

The Armed Forces Audio-Visual Communications Conference held its second annual meeting November 3-7 in Washington, D.C. The lectures, panel discussions, seminars and papers were presented under the auspices of seven technical committees: Television, Instrumentation, Still Photo and Display, Motion-Picture and Film Exhibition, Research and Development and Innovation, Resources/Management/Careers, and Film Distribution and Utilization.

The keynote address, "Generation of Images," was delivered by Robert Wagner. The address was preceded by the welcoming remarks given by Stanley R. Resor, Secretary of the Army. Dr. Wagner is Director of the Motion Pictures Division of the Ohio State University College of Engineering.

Other lectures given at general sessions included "Motion Pictures; Yesterday, Today and Tomorrow" given by Harold Mohr, President of the American Society of Cinematographers, and "USIA and the Audio-Visual Media" given by Henry Loomis, Deputy Director of the United States Information Agency. Col. William A. Gallogly, USAF, Director, Office of Audio-

Visual Activities, Office of the Assistant Secretary of Defense for Administration, also spoke before the general session on the first day of the conference.

More than 60 papers were presented at the technical sessions, which were held concurrently. Representative papers, selected at random from the entire program include: "Pollution Abatement From Photographic Solutions" by Lloyd West; "Stable Images From Moving Platforms" by J. N. Leavitt; "Wireless Sync-Sound for Motion Pictures" by Victor James; "Multi-Million Frames per Second and Sub-Microsecond Exposures for the Study of Ultra-Rapid Events" by Morton Sultanoff; "Electro-Luminescent Diodes for Recording Timing and Other Data on Film" by Leroy Dearing; "Near Real Time Processing Techniques Using Dry Silver Process" by George Chutka; "Ultra-High-Speed Photographic Digital Recording Devices" by Andrew E. Trollo; "Super 8 Equipment and Processing" by Edward A. Winkler; "Rand Corporation Audio-Visual Television Media Research" by Rudy Bretz; "Recent Developments in Cinetheodolites" by George Economou; and "Optical Instruments at Yuma Proving Ground, Arizona" by James Wymer. An illustrated lecture on "Moon Photography" was given by Richard Underwood of NASA.

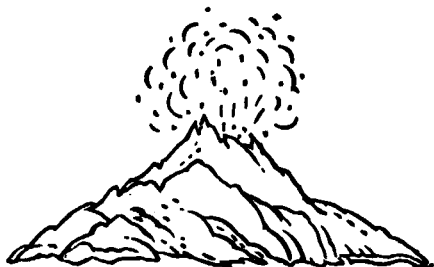
Subjects of panel discussions included "Future Use of Mobile Television Systems Within the Military"; "Laser Beam Technology"; "Color TV Large-Screen Projection"; "Satellite TV Signal Distribution"; "Problems of Location Motion-Picture

Shooting"; and "State of the Art of Low Light Level TV Systems."

The National Association of Educational Broadcasters has launched a nine-month study to explore the potentials of electronic video recording (EVR). The project is funded with a \$40,000 grant from the National Home Library Foundation and is being coordinated by George Hall, Associate Director of the NAEB Office of Research and Development. The study is being undertaken in cooperation with CBS Laboratories where the system was developed under the direction of Dr. Peter C. Goldmark. General objectives of the study are: an analyses of legal and technical constraints including cost factors; an examination of instructional processes and their relationships to the EVR system; an evaluation of EVR in social or mass communications processes outside formal education and a study of existing plans and expectations for EVR use.

Engineering Index, Inc., 345 E. 47th St., New York, NY 10017, has announced 1970 subscription rates for EI publications: *Engineering Index Monthly* (12 issues, 5,500 abstracts each, subject-, author- and cross-indexed), \$400 per year; 1969 *Engineering Index Annual* (two-volume set, 60,000 abstracts, to be published in the spring of 1970), \$200 per set. A combination subscription of the 1970 Monthly and 1969 Annual is available at \$500.

The EI Card Service has been redesigned, updated and reorganized into



# Special Effects in Motion Pictures

(Some Methods for Producing Mechanical Special Effects)

