DETROIT, June 25 — R. Wayne Anderson, Research Photography, Dow Chemical Co., Midland, Mich.; and Richard Petticrew, Product Marketing Mgr., National Cash Register Co., Dayton, Ohio, spoke on "Infrared Imaging and Thermal Mapping." Mr. Anderson introduced the subject of infrared imaging and instrumentation, tracing the history of the various techniques used. He then illustrated, with slides in color and black-and-white, the use of one type of infrared imaging system — the Evaporagraph, manufactured by Baird Atomics. This device produces analytical infrared images used in several types of industrial investigations including chemical processing plants, electric substation analysis and various types of heat molding and joining operations. It was also shown that the device is useful in certain types of medical diagnosis.

Mr. Petticrew demonstrated the properties of a class of heat-sensitive liquid crystals which change color in response to known temperature changes. He demonstrated that these crystals may be applied to objects under investigation in order to determine surface temperatures and temperature gradients very accurately.

The subject matter dealt with in this pair of talks was very rewarding to those brave souls who made their way to the meeting through the worst rain storm to strike the Detroit area in a generation. — Frederick M. Remley, Jr., *Secretary-Treasurer*, University of Michigan, 310 Maynard, Ann Arbor, Mich. 48108.

HUNTSVILLE, June 25 — Following a dinner reception for the guest speaker, the **Huntsville Section** met at the Sheraton Motor Inn to attend a condensed version of "The Calvin Workshop," presented by William D. Hedden, Vice-President of Calvin Productions, Inc. of Kansas City, Mo. Mr. Hedden covered the spectrum from script to screen, using film and slides to illustrate his presentation. The program was enthusiastically received by an attendance of 36 members and guests. — Karl La Roche, Jr., *Secretary-Treasurer*, 2209 Euclid Rd., N.W., Huntsville, Ala. 35810.

DENVER, Sept. 10 — The September meeting of the **Denver Section,** held at Western Cine, was attended by over 60 members and guests. Guest speaker for the evening was W. D. Hedden, Vice-President of Calvin Productions, Kansas City, Mo. Mr. Hedden presented a condensation of the popular Calvin Workshop. The program incorporated visual material illustrating production techniques, special effects, location photography, film editing, sound recording and laboratory procedures.

The formal program was followed by a social gathering of members and guests. — Richard S. Wise, *Secretary-Treasurer*, 1021 Albion, Boulder, Colo. 80302.

ROCHESTER, Sept. 12 — Dr. John R. Thirtle, Research Associate and Administrative Assistant to the Head of the Color Photography Division, Kodak Research Laboratories, spoke on "Chemistry of Color Photographic Processes," to a gathering of 225 at the Dryden Theater in Rochester.

Dr. Thirtle presented a brief review of the basic principles of color photography including additive and subtractive color mixing and color sensitization. He described color reversal and color negative-positive processes, including the chemical reactions occurring at various steps of the processing sequence. Through the use of an overhead projector, he demonstrated the actual generation of color photographic dyes. He concluded with a brief description of three processes which use pre-formed dyes. — Frank R. Reinking, Eastman Kodak Co., *Manager*, 343 State St., Rochester, N.Y. 14650.

HOLLYWOOD, Sept. 17 — The September meeting of the **Hollywood Section** was attended by 125 at the Moody Institute of Science. Members of the MIS staff talked on the following: James W. Howland, Film Processing; Estes C. Wright, Operational Amplifier Application; Robert L. Schofield, Language Dubbing; F. Alton Everest, Studio Acoustic Treatment; and Irwin A. Moon, Super 8 Standards.

These presentations covered a variety of technical areas, with emphasis on how these technical aspects are handled at the Moody Institute of Science. Following the presentations, there was a tour of the MIS facilities conducted by Lyle Phillips of MIS. — Howard Stucker, *Secretary-Treasurer*, California State College of L. A., 5151 State College Drive, Los Angeles, Calif. 90032.

CHICAGO, Sept 14 — Approximately 180 SMPTE members and guests attended the second small-format film seminar of the **Chicago Section** SMPTE held on September 14, 1968, at the Prudential Building in Chicago. Seven papers dealing with various aspects of the status of super 8 were presented.

The program opened with keynote remarks by Robert A. Colburn, who in 1966 was Program Chairman for the first seminar of this type. The papers were very well received and were presented as follows: "Striping and Recording Problems in the Production of Magnetic Sound Prints," Edgar A. Schuller, Cine Magnetics, New York, N.Y.; "Cartridge Loading Facilities," R. Jenkins, Calvin Productions, Kansas City, Mo.; "Current Status of Super-8 Medium and How Present Industry Trends Can Bring Business and Education Together," Samuel C. Gale, Capital Film Lab., Washington, D.C.; "Evaluation of Existing Printing Systems for Super-8 Release Prints," Milan Broderick, Bell & Howell Co., Chicago, Ill.; "16mm Internegative Loop Tree for Reduction Printing of Single Concept Films," M. Herman, Geo. W. Colburn Lab., Chicago, Ill.; "Trends Technicolor Sees in the 8mm Market," John Malloy, Technicolor, Inc., Costa Mesa, Calif.; and "An Improved Color Internegative Film," L. F. Coleman, Eastman Kodak Co., Oak Brook, Ill.

A tour of Douglas Film Industries completed the day.

