivery of the units still to be produced by RCA, Viewlex will commence manufacturing the projectors in Holbrook, N.Y., where an additional 140,000 ft^2 of plant space is under construction.

Frank Lewin, composer, musical director and sound specialist, was the recipient of an alumni award at the annual convocation of the Yale University School of Music which was held in October. The day's events included a public discussion on updating musical education in which he served as a panelist. Mr. Lewin's TV credits include music for *The Defenders and* the CBS Children's Hour production, *J.T.,* which won a Peabody Award. He has written numerous scores for feature and documentary films as well as music for theatrical productions and exhibits. He is the composer of *Music for the White House,* which he conducted at the White House, and the *"Requiem for Robert F. Kennedy,* first performed last year in the chapel of Princeton University. He is at present working on a multi-media outdoor musical drama to be presented at Washington Crossing (N.J.) State Park as part of the 1976 Bicentennial celebrations. He is a member of Demeter Music, Inc., 128 E. 41 St., New York, NY 10017.

Dennis Gabor, CBS Laboratories staff scientist who is internationally renowned for the discovery of holography, has been selected by the American-Hungarian Medical Assn. of New York, to receive the Semmelweis Medal for outstanding contributions to humanity. The Medal is presented annually to renowned scientists of Hungarian origin. Dr. Gabor is known throughout the world as the "father of holography" having worked out the mathematical basis for its beginning some 20 years ago when, as a professor at the Imperial College of London, England, he discovered how to reconstruct objects from their lightwave interference patterns. Dr. Gabor has also been responsible for numerous mathematical contributions to the advancement of communications and color television.

Herman Schkolnick has been appointed Product Manager, Commercial Video Systems, Audio-Video Systems Div., Philips Broadcast Equipment Corp., One Philips Parkway, Montvale, NJ 07645, it was announced by James L. Wilson, Vice-President and General Manager of the division. Mr. Schkolnick was formerly with Riker Information Systems, Inc., and, earlier, he was with Fairchild Camera and Instrument Corp. in Paramus, NJ. In his new post he will be responsible for video systems in the cable TV, educational, industrial and institutional fields.

R. Terry Hoffmann has been appointed to the newly created post of Assistant to the President of TeleMation, Inc., 2275 South West Temple, Salt Lake City, UT 84115, it was announced by Lyle O. Keys, President of TeleMation. Mr. Hoffmann's primary responsibilities will be in contract negotiations, administering departmental budgets, intra-corporate and control systems. The appointment is expected to enable Mr. Keys to concentrate his efforts on long-range planning, mergers and acquisitions and policy matters.

J. R. Paus has been appointed General Manager of Research and Engineering for the Carbon Products Div. of Union Carbide Corp., 270 Park Ave., New York, NY 10017. He succeeds Robert P. Stambaugh who has been appointed Director of Personnel Management. Mr. Paus has been with the Carbon Products Div. since 1948.

Kenneth K. Kaylor has been appointed Director of Sales, Audio-Visual Systems Div., Philips Broadcast Equipment Corp., One

Philips Parkway, Montvale, NJ 07645. Mr. Kaylor had been Western Regional Sales Manager in the company's North Hollywood facility since joining the company in 1967. He had previously been a technical director for CBS in Hollywood and had held managerial marketing posts with Fairchild Camera and Instrument Co. In his new post he will be responsible for sales and service operations in Montvale, Atlanta, Houston, Chicago and Hollywood.

Neil R. Vander Dussen has been appointed Manager, Studio Equipment Engineering and Product Management in the RCA Broadcast Systems Div., Camden, N.J. He joined RCA in 1957 and recently spent a year at the Massachusetts Institute of Technology as an Alfred P. Sloan Fellow where he received the degree of Master of Science in Management. In his new post he will have overall product responsibility for TV cameras, tape recording systems, switching and control apparatus and related studio equipment used by broadcast stations and networks.

Charles Standiford has been appointed Field Sales Manager for Altec Lansing Div. of Ling Altec, Inc., 1515 S. Manchester Ave., Anaheim, CA 92803. He has been with Altec for two years and was formerly Regional Sales Manager with headquarters in Lansing, Mich.

W. H. Collins has been appointed Division Manager of the newly created Electronic Display Div. of Panelgraphic Corp., West Caldwell, N.J. He was formerly General Manager of Operations for Johanson Mfg. Corp. In his new post he will have responsibility for the operation of the division which is devoted to the design and production of illuminated control and display panel systems.