Frank P. Clark

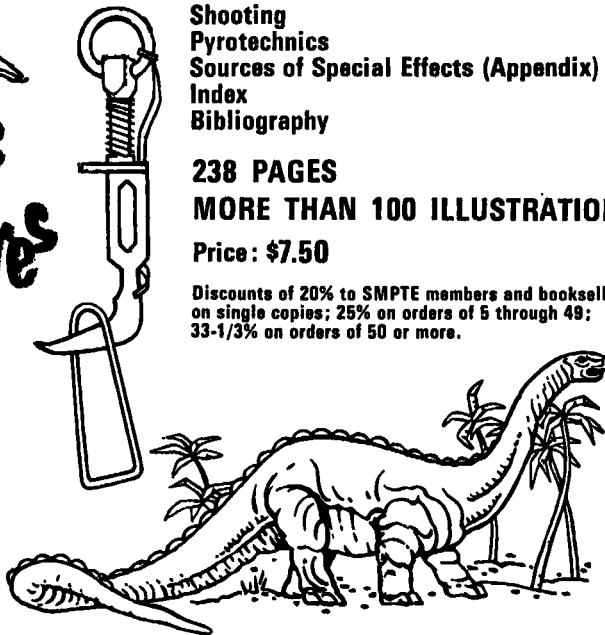
**CONTENTS: The Development of Special Effects**  
**The Application of Special Effects**  
 Atmospheric Effects  
 Special-Effects Props  
 Optical Effects  
 Sound Effects  
 Miscellaneous Effects  
 Shooting  
 Pyrotechnics  
 Sources of Special Effects (Appendix)  
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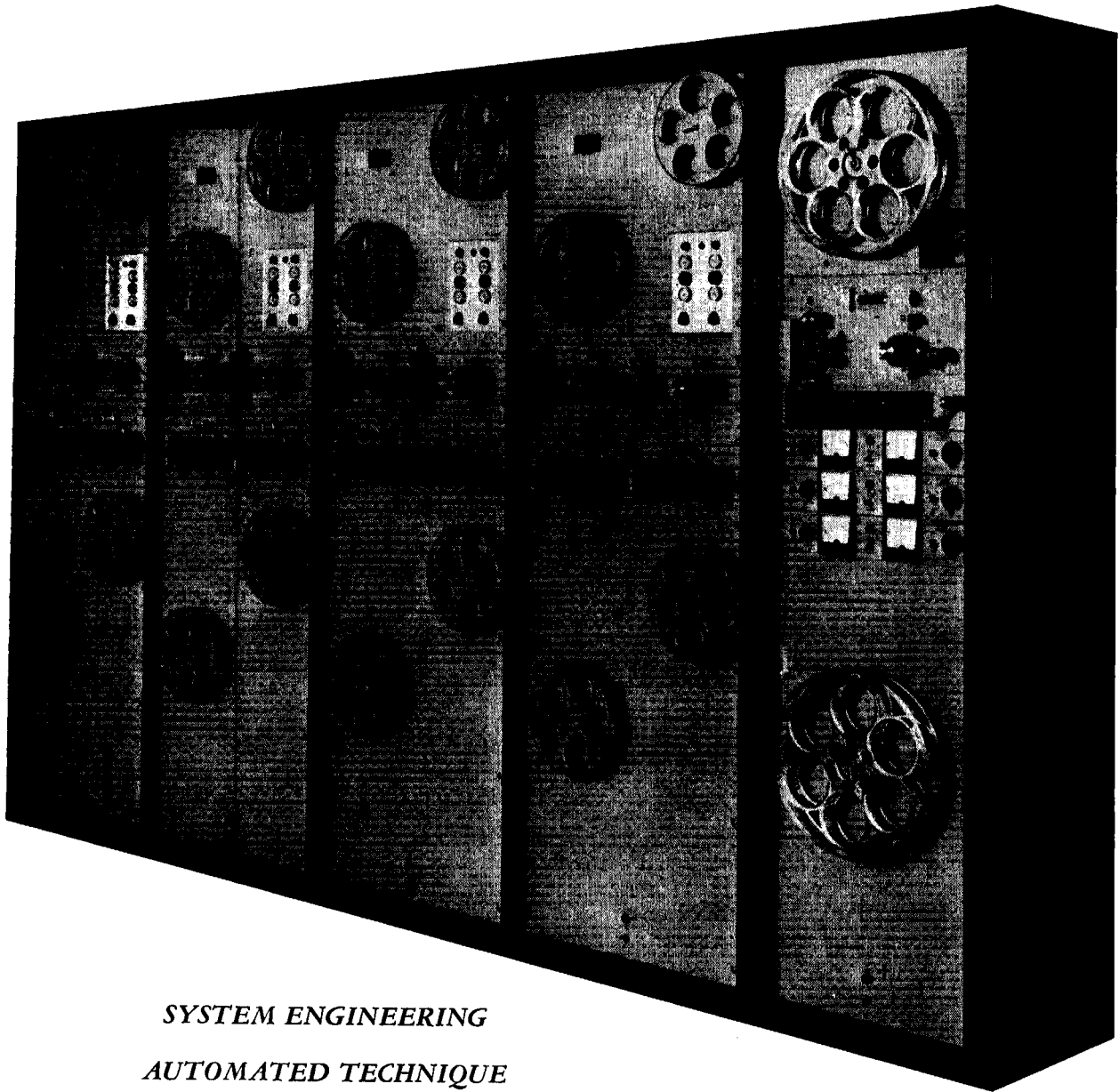
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six disciplines, 38 groups and 167 divisions and has been renamed Card-A-Lert. The complete service (all divisions) is available at a rate of \$1,500 a year. Subscriptions are also available for selected divisions.

**The Auditoria Instructional Data System (AIDS)** for student response teaching in an auditorium has been introduced by Raytheon Learning Systems Co., U.S. Route 12 East, Michigan City, IN 46360. The system is designed for active participation by up to 210 students and provides for both conventional and multi-media teaching methods. It can provide a punched paper tape data output for computer processing or a hard copy printout from a Friden Flexwriter, teletypewriter or equivalent equipment and is comprised of scanner and distribution electronics assemblies, power supply, lectern with master control panel, paper punch, and five-choice responders.

Students view either motion-picture or slide presentations and, with the built-in responders at their desks, answer related questions flashed on the screen. Each responder is checked in sequence by the scanner and the results are recorded on the perforated tape by the paper punch. Scanning time for 210 students is about six seconds. Conventional lecture material can also be given with students responding to "live" questions in the same manner.

In operation all functions are controlled by the instructor from the lectern. The control panel contains five meters which

correspond to the five answer choices; thumbwheel switches to record course, date, question number, etc.; correct answer button to register the correct response for reference; two-position power switch; and pushbuttons to control the projector complement.

A series of workshops for TV station personnel is being sponsored by Eastman Kodak Co. First in the series was held in October in Kodak's Atlanta Education center. The workshop series, called Basic Newsfilm Workshop, is designed for beginning cameramen and is planned especially to meet a growing demand for TV newsfilm cameramen. In addition to studying applying the techniques of filming news under all forms of available light, from bright sunshine to night-time conditions, students will be given training in the filming of mini-documentaries. Further information is available from Motion Picture and Education Markets Div., Eastman Kodak Co., Rochester, NY 14650.

Calvin Communications, Inc., 1105 Truman Rd., Kansas City, MO 64106, has announced the 24th Annual Motion-Picture Workshop to be held February 2-4 on the Calvin soundstage and throughout the firm's facilities. The Workshop program will review basic procedures in all phases of motion-picture production and will examine many of the newer aspects and developments within the industry. Included will be film examples, discussions, displays,

staff and guest speakers and special presentations related to filmmaking. There is no charge for the Workshop but attendance is limited to 800 on a first-come-first-served basis.

Production '70, a workshop conducted by Reeves/Actron, 565 Fifth Ave., New York, NY 10017, was held in October. The workshop consisted of two sessions: the first, held October 22-23 was for educators and industrial users and the second, held October 29-30, was for those involved in the production of commercials and programs. Attendance at each session was limited to 100. The first session included a state-of-the-art presentation intended to familiarize industrial and educational users with the latest innovations in 1/2-, 1- and 2-in helical scan video tape. The second session included studio demonstrations and a state-of-the-art presentation which included practical applications of recent electronic innovations. Production '70 is the second in a planned series of annual workshops.

A one-day workshop intended for persons whose jobs require familiarity with closed-circuit television but who have no training in the medium was conducted on October 14 and November 18 by Reeves/Actron, 565 Fifth Ave., New York, NY. The program included orientation in studio equipment and personnel, operation of equipment, instruction in pre-planning and organization of program materials, production of a five-minute television show with a student performing studio and control room roles, and a group television production.

The Videotape Production Association is a new organization formed by representatives of 24 video-tape companies to promote and further the use of video tape as a medium of communication. Charter members are Advertel, Ampex Corp., Centrex Productions, DiCaprio Productions, Eastern Video Productions, Editel, Filmways, Glen Warren Productions, International Video Corp., Jefferson Productions, Lewron, Logos Teleproductions, Motion Associates East Inc., Motion Picture Camera Supply, MPO Videotronics, N.B.E. Productions Ltd., Reeves Production Services, Rosner TV Systems, Tele-Tape Productions, Technicolor, Teletronics International, Transmedia International, WCD Productions and Western Video Industries. Full membership in the association is limited to video-tape production companies who have produced at least 10 video-tape productions and suppliers of video-tape manpower and video-tape facilities. Association membership will be open to firms engaged in manufacturing, distributing or supplying video-tape equipment whose gross video-tape volume is estimated at more than \$2 million a year. President of the new association is Morton Dubin, Vice-President of MPO Videotronics.

Six TV antennas, weighing about 150 tons, have been installed on top of the 100-story John Hancock Center in Chicago. The antennas, designed and supplied by RCA Corp., are placed on top of two 100-ft

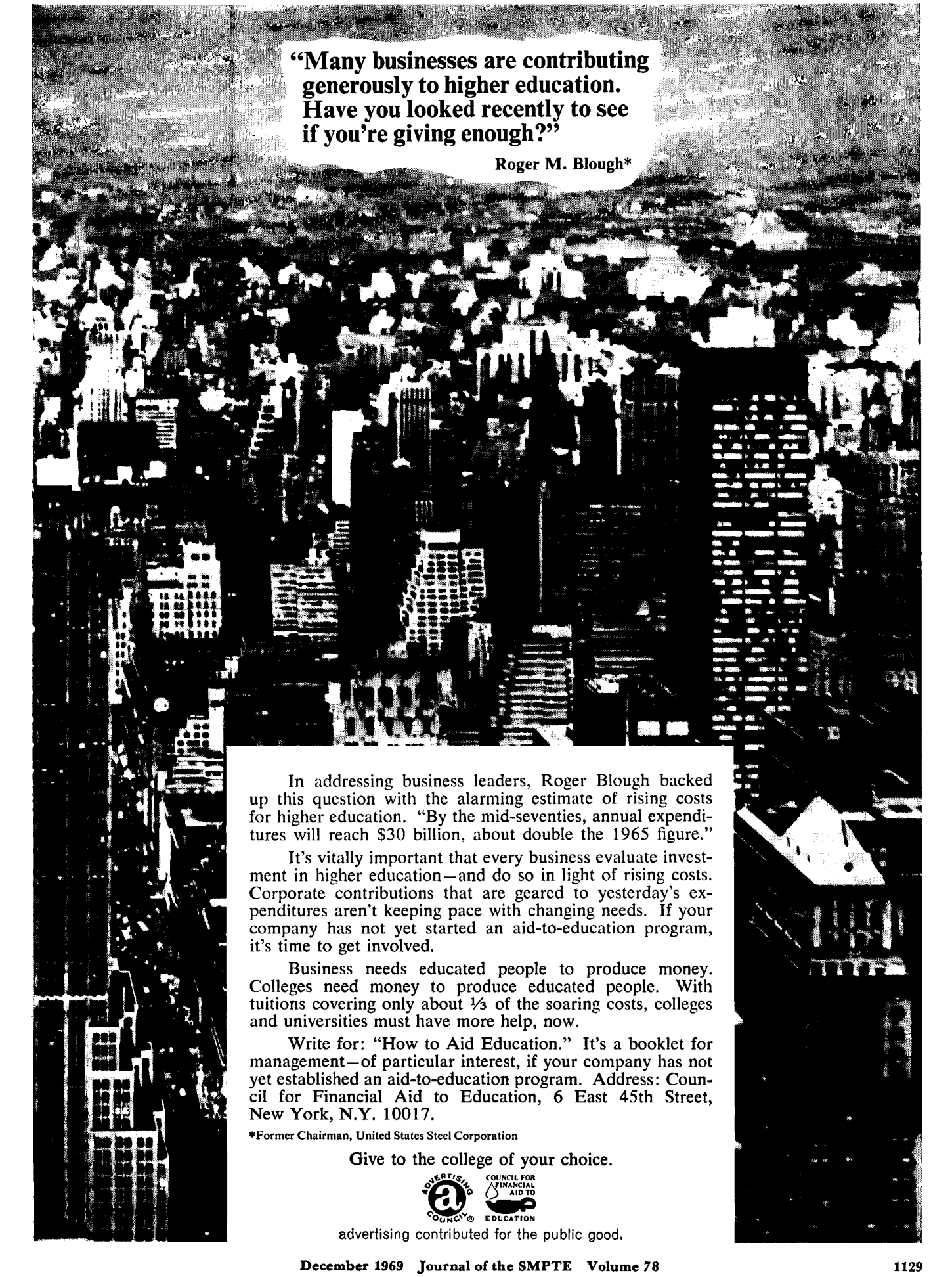
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cylinders on the roof of the building. Four TV stations have switched to the new site and two others plan to begin broadcasting during the year. TV transmitters are installed inside the Hancock Center near the roof. Transmission lines connecting them to the antennas run up through the twin towers. Designers of the antennas worked with new mathematical model techniques and used computers to design the special radiation patterns that the transmitting antennas emit and to avoid any electrical interaction among them. The studies also took into account Chicago's windy weather and the design provides enough rigidity to keep the sway of the topmost antenna on each tower to less than 0.5° in a 50 mi/h wind.

Westinghouse Electric Corp. is the recipient of the Manned Spacecraft Center Award of Appreciation for the television cameras used on the last three Apollo missions. The camera used by Neil Armstrong during the Apollo 11 mission to telecast to earth the first pictures of man on the moon was built by Westinghouse. The color camera was based on the field-sequential system developed by Peter C. Goldmark, President of CBS Laboratories, some 28 years ago. Westinghouse also built the color cameras used on Apollo 9 and Apollo 10.

Alan Gordon Enterprises (AGE) Inc. is the first firm in the United States to make available new cinema products being marketed for the first time by Samuelson Film

Services Ltd. of London, it was announced by Grant Loucks, AGE Inc. Senior Vice-President. The products, introduced by David Samuelson at the Society's 106th Conference at Los Angeles, include the KingKlapper, an electronic audio and visual clap board; the Dawe Cinestrobe, which provides short-duration light in synchronization with a camera shutter; the Samcine Limpet Camera mount, which can be attached to any smooth, nonporous surface and Acrylic Window Filter Sheets, which are 1/8-in thick, 5- by 8-ft plastic filters designed to convert window light to tungsten. This is the first time these products have been made available for sale, previously they were available only on a rental basis. AGE headquarters are at 1430 N. Cahuenga Blvd., Hollywood, CA 90028.

Zoomar, Inc., 55 Sea Cliff Ave., Glen Cove, NY 11542, has announced a lease-purchase plan for the Modulation Transfer Function Meter. Under the new plan, the instrument can be acquired on a rental basis with the rental payments credited toward later purchase if desired. The instrument was developed by Zoomar to provide rapid, in-plant evaluation of camera lenses. It provides automatic print-out of lens characteristics for quality control records, procurement evaluation and for documentation of compliance with military and other specifications.

De Vry Industries, Inc., has announced the sale of the firm's 35mm Motion-Picture

Equipment Division to Edw. H. Wolk, Inc., 1241 S. Wabash Ave., Chicago, IL 60605. The sale includes the inventory of parts, tools, dies, drawings, etc., and Wolk will continue production of replacement parts for De Vry equipments.

The Audiometrics Video Systems Division is a newly formed division of Audiometrics Corp. of North Hollywood, a manufacturer of audio-visual teaching equipment. The new division will develop and market video products, including video-tape recorders, video cameras, TV receivers and closed-circuit monitors. The firm recently acquired the educational television division of Setchell Carlson, Inc. of St. Paul, MN.

McGrath-St. Paul Company has acquired Stage IV, a Florida company engaged in motion-picture production. Stage IV, which will become a wholly-owned subsidiary of McGrath-St. Paul Company, has a library of five films, all in color.

Kodak GmbH, Eastman Kodak's associate company in Austria, has opened a new headquarters and marketing center in Auhof, a suburb of Vienna. The buildings cover 180,000 ft<sup>2</sup> of floor space and include administrative offices, a marketing headquarters and marketing education center, a processing laboratory for Kodachrome, Kodacolor and Ektachrome films, and a distribution center. The buildings are entirely air conditioned.

A \$27 million Kodak distribution complex under construction at the company's Kodak Park Division in Rochester is targeted for completion in 1975. The complex will provide floor space of about 1,140,000 ft<sup>2</sup> covering more than 26 acres. Some of the features of the complex include a huge refrigeration plant to provide controlled air-conditioning required for photographic products; a trailer compound to serve as a terminal for pickups and deliveries; modular construction to permit the division and subdivision of bays without requiring major changes in lighting, sprinkler and electrical systems and special mercury vapor lights to give greater illumination to shipping and receiving areas.

Fully automated motion-picture theaters that show first-run films on specially developed programed projector equipment will form the basis for an expansion program by Carrols Development Corp. of Rochester, NY, according to a recent announcement. The first Carrols automated theater has been opened in Syracuse, NY, and 24 more automated theaters are planned for construction during 1970. Each theater, which seats about 350 people, is a fully automated operation, from the dimming of the lights to music at intermission and the projection and rewinding of the film.

Instrumentation Marketing Corp., 820 South Mariposa St., Burbank, CA, has announced acquisition of three new product lines: 16mm and 35mm film processors manufactured by Terminal Data Corp., combination paper/film X-Y readers manufactured by John Hadland, Ltd., and the Panasonic VTR/CCTV. Instrumentation

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Marketing Corp. produces photoinstrumentation equipments including 16mm and 35mm cameras, automatic exposure controls, pulse generators, photo-digital recorders and film readers.

**Eico Canada Ltd.**, Weston, Ont., has been assigned the Canadian distribution of all cassettes, magnetic recording tape and audio accessories manufactured by Robins Industries Corp., 15-18 127th St., College Point (Flushing), NY 11356. The firm also manufactures demagnetizers and other accessories for cassette equipment, tape recorders and phonographs.

**Micrex Corp.** is a new firm created to manufacture and market photographic film. It is located at temporary headquarters at 290 Martin Ave., Santa Clara, CA. Plans are underway for construction of a new 37,000 ft<sup>2</sup> plant in Santa Clara. The new company will produce silver halide film and will also introduce a line of "dry" films for use in microfilm duplication. Equipments will include film readers, printers and duplicators for use with computer-based information systems. President of the new company is Leslie L. Burns. He was formerly Director of Research for Memorex Corp. Other officers are Brendan J. Cassin, Vice-President, Marketing; Ronald J. Murphy, Vice-President, Finance; Saul W. Chaikin, Director of Research; and Albert E. Slade, Plant Manager.

**Reeves/Actron**, 565 Fifth Ave., New York,

NY 10017, has installed a new video-tape-to-film transfer system designed specifically for the non-broadcast tape user. The system can transfer from 1/2-, 1- or 2-in video tape to 16mm or 8mm film and is designed for use with all existing helical scan tapes. The kinescope process is monitored from beginning to end so that faults in the original video tape recording can be corrected in the film negative. The new system employs equipment specially modified to Reeves/Actron's specifications. The heart of the system is the W. A. Palmer film recorder. The film recording unit can duplicate the video-tape information in its double-field 2:1 interlace. In addition, the system contains video image enhancers, dropout compensators and audio equalizers.

**RCA Corp.** has announced plans to establish a new facility on the Isle of Jersey in the English Channel. The new building will replace an outgrown leased structure occupied since 1966 when RCA Jersey Ltd., a subsidiary company, established a facility for refurbishing headwheel panels. The Jersey Isle operations were recently expanded to include production of RCA 16mm sound motion-picture projectors for shipment to markets outside the United States. Site of the new RCA plant consists of 2.6 acres in an industrial park in Jersey, an island off the northwest coast of France. The island is about 12 miles long, seven miles at its greatest width and has a population of about 65,000.

**The Goshawk**, a British film, received the Golden Gate Award, the top award presented at the 13th annual San Francisco International Film Festival. Another British entry, *The Curious History of Money*, won a Bronze Medal. *The Goshawk*, filmed by David Cobham Productions Ltd., was sponsored by BBC Television and Crescent Productions Ltd. It is a 50-min color film telling the story of a falconer and the hawk he is training.

An instructional television system, described as "the most extensive ever installed in a junior college" is in operation at Monroe Community College near Rochester, NY. The college was founded in 1961 as part of the State University of New York. A new campus including 10 new buildings was completed in 1968. The college offers various career training programs leading to the degree of Associate of Applied Science (A.A.S.). The television system enables the college to originate programs on 12 VHF-TV frequencies and one video frequency channel and to distribute them over a Jerrold coaxial cable system to every teaching station on the campus, including 156 classrooms, lecture halls, laboratories and learning carrels. Programs can be originated from any point on the campus and fed back through the cable by means of two sub-carrier channels to the college's TV resource center for distribution or taping. Equipment includes 11 cameras and 12 video-tape recorders.

One thousand EVR cartridges have been ordered for distribution to schools in Alaska, it was announced by Bob Henning editor and publisher, Alaska Northwest Publishing Co., and by CBS Electronic Video Recording Div. The first subject will be a 40-min geography on film. The project is an activity of the Alaska Geographic Society whose aim is the return of the geography book to the classroom.

Formation of EVR Special Projects has been announced by Robert E. Brockway, President of CBS Electronic Video Recording Division. James Katavolos has been named Director of Special Projects. He will develop sources of EVR cartridge programming by assisting industrial and educational interests in creating such programs.

Plans for a color television production center have been announced by Robert C. Mitchell, Vice-President and General Manager of the newly created firm, Northwest Teleproductions Inc., of Minneapolis, MN, a subsidiary of Empire Photosound Inc. of Edina, MN. Construction of a 20,000-ft<sup>2</sup> studio and production building is now underway. The building will house facilities for video-tape production of television commercials, syndicated and industrial programs. Included are color remote video-taping facilities for use on location. A feature of the production facility is a mobile color production van constructed by Philips Broadcasting Equipment Corp.

**Byron on Film** by Byron Roudabush, a booklet containing informative articles on filmmaking, is available upon request from Byron Motion Pictures, 65 K St., NE.

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Washington, DC 20002. This is considered a "semi-technical" book covering all phases of motion-picture production. The booklet contains 12 articles reprinted from *American Cinematographer* and *Business Screen*.

**Sony Corp. of America** has opened a Video-Tape Production Center at 165 Tuckahoe Rd., Yonkers, NY 10710. Services available at the center include tape duplication, tape-to-tape, tape-to-film and film-to-tape transfer and include complete studio facilities. Both color and monochrome equipments are available for production of video tapes.

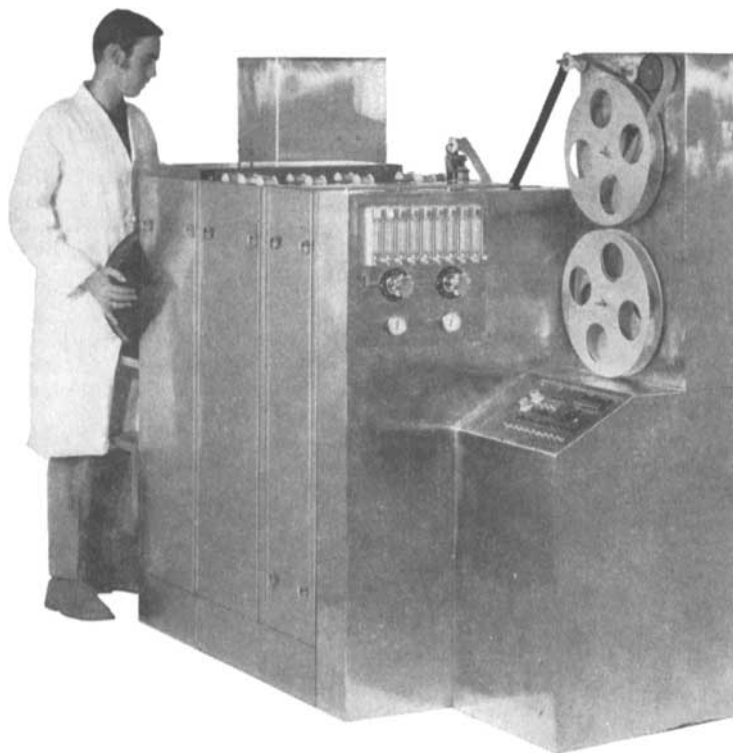
**Peter C. Goldmark** has been awarded the Elliott Cresson Medal of the Franklin Institute for his outstanding contributions to science, among them the field-sequential system that made possible the color broadcast of the Apollo 11 mission. Other achievements cited at the Institute's annual Medal Day ceremonies on October 15 include the development of the long-playing record, a practical color television system and the Electronic Video Recording System (EVR). Dr. Goldmark, who is President and Director of Research of CBS Laboratories Division, joined Columbia Broadcasting System in 1936. He is the recipient of many honors, among them the David Sarnoff Gold Medal Award presented at the Society's 106th Conference in Los Angeles.

**Peter C. Goldmark**, President and Director of Research, CBS Laboratories, addressed the luncheon given May 15 at the American Film Festival by the New York Council and the Educational Film Library Assn. Subject of the address was "Technology and the Future." Dr. Goldmark compared the "then" and "now" and pointed out some alarming possibilities for the future on the basis of the comparisons. For example, 500 years ago, world population was about 250 million—about 20% less than the present population of the United States. At the present rate of growth, in another hundred years world population will be about 24 billion. "As scientists," he said, "our most urgent mission will be to solve the problems of feeding and, above all, educating the rapidly increasing world population." He spoke of television as the "most powerful tool of communication," pointing out that the average child will have spent some 3,000 to 4,000 hours watching television before entering school. He inquired whether educational television programs "which are rarely entertaining" could not be made to attract greater audiences as commercial broadcasting.

The address has been published in the July/August issue of *Sight Lines*, an EFLA publication.

**Barton Kreuzer** has been elected an Executive Vice-President of RCA Corp. He will continue to be responsible for activities in the Commercial Electronic Systems of which he has been head since 1967. Mr. Kreuzer joined RCA Corp. in 1928 following graduation from Brooklyn Polytechnic Institute. He held various posts within the corporation and in 1958 he joined the newly established Astro-Electronics Div. where he served as Division Vice-President

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**Fred A. Niles**, President of Fred A. Niles Communications Centers, Inc., 1058 West Washington Blvd., Chicago, IL 60607, has been elected Secretary/Treasurer of the International Quorum of Motion Picture Producers. Other officers elected to the organization include W. B. H. Legg, President; and Hack Swain, Vice-President, both Americans; and governors: George Pessis, France; Heinrich Fueter, Switzerland; and G. M. W. Groom of the Union of South Africa.

**Edward L. Shuey** has been appointed to the newly created post of Manager, Broadcast Industry Relations, for the Video Products Div. of Ampex Corp., 401 Broadway, Redwood City, CA 94063. He was formerly Manager of RF applications for the Ampex RF Dept. In his new post he will be responsible for maintaining sales and marketing liaison with the FCC, consulting engineers and the division's RF systems department. His headquarters will be at the Ampex sales office in Arlington, VA.

**Charles C. Snider** has been appointed to the newly created position of Executive Vice-President and General Manager of

International Video Corp., 675 Almanor Ave., Sunnyvale, CA 94086, it was announced by IVC President, Donald F. Eldridge. Mr. Snider was formerly Vice-President-International for Consolidated ElectroDynamics Corp., a division of Bell & Howell. In his new post, he will direct all business operations of IVC. Mr. Eldridge will retain responsibility for certain corporate finance and legal matters and for acquisitions and new business development.

**Robert M. Weil** has been appointed Manager of Switching Systems Engineering for Cohu Electronics, Inc., Box 623, San Diego, CA 92112. He was formerly with RCA Corp. Broadcast and Communications Products. He joined Cohu Electronics early in 1969 as a senior systems engineer. In his new post he will have responsibility for engineering related to video distribution switching systems.

**Robert Hiltwine** has joined Byron Motion Pictures, Washington, D.C., as Manager, Customer Service Department, according to an announcement by Byron Roudabush, President. Mr. Hiltwine was formerly General Manager of the Miami Branch of Capital Film Labs. He has also served as Chief, Motion Picture Film Services in the television branch of the United States Information Agency.

**Michael D. Archer** has joined the staff of Reeves/Actron at the Actron do Brasil office, recently established in Rio de Jan-

eiro, as Manager of the Closed-Circuit, Video-Tape division of the new office. Mr. Archer was previously with Bankers Trust in New York and its Center for International Banking.

**Edgar Berger** has been appointed assistant to John Kowalak, who is Executive Vice-President in charge of Engineering and Overall Planning for Movielab, Inc., 165 W. 46 St., New York, NY 10036. In his new post, Mr. Berger will serve as Technical Director in charge of Quality Control for the Movielab complex. He was formerly Director of Quality Control for Berkey Pathe laboratories, prior to Movielab's acquisition of the laboratories.

**Peter Cardasis** has been appointed Vice-President in charge of production at Movielab's West 54th St. plant in New York City. He has been with the firm since 1952 and has held the posts of Office Manager, Comptroller and Assistant Secretary.

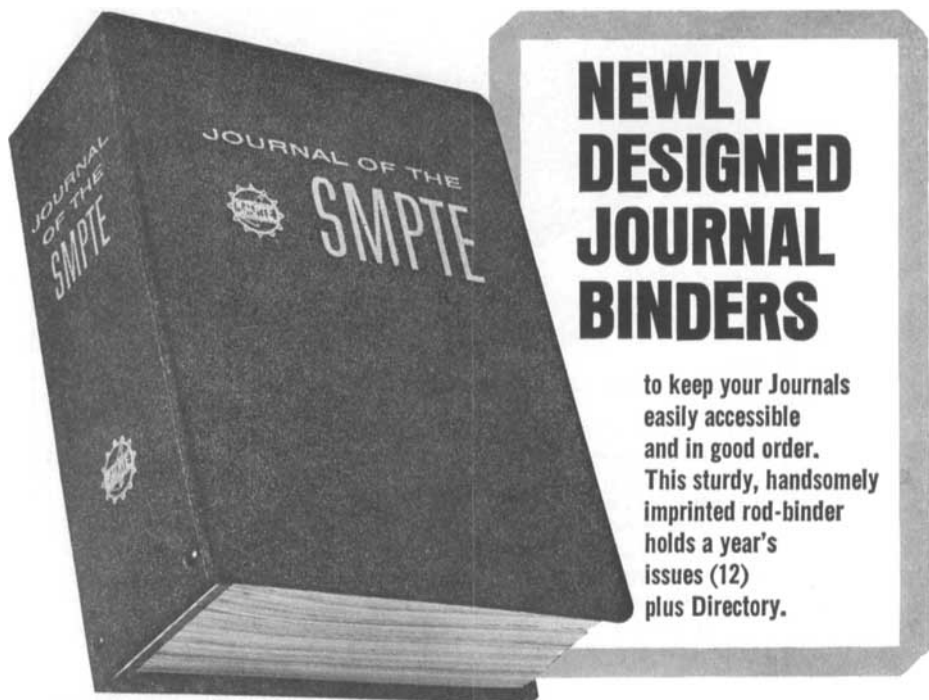
**John A. Pistor** has been appointed Director, Sales Development, for the television broadcasters markets of the Motion-Picture and Education Markets Div. of Eastman Kodak Co. Mr. Pistor has been with Eastman Kodak Co. since 1938, first in the Physics Div. and then in the Finished Film Dept. In 1946, he moved to the Motion-Picture Dept. where he was active in the scheduling and distribution of professional motion-picture film manufactured in Rochester.

**Eric A. Yavitz** has been appointed Director, Sales Administrative Services of the Motion-Picture and Education Markets Div. of Eastman Kodak Co. He has been with Eastman Kodak since 1958 and has held various posts in Kodak Park and Hollywood.

**Leland G. Collins** has been appointed Western Technical Representative for the Arriflex Corp. of America. He was formerly a motion-picture specialist in the U.S. Army and had the rank of Major. In his new post he will act as technical liaison between the company and users of Arriflex cameras in the western states. His headquarters will be at the Arriflex regional office, 1011 Chestnut St., Burbank, CA 91502.

**Don Sahlein** has been appointed Senior Vice-President of Alan Gordon Enterprises Inc. Mr. Sahlein is owner of Hollywood Camera Co., North Hollywood, CA.

The Production Services Division of Reeves Telecom Corp., 101 W. 67 St., New York, NY 10017, has announced the promotions of three engineers and the addition of a Public Relations and Advertising Manager to the staff. Arthur R. Guth, formerly Chief Engineer, has been appointed Director of Engineering. Joseph Kiss, formerly Maintenance Supervisor, has been appointed Chief Engineer. Henry Sleight, formerly an engineer, succeeds Mr. Kiss as Maintenance Supervisor. Mark Chait is the newly appointed Public Relations and Advertising Manager of the Production Services Division. He was formerly an editor of *Television Age*.



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Ken Palius has been appointed Director of Operations for the newly opened Hollywood office of Imero Fiorentino Associates, Inc., 58 W. 68 St., New York, NY 10023, a firm of lighting designers and consultants. Mr. Palius was formerly Vice-President in charge of Marketing and Development for Berkey ColorTran in Burbank, CA.

Vincent Cilurzo and James Kilgore have been appointed staff lighting directors for Imero Fiorentino Associates, Inc., in the newly opened Hollywood office, located at 7250 Franklin Ave. Mr. Cilurzo was formerly a lighting director for ABC-TV. Mr. Kilgore was formerly a lighting director at Lewron TV, Inc.

Lee H. Schank has been appointed to the newly created post of Operations Manager for the Fairchild Industrial Products

Division facility at 221 Fairchild Ave., Plainview, L.I., NY 11803. He has been with Fairchild for 12 years, during which he has directed development projects resulting in the AV-400 and Mark IV projectors. He also participated in a closely coordinated effort with Eumig of Austria which resulted in combining the Fairchild-Eumig name on a new line of cassette load sound projection equipment featuring the standard Eastman film format and utilizing an Eastman Kodak cassette.

J. Philip Stack has been appointed Marketing Manager, Television Equipment, for the Conrac Div. of Conrac Corp., 330 Madison Ave., New York, NY 10017. Mr. Stack was formerly Marketing Manager, Industrial Products for Packard Bell. The Conrac Division produces CRT data displays, computer input/output terminals and television monitors.

## current literature



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

**Audio-Visual Communications** vol. 2, no. 6, Dec. 1968  
Can American Business Films Compete AbroadI (p. 18) *Willis H. Pratt Jr.*

**AV Communication Rev.** vol. 16, no. 4, Winter 1968  
Structural Analysis of Motion Pictures as a Symbol System (p. 372) *Calvin Pryluck*  
Teaching Machines and Programmed Instruction (p. 426) *Robert T. Filep*

vol. 16, No. 3, Fall 1968  
A New Format for ITV (p. 287) *Ray Skinner, Jr.*

**Broadcast Management/Engineering** vol. 4, no. 10, Oct. 1968  
CATV, the FCC and the Law (p. 22)  
Painless Steps to Better Color Transmission (p. 28) *B. van benthem*

vol. 4, no. 9, Sept. 1968  
TV Station Automation: It's Unavoidable (p. 43) *Biagio Presti*

**The Cinemeditor** vol. 18, no. 3, Summer 1968  
The Film Editor and the Television Commercial (p. 10) *Ray Greenberg*

**Educational Broadcasting Rev.** vol. 2, no. 6, Dec. 1968  
Standards for ETV Research (p. 48) *William C. Miller*  
Asking the Right ETV Research Questions (p. 54) *Keith W. Mielke*

**Illuminating Eng.** vol. 63, no. 11, Nov. 1968  
Luminance Measurement by Photographic Photometry (p. 582) *I. Lewis and W. B. Bell*

vol. 63, no. 10, Oct. 1968  
A Combination Work and Photographic Light For Portable Service in Manned Spacecraft (p. 530) *John C. Sammis, Donald P. Northrup and William A. Wall*

**Jets Jour.** vol. 16, no. 4, Dec. 1968  
Our Newest Frontier Within the Seas (p. 16) *Elmer J. Tangerman*

**Jour. Acoustical Soc.** vol. 44, no. 6, Dec. 1968  
Fluctuations of Sound with Position in a Reverberant Room (p. 1491) *David Lubman*  
Laser Interferometer for the Measurement of Submicroscopic Displacement Amplitudes and Their Phases in Small Biological Structures (p. 1555) *Shyam M. Khanna, Juergen Tonndorf and W. W. Walcott*  
Deep-Sea Ambient-Noise Statistics (p. 1679) *T. Arase and Elizabeth M. Arase*

**Jour. Biological Phot. Assn.** vol. 36, no. 4, Nov. 1968  
Photomicrography of Three Dimensions (p. 155) *Oscar W. Richards*

**Jour. Optical Soc. Am.** vol. 58, no. 10, Oct. 1968  
Nonlinear Effects in Holography (p. 1325) *O. Bryngdahl and A. Lohmann*

**Photogrammetric Eng.** vol. 34, no. 10  
Principles and Applications of Analytical Mirror Photogrammetry (p. 1071) *Edward M. Mikhail*

**Phot. Applications Sci. Techn. Med.** vol. 2, no. 9, Winter 1968/1969  
Report on Photokina: Highlights for Scientists (p. 13) *L. Andrew Mannheim*

vol. 2, no. 8, Fall 1968  
Aerial Photography (p. 25) *Carl H. Strandberg*  
Photography Applied to Electron Microscopy (p. 31) *Lewis W. Koster*

**Photographic Jour.** vol. 108, no. 10, Oct. 1968  
The Central Unit For Scientific Photography (p. 317) *E. S. Mallett*

vol. 108, no. 9, Sept. 1968  
The Development of Visual Aids and Their Place in Education (p. 281) *Sir Brynmor Jones*

**RCA Rev.** vol. 29, no. 3, Sept. 1968  
An Experimental Pulsed CdS Laser Cathode-Ray Tube (p. 379) *F. H. Nicoll*

**Royal TV Soc. Jour.** vol. 12, no. 2, Summer 1968  
Power Economy Considerations in a Portable Video Recorder (p. 38) *S. Busby*

**Signal** vol. 23, no. 2, Oct. 1968  
Applications of Scientific Space Imagery (p. 8) *Frank J. Wobber*