C. L. Zichterman served as Program Chairman for this very successful meeting of the Chicago Section. — William A. Koch, *Secretary-Treasurer*, Eastman Kodak Company, Motion Picture Products and Sales, 1901 West 22nd St., Oak Brook, Ill. 60523.

The British Kinematograph, Sound and Television Society has announced some of the arrangements for Film '69, the International Film Technology Conference to be held June 23–27 at the Royal Lancaster Hotel in London.

Projection facilities will be handled by Rank Organisation's Rank Audio Visual Division by arrangement with T. E. Chilton, Esq., Joint Managing Director. Facilities will include 8mm and 16mm projection, transparency projection, overhead projection and other visual aids.

A special program of films about films and filmmaking will be presented at the National Film Theatre by arrangement with Stanley Reed, Director of the British Film Institute.

Sound-reinforcement and sound-recording facilities will be handled by Westrex by arrangement with Peter J. Buck, Managing Director of Westrex Company Ltd.

All magnetic tape material required to record the entire conference proceedings will be supplied by the Motion Picture and Television Division of Ilford by arrangement with Leslie Wheeler of Ilford Ltd.

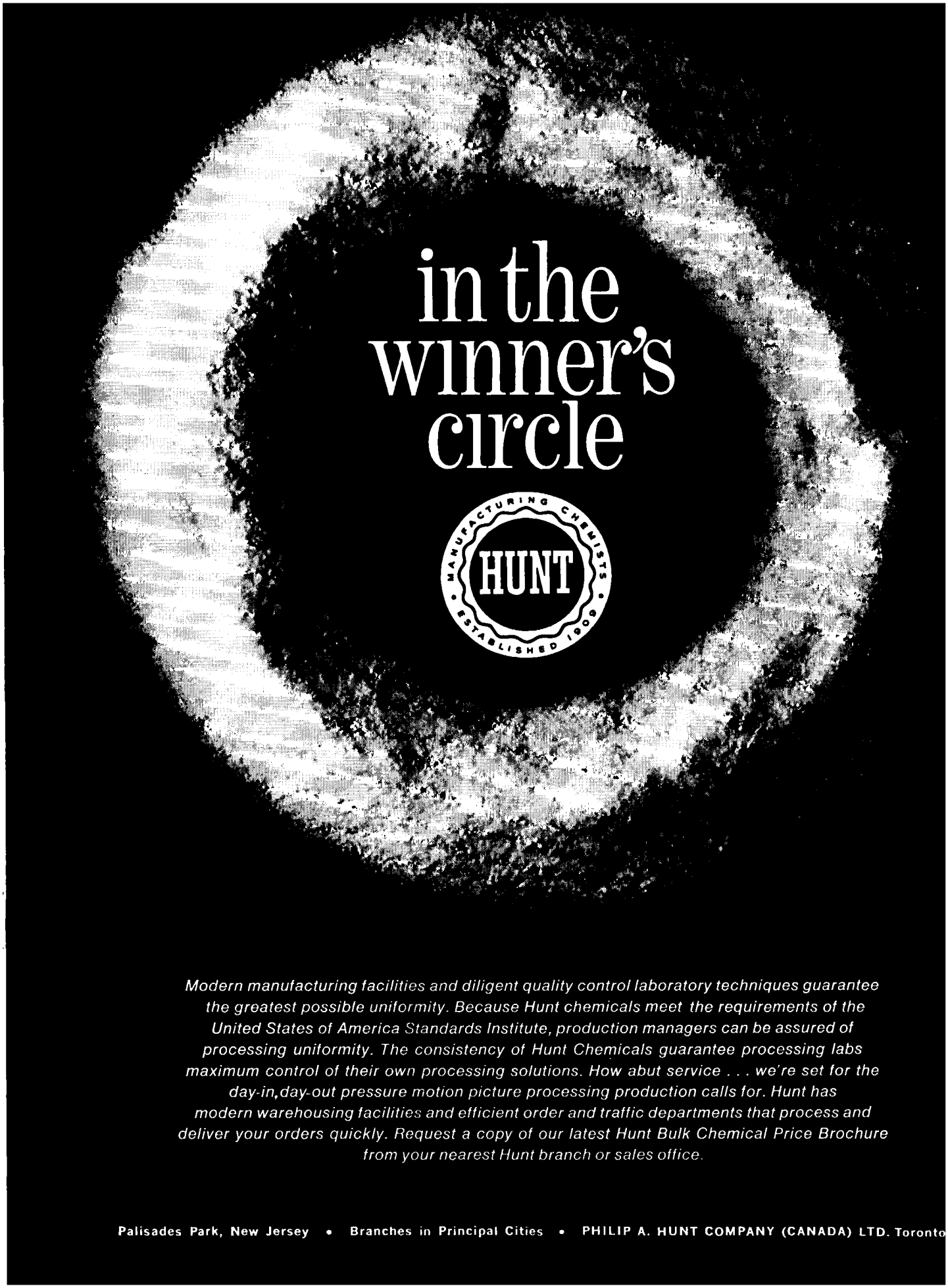
Sound facilities will be under the general supervision of the Public Address and Recording Activities Chairman, Norman H. King of Independent Television News Ltd.

Hotel reservations, advance registration, transport, etc., will be handled by Embassy Travel Ltd.

Further information is available from the Secretary, Paul D. McGurk, 110/112 Victoria House, Vernon Place, London, W.C. 1, England.

The USA Standards Institute will hold a meeting December 9–12 at the Sheraton Park Hotel in Washington, D.C. The occasion is the 50th anniversary of coordinated voluntary standardization system. There will be six sessions: Tomorrow's Challenges for Voluntary Standards; Voluntary Standards to Meet Consumer Needs; Why Adopt the Metric System?; Meeting the Challenge of Consumer Needs; Adoption of Voluntary Standards by Regulatory Agencies; Voluntary Standards to Serve the Public; Does America Need the Occupational Safety and Health Act?; Expanding World Trade Through International Standards.

The sessions on Why Adopt the Metric System? and Does America Need the Occupational Safety and Health Act? will be in the form of panel discussions. Moderator of the panel on the metric system will be Louis Polk, President of Louis Polk, Inc. Panelists will be U.S. Senator Claiborne Pell; J. H. Jenkins, President of the Canadian Standards Association; Harry E. Chesebrough, Director General of SIMCA; and H. A. R. Binney, C. B., Vice-President of the International Organization for



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Standardization and Director of the British Standards Institution. The discussion will be mainly on challenges posed to the United States and Canada by a world gone metric and the why and how of Great Britain's conversion; Questions will be invited from the audience.

The panel discussion on the Federal Occupational Safety and Health Act will attempt to answer such questions as "Who needs it and why?" and "Could industry, using voluntary standards, do the same or a better job of protecting the worker?"

The final session — Expanding World Trade Through International Standards — will also be in the form of a panel discussion. The moderator will be George T. French of Deere & Company. Panelists will include representatives from standards associations and industrial and governmental organizations in Germany, Sweden, The Netherlands and the United States. The final session will be followed by a reception and the Awards Luncheon. The speaker will be Francis K. McCune, President of the USA Standards Institute.

Other highlights of the meeting will include a tour of the National Bureau of Standards, Gaithersburg, Md. The guided tour will emphasize measurement and standards-related activities. Speakers will include these members of the NBS staff: Allen V. Astin, Director; Shirleigh Silverman, Associate Director; Ernest Ambler, Director, Institute for Basic Standards; John D. Hoffman, Director, Institute for Materials Research; L. M. Kushner, Director, Institute for Applied Technology; and William R. Tilley, Chief, Office of Technical Information and Publications.

Further information is available from USA Standards Institute, Inc., 10 E. 40 St., New York, N.Y. 10016.

The Statistical Abstract of the United States, 89th (1968) Edition, contains 1034 pages and more than 1,300 statistical tables with explanatory text. The *Statistical Abstract* has been published annually since 1878. It is designed to serve as a convenient volume for statistical reference and as a guide to other statistical publications and sources. The 89th Edition contains 83 entirely new tables. New tables on subjects of general interest include components of population change by race; health insurance for the aged; cigarette smoking; school enrollment; cost of attending college; civil disorders; Viet-Nam budget expenditures; hospital and medical insurance programs; projections of gross national product and urban renewal.

Statistics for the motion-picture industry cover advertising expenditures (p. 784), employees (pp. 223, 760), hours and earnings (p. 230), injury rates (p. 238), national income (p. 768), production and distribution services (p. 777), theaters (pp. 777, 781) and receipts (p. 774). Statistics for the television industry are also given. As might have been predicted from the statistics given in the 1967 issue (*Journal*, p. 374, Apr. 1967), the number of home-owned color television sets is increasing at a still-impressive rate — from 2.9 million (figures of January 1, 1965) to 8.8 million by January 1, 1967, and to 15.7 million by January 1, 1968.

The 89th Edition of the *Statistical Abstract* is available from the Superintendent

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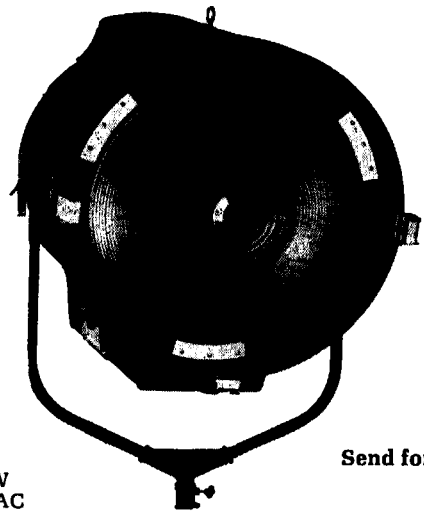

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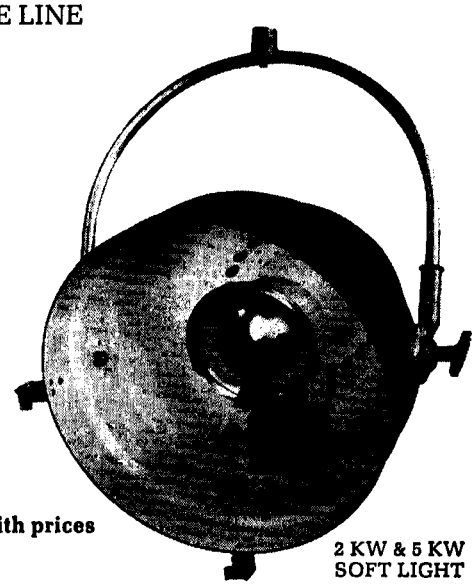

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The recently formed Photographic Industry Council (PIC) held a meeting August 6 in Chicago to formulate aims and objectives. Representatives of ten organizations, including this Society, were present at the meeting. Member organizations, other than the SMPTE, are: Professional Photographers of America, National Assn. of Photo Equipment Technicians, Master Photo Dealers & Finishers Assn., Society of Photographic Scientists and Engineers, National Microfilm Assn., International Microfilm Conference, Society of Photo-Optical Instrumentation Engineers, Photographic Society of America and National Assn. of Photographic Manufacturers. It was decided that PIC should concentrate its activities in three principal areas: education and training; promotion of photography; and convention scheduling.

A committee was set up to develop a formal structure for the Council. Committee members are: Denis Courtney, SMPTE; Vernon D. Tate, NMA; Marco DiGiovanni, NAPET; Sam Simon, MPDFA; Henry F. Sander, SPIE; A. C. Peed, SPSE; Allen Stimson, PSA; Milton J. Ruterbusch, IMC; Joseph T. Morris, NAPM. A representative of the Professional Photographers of America will be named later.

The Ninth Annual Conference of the United States Institute for Theatre Technology (USITT) will be held March 17–20, 1969, at the Hollywood Roosevelt Hotel in Los Angeles. Theme of the conference will be Total Theater. Sessions will include discussions on boxoffice, front-of-the-house operations, projection, safety codes, new plastic materials for scenery and props, electronics in the theater and techniques of the thrust stage. Further information is available from Tom Lehman, Beckman Auditorium Offices, California Institute of Technology, Pasadena, Calif. 91109.

The Canadian Film Editors Guild, P.O. Box 46, Terminal A, Toronto 1, Canada, is a newly formed association of professional film editors. Among the aims of the new organization is that of advancing the prestige of the craft. Although the Guild was organized by qualified and experienced film editors, membership is open to anyone with a professional connection with film editing. President of the new Guild is Glenn Ludlow. Phil Auguste and Chris Dew have been elected Vice-Presidents. Arla Saare is Secretary and Don Haig is Treasurer.

The First International Colloquium of Research and Educational Cinematography was held June 10–14 at Brno, Czechoslovakia. Arrangements were made by Jan Evangelista Purkyně University in Brno under the auspices of the General Committee of the Czechoslovak Scientific Film Association of the Czechoslovak Academy of Sciences. The first three days were devoted to the presentation of scientific and educational films on a university level. The films were grouped in six

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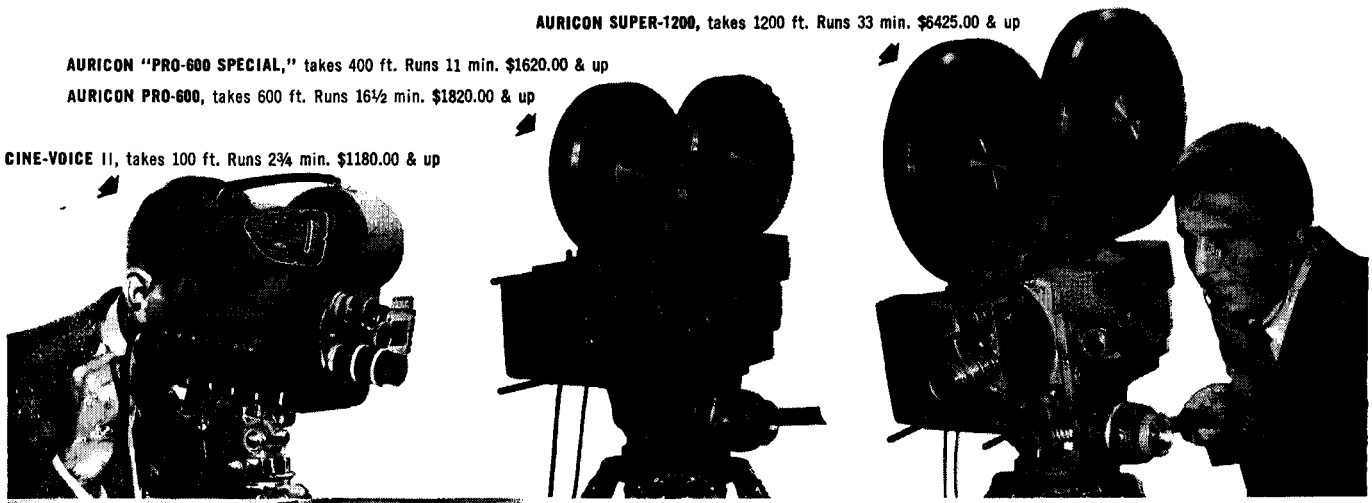

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categories — Geology and Geography; Medicine and Surgery; Techniques; General Medicine; Botany and Zoology; and Physics and Chemistry. About 130 films from Czechoslovakia and foreign countries were submitted and 52 were selected for showing. Prizes were awarded for the best films in each category. The Silver Medal of the Rector of the Jan Evangelista Purkynĕ University was awarded to an Italian film, *Nephrovascular Hypertension.*

Two days of the Colloquium were devoted to seminars which included lectures and discussions. Problems of research cinematography were discussed with emphasis on cytological research. Discussions on education centered around the use of educational films on the university level.

The Third General Meeting of the Czechoslovak Scientific Film Association was held in conjunction with the Colloquium.

Engineering Index, Inc., 345 E. 47 St., New York, N.Y. 10017, has announced publication of the *1967 Engineering Index Annual*. The *Annual* appears in two cloth-bound volumes and contains over 3,100 pages of abstracts of the world's engineering literature. Arranged alphabetically by subject heading, the *Annual* includes 56,000 abstracts from 2,000 sources with 78,000 authors and 10,000 subject headings.

The *Annual* covers internationally published material including journals, monographs, books, society and university publications on the design and fabrication of motion-picture and television equipment; applications in industry, medicine, space, underwater photography, etc.; and design and construction of studios, theaters and broadcasting stations. Journals covered include the *Journal of the SMPTE*. Abstracts of all papers that have appeared in the *Journal* during the year are included in the *Annual*.

Among the many engineering fields covered in the *Annual* are included color and colorimetry; properties of materials for use in fabrication; optics and optical instruments; lighting; environmental studies; air-conditioning and heating; acoustics; atmospheric effects on transmission; management; management engineering; materials testing; photographic materials and processes and high-speed photography.

Patents are not covered per se. However, patent information is noted when it is relevant to the content of a paper.

The *Annual* is priced at $150 for industry, business and government and $125 for educational institutions and libraries. It is available on a 30-day trial basis.

Further information is available from Leonard Ennis, Manager, Marketing and Business Services Div., Engineering Index, Inc., 345 E. 47 St., New York, N.Y. 10017.

The Society of Cinema Arts and Sciences, Bellevue-Stratford Hotel, Philadelphia, Pa. 19102, has announced its slate of officers for the 1968–69 term. Charles T. Gindhart, Jr., was re-elected President. The newly elected Vice-President is Leon Rhodes. Edward S. Rycenski was elected Secretary and Martin Eagan was re-elected Treasurer.

Seven "Little Theaters" will be included in McCormick Place, Chicago, which will open in 1970. The original building contained one "Little Theater" with a seating capacity for 573 and a small stage which occupied less than 20% of the total area of the room. During 1966 it was occupied on 291 days for an occupancy rate of 80%. Of the seven new rooms, three will seat about 500 persons with staging areas more than double that of the original Little Theatre. Four rooms each seating 700 persons will have staging areas almost three times larger. Each Little Theatre will have facilities for motion-picture and still projection equipment in a permanent location with convenient plug-in connections. It will also be possible to control house lights and sound from these locations. Further information is available from McCormick Place, 332 South Michigan Ave., Chicago, Ill. 60604.

The National Center for School and College Television, Bloomington, Ind., will henceforth be known as National Instructional Television Center (N.I.T.), according to a recent announcement. The name of the Center was changed to reflect its growing significance in education and its rapidly expanding activities, the announcement stated.

New appointments to the faculty of the Optical Sciences Center have been announced by the University of Arizona, Tucson, Ariz. 85721. Clarence L. Babcock has been appointed Research Professor. He will be doing research in glass physics. Peter Hans Bartels has been appointed Associate Professor in the Department of Microbiology. He is also affiliated with the University of Chicago. He will be doing research in pattern recognition and optical image analysis. This correlates with his work at the University of Chicago on techniques permitting recognition of pathological cells by computer. John Donald Gaskill has been appointed Assistant Professor. He was granted the PhD degree in May 1968 by Stanford University. His dissertation was on "Holographic Imaging Through a Randomly Inhomogeneous Medium." Allan J. Malvick has been appointed Associate Professor. He is doing research on deformation of large mirrors. William Swindell has been appointed Assistant Professor. His work is in the field of magnetooptics.

Sidney P. Solow, President of Consolidated Film Industries, is conducting a course in the Technology of Motion Picture Processing at the University of Southern California. He has conducted this same course for 21 years. He is now a full professor in the Cinema Department of USC where he lectures on photographic theory, control techniques and practical aspects of laboratory procedures.

A series of Film Clinics, a program initiated in 1955 by Consolidated Film Industries, 959 Seward St., Hollywood, Calif. 90038, will be held in 1968. The first of the 1968 series was held September 18. The Clinic consisted of a lecture on film processing and laboratory procedure followed by a tour of the CFI plant. The tour included the Title and Optical Dept., Filmstrip Dept., Animation Photography area and Insert Shooting area.

Production '69: A Shirtsleeve Workshop in Television Techniques, a 30-hour "cram course" in video-tape production techniques, was held during September in New York. The workshop was sponsored by Ampex, Memorex, 3M, Philips Broadcast, RCA and Reeves Video Division. About 350 persons attended. Instructors included Manning Rubin, Linc Diamant, Herb Horton, Immy Fiorentino, Mel Bourne, Norman Grant, Roger Gimbel, Gary Smith, Dwight Hemion, Hal Tulchin and Nat Eisenberg. Further information about the workshop is available from E. Grey Hodges, Reeves Video Division, 304 E. 44 St., New York, N.Y. 10017.

A new price schedule of motion-picture films for professional use has been issued by Eastman Kodak Co., Motion Picture and Education Markets Div., Rochester, N.Y. 14650. The new schedule incorporates all changes in price announced since introduction of the previous schedule dated August 1967. Three new film products are listed: Eastman Color Negative 5254/-7254, Color Internegative 5271/7271 and Color Reversal Intermediate 5249/7249. The listing of the 16mm and 35mm widths of Eastman Color Print 7385 with perforation formats for 8mm end use has been

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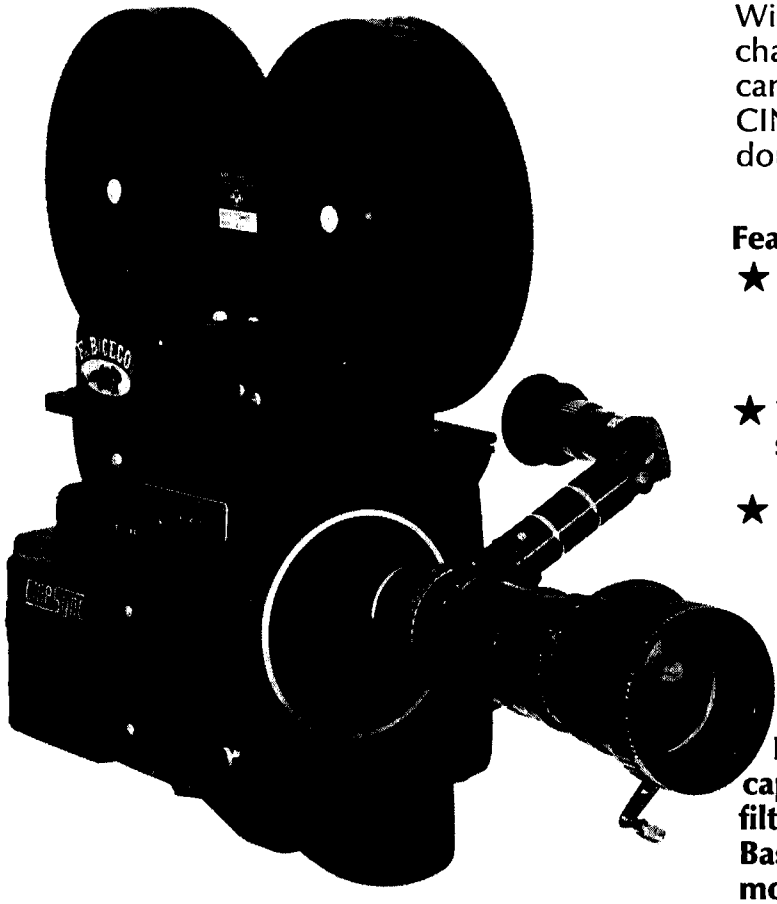

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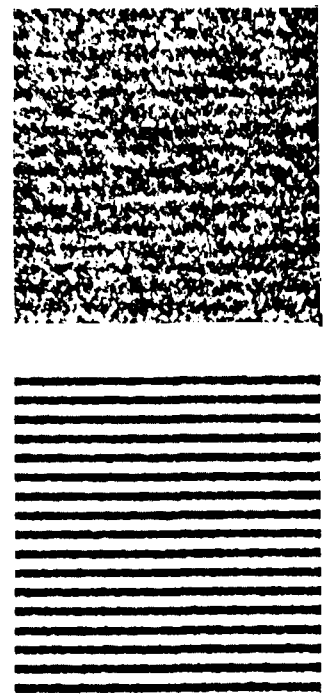

Television raster lines (right) enlarged from 16mm film frames. Lower: EBR-100 recording on 3M fine-grain (less than 0.1 micron) electron recording film. Top: kinescope recording on television recording film. Line-to-line spacing in both pictures is approximately 0.00058 inches or 14.7 microns.

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3M's new Electron Beam Recorder is the first system to produce 16mm monochrome film copies comparable to the original live or video tape signal. It has no optical system. It employs direct electron bombardment from subject to film without face-plate halation of camera-lens light losses.

In most applications the EBR-100 far surpasses the conventional kinescope in reproduction quality. Since it costs no more than the conventional kine, it opens new horizons for TV taping and mass film distribution for educational and training use.

The EBR-100 is a machine that every major TV studio, dubbing center, film lab and government communications center will want to employ. Easy to install, completely self-contained.

You can choose between a positive or a negative film print with the flick of a switch. The EBR-100 is switchable from 525 line 60 field/s at 24 frames/s, to 625 line 50 field/s at 25 frames/s.

No test strips are necessary. A nine-inch monitor screen lets you see what you are recording. The EBR-100 records for 33 minutes on each 1200-ft. reel of low-cost fine grain 16mm film at 1000-line resolution. The film can be processed like any 16mm monochrome film, and projected on standard 16mm projectors. Optional sound is available.

The unit stands about 6 feet high, 4 feet wide and 2½ feet deep, weighs about 1000 lbs., costs about $55,000. Field sales and service is worldwide.

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continued. However, these sizes are listed under Eastman Color Print Film 7380 which is especially designed for 8mm end use. The schedule also includes a number of changes effective August 26, 1968.

Ikegama-Tsushinki Co. Ltd., of Tokyo, Japan, and General Electric Co. have entered into a license agreement, recently approved by the Japanese government, under which Ikegama will manufacture a live color television camera system using the basic design of the General Electric PE-350. The Japanese firm will use components supplied by General Electric in a camera designed to meet requirements of the Japanese market.

Century Projector Corp., 729 Seventh Ave., New York, N.Y. 10019, has been notified by the U.S. Patent Office that the name "Anapfet" is now a registered trademark of the company. Anapfet is an acronym of Anamorphic Photo Field Effect Transistor.

Harry McCune Sound Service has announced construction of a new sound recording studio at 915 Howard St., San Francisco. In addition to sound recording services the studio will have closed-circuit TV facilities for monitoring and recording. The studio can also be used as a TV or film sound stage.

Alan Gordon Enterprises, Inc., 5362 N. Cahuenga Blvd., North Hollywood, Calif. 91601, has been named exclusive U.S. distributor for Dynalens, a gyro-stabilized lens system designed to compensate for vibratory motions of film and television cameras ("A Gyro-Stabilized Lens System," K. Blair Benson and John R. Whittaker, *Journal*, pp. 916–918, Oct. 1965). The lens system is used for shooting pictures from moving vehicles, such as cars, planes, helicopters and boats. It was developed by Dynasciences Corp.

Film Effects of Hollywood will create special film effects for the Japanese Pavilion of Expo '70 to be held in Osaka, Japan. Linn Dunn, President of the firm will consult with Japanese film producers on the types of techniques that can be applied within the multi-punch, multi-projection 70mm format engineered for the Japanese Pavilion show.

Pathé-Humphries of Canada Ltd., which recently acquired the Toronto sound and recording studios of Peterson Productions Ltd., following earlier acquisitions of Trans Canada Films Ltd., Vancouver, and Ciné Labs Inc., Montreal, has embarked on a program of international expansion. Harold Greenberg, President of Bellevue Photo Inc., a Canadian corporation including the Pathé-Humphries group, recently toured the United States and the United Kingdom on behalf of the Canadian film industry. He pointed out that under the present British film quota system, foreign producers, other than those of the Commonwealth countries, are severely restricted in distribution within the United Kingdom. Restrictions apply to United States film producers except for films made with Canadian participation. This restriction will give the Canadian film industry an opportunity to attract the foreign producer to make and process films in Canada, Mr. Greenberg said. He noted especially the rapid growth of the Pathé-Humphries group.

Formation of the Photographic Systems Division (PSD) has been announced by Foremost Industries, Inc., 4040 Third Ave., Bronx, N.Y. The PSD product line will include a variety of photographic and laboratory equipments such as water temperature and flow controls, chemical filtering and flow apparatus, step timing controls, special temperature control apparatus, photogrammetry items and other devices.

Birns & Sawyer, Inc., has announced the opening of new offices in Sydney, Australia, and Hong Kong. John V. Barry heads the Sydney office which will serve Malassa, Singapore, Indonesia, New Zealand and the Far East. Johnston Wong heads the Hong Kong office which will serve Hong Kong, the Philippines, Thailand, Vietnam, Burma and Japan.

Development of a new semiconductor laser device called an "inverter" has been announced by Radio Corp. of America. The light-switching device is expected to pave the way for the development of laser

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The improved quality is good reason to use super 8 as an extension of your present 16mm distribution. Super 8 offers certain advantages that you or your clients will find helpful. For one thing, compact, simple-to-operate super 8 projection equipment is ideal for personal, head-to-head selling or for presenting a film story to small groups. And it's an inexpensive medium, too. (You can get a Kodak super 8 *sound* projector for less than $200.) In fact, the whole idea of a low-cost, portable, easy-to-use display system makes film more accessible and creates more demand for your product.

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computers a hundred times faster than current data processing systems, the announcement stated. In experiments leading to the development of the device, laser signals were generated, amplified and controlled by devices made of gallium arsenide. The basic logic circuit is a gallium arsenide "laser inverter" consisting of a laser amplifier (to provide signal gain) and a laser oscillator that can be quenched (turned off) by an external optical signal. It was discovered that an optical signal requires only a few picoseconds for a single pass through a laser amplifier. In this short time, the laser signal can be amplified by more than a factor of 100 as well as reach a power level comparable to the output of a laser oscillator pumped at the same current amplitude. A laser oscillator can be quenched by the light from another laser. This quenching results from the sharing of the same laser medium by both light signals. When the external signal is removed, the oscillator output recovers. In this way, the oscillator can be turned "On" and "Off" in times as short as several picoseconds.

A patent covering optically pumped lasers that use solids or liquids to produce their beams of light has been issued to Westinghouse Corp., Pittsburgh, Pa. The patent (U.S. Patent 3,403,349) is titled "Optically Pumped Maser and Solid State Light Source for Use Therein." The inventor is Irwin Wieder. The title refers to masers because the patent application was filed in 1959, the year before the word "laser" was coined. The apparatus consists of a glass Dewar flask to hold liquid nitrogen, a stem protruding from the bottom of the flask and containing a ruby sample, and a helical flashlamp encircling the stem. The apparatus was designed to examine interactions between optically pumped ruby and microwaves.

Experimental transistors with greatly increased power output have been developed by RCA's Electronic Components Organization using a new laminated construction technique. The technique involves fusing or laminating of semiconductor materials, ultrasonic cutting, rather than photo-etch techniques, and glass hermetic sealing. The new transistors are formed on two separate silicon wafers, the emitter-base wafer and the base-collector wafer. The two silicon wafers are then fused or laminated under heat and pressure into a single monolithic structure. Features of a sophisticated overlay structure, including ballast resistors to guard against secondary breakdown, are retained in the new transistors. After lamination, the entire wafer is hermetically sealed in glass. The individual hermetically-sealed pellets are separated and can be mounted in non-hermetic packages. One of the experimental transistors generated radio waves oscillating at 1 million c/s with a power of 800 W.

Peter C. Goldmark, President of CBS Laboratories, a division of Columbia Broadcasting Systems, Inc., has been appointed to a five-year term as a member of the Connecticut Research Commission. The Commission, established in 1965 by authorization of the Connecticut General Assembly, is responsible for promotion and support of research activities that will benefit the State and its citizens. Dr. Goldmark was appointed to the Research Commission for a two-year term in 1966. He has supported several of the progressive programs endorsed by the Commission, including On-the-Job Training Through Educational Television conducted by Connecticut Educational Television Corp.

George C. Higgins, Associate Head, Physics Div., Kodak Research Laboratories, is the recipient of the President's Award of the Society of Photo-Optical Instrumentation Engineers. The award was presented by Robert Murkshe, SPIE President, who cited Dr. Higgins for "exceptional services performed voluntarily in behalf of the society and the discipline." Dr. Higgins lectured on photography at the University of California and conducted short courses and symposiums for photographic engineers on behalf of the SPIE, and through papers and publications contributed to the growth of photo-engineering science, the citation noted.

David Sarnoff Outstanding Achievement Awards were presented to Otto H. Schade, Sr., and Herbet Nelson by George H. Brown and James Hiller, RCA Vice-Presidents, during ceremonies at the David Sarnoff Research Center in Princeton, N.J. Dr. Schade was honored for "the conception of electronic techniques to

determine accurately the response of the total television system, including lenses and photographic films." Mr. Nelson was cited for "conception and application of the solution regrowth technique for making semiconducting devices." The David Sarnoff Outstanding Team Award in Science was presented for "team performance in conceiving cryoelectric memories and developing necessary theoretical understanding and technologies for their realization." Members of the team were Leslie L. Burns, Andrew R. Sass, John J. Carrona, Robert A. Gange, Eugene M. Nagle and Howard G. Scheible. The Engineering Team Award was presented for "design, development and installation of a computer-controlled fully automatic production test system for the on-line electrical test of color kinescopes." Team members were Nicholas J. Admur, Frank C. Hassett, William B. Locke, Angelo Muzi, Herbert W. Silverman and Earle D. Wyant.

Samuel Sandrof, Executive Motion-Picture Producer for the Oceanographer of the Navy, has been awarded the Navy's Superior Civilian Service Award in recognition of the outstanding oceanography film program which he established and directs. He has been in charge of the Navy's oceanography film program since its inception five years ago. Many of his educational, scientific and public information documentary films have received worldwide festival honors and awards, including the Edinburgh, Venice, San Francisco, American and Columbus Film Festivals.

Avrel Mason has been appointed Chief Engineer for the RCA Commercial Electronic Systems Div., Camden, N.J., it was announced by Barton Kreuzer, Vice-President and General Manager. Mr. Mason was formerly Manager of Program Planning for RCA Defense Electronic Products. In his new post he will have responsibility for engineering activities involving the Division's line of broadcast, professional TV, communications, industrial automation and other products.

Paul R. Rutan has been appointed Vice-President of Customer Services for Perfect Film Laboratories, Inc., 1615 Northern Blvd., Hollywood, Calif. 90038. His headquarters will be in New York where the firm maintains laboratories. Prior to his present appointment, Mr. Rutan was Sales Administration Manager for Technicolor, Inc:

William A. Muttitt has been appointed Director of Operations for Metro-Kalvar, Inc. He was formerly Operations Manager for A-V Corp. in Houston. Earlier he was engaged in motion-picture production with Bell Aircraft Corp., Carborundum Co., Uhl, Hall and Rich Engineers, and Mitre Corp. Metro/Kalvar is a subsidiary of MGM, Inc., and the Kalvar Corp., which is engaged in marketing Kalvar heat-developable photographic film and equipment.

Charles Levy has been appointed Director of the TV Lighting Dept. of Century Lighting, Inc., 380 North Broadway, Jerico, N.Y. 11753. He was formerly Director of Research Development. His new responsibilities include development of a lighting program for educational closed-circuit TV.

James K. Branch has been appointed Vice-President of Photo Research Corp., Burbank, Calif. The firm is a wholly-owned subsidiary of Kollmorgen Corp. Mr. Branch joined the firm in 1952. He has held various posts within the organization and was appointed General Manager in 1964.

Herbert S. Parker has joined Panacolor, Inc., 100 E. 42 St., New York, N.Y. 10017, as Field Sales Manager. He was formerly with the Training and Technical Assistance Div. of the Office of Economic Opportunity in Washington, D.C. In his new post Dr. Parker will direct national field sales efforts to industrial, governmental and educational markets.

Benjamin R. Parker has been appointed Program Director for Jayark Corp. He is currently engaged in the development of an educational program for Jayark dealing with family life. The project is directed to children from kindergarten through the 12th grade.

Donald H. O'Dell has been appointed Manufacturing Manager for Macalaster Scientific Co., a division of Raytheon Education Co. He was formerly Manager of Information Systems at the Andover, Mass.,

plant of Raytheon's Missile Systems Div. The Maaclaster Div. manufactures science learning apparatus used in school and college science programs.

William J. Macy has been appointed Studio Manager at Manhattan 45, 17 East 45 St., New York, N.Y. 10017. Manhattan 45 contains studios and facilities of Manhattan Sound Studios, 460 W. 54 St., New York, N.Y. 10019. Mr. Macy was formerly Cost Control and Unit Manager for American Broadcasting Co.

Bob Allen has been appointed West Coast Director of Rental Sales for F & B/Ceco of California. He was formerly film equipment rental representative for Alan Gordon Enterprises. He has also been Stage Manager at Cahuenga Tower Studios and has been in charge of the Rental Department of Birns & Sawyer.

Sam Kula has been appointed Director of the Archive Division of the American Film Institute, 1