Arthur J. Kjontvedt has been appointed Director of Marketing for CinTel Corp. of Los Angeles, a subsidiary of Technology Inc., 1108 Talbott Tower, Dayton, OH 45402. Before joining CinTel, Mr. Kjontvedt held executive marketing positions with Fairchild Hiller and Itek Corp. In his new post he will be responsible for all of CinTel's marketing activities both domestic and foreign.

Jerry S. Kennedy has been appointed Northeast Region Sales Manager for the Video Products Div. of Ampex Corp. He has been with Ampex since 1968. Previously he was an engineer with NASA in Cape Kennedy. In his new post he will be responsible for sales of Ampex equipments, including videotape recorders, TV cameras, transmitters and antennas and related equipments in western Pennsylvania, Delaware, Maryland and Washington, DC.

Richard Lebre has been appointed Vice-President in charge of sales for Movielab-Hollywood, Inc., it was announced by John Kowalak, Executive Vice-President of Movielab, Inc., 619 W. 54, New York, NY 10019. Mr. Lebre was formerly with Pathe Laboratories.

Kenneth Goldberg has been appointed Data Processing Manager for Movielab, Inc., 619 54 St., New York, NY 10019. In his new post he will have responsibility for the planning, direction and control of the overall operation of Movielab's recently installed computer facilities.

books reviewed

Wave Generation and Shaping (2d Ed.)

By Leonard Strauss. Published (1970) by McGraw-Hill Book Co., 330 W. 42 St., New York, NY 10036. 775 + xii pp. Diagrams. 6½ by 9 in. Price $16.50.

The first edition of this work was published in 1960. Since that time there has been a complete revolution in the art. Solid-state components have been developed in a considerable number of forms and have progressed from discrete component types to the much more compact and economical integrated circuits. Since energy-storage elements are more difficult to integrate, a marked trend in design has been to use these less and less, and the transistors more and more — to the point where a new text is really necessary.

The work is primarily intended for a senior or graduate course of one or two semesters. Because of the newer viewpoint, some fundamental review and introductory material (for example, basic solid-state conduction and integrated circuit construction) is inserted where appropriate.

The use of signals of carefully shaped waveforms is important in a variety of aspects of current technology. Many arts use control and triggering pulses, timing signals, sawtooth linear time bases and scaling line sweeps, sinusoidal waves, etc. A complicated wave in very extensive and important use is of course the synchronizing signal in broadcast television, although, surprisingly, the generation of this is hardly mentioned and does not appear in the index.

Actually, the scope of the work extends a great deal beyond what the title suggests. It does treat of the exact formation of waves, with special regard to extreme speeds of operation, and thus includes delay and rise and fall times, together with waveshapes during such periods. The treatment is a simplified mathematical one, where approximations are used to clarify the concepts and shorten the work. Where a complicated wave consists of several parts, these are considered separately and the results superposed later, with the technique permitting in most cases the use of linear approximations. But beyond this the book goes into the use of diodes in waveshaping, clamping transistor analysis, digital logic and gating, the field effect transistors, sweep circuits, switching (with an extensive study of multivibrators and negative-resistance circuits), blocking oscillators, memory devices and, finally, oscillators.

The work can be used as a handbook for much of the solid-state art. Although the language is intended to be simple, for the student, reading the book and understanding it require close concentration, because a great deal of material is condensed into a small space. However, numerous problems are presented to clarify the concepts in the text, and the illustrations are extensive and of high quality.—*Pierre Mertz*, Consultant, 66 Leamington St., Lido, Long Beach, NY 11561.

The Handbook of Modern Halftone Photography (3rd ed.)

By Fred Noemer. Published (1969) by Perfect-Graphic-Arts Supply Co., P.O. Box 62, Demarest, NJ 07627. 150 pp. Illus. Price $11.80.

The third edition of this book has been revised and updated by the author. The book is arranged in sections covering various techniques for all screening requirements. Subjects covered include the making of tone value corrected negatives and positives; lith gradation and formaldehyde developers; characteristics of glass screens; special use of contact screens; modern sensitometry and a number of other related subjects.

The author has had a wide experience in the field of graphic arts. At present he is Graphic Arts Technical Manager for Agfa Gevaert and he is a teacher at the New York School of Printing. The earlier editions of this book have been used as textbooks in various graphic arts institutes. — *Edit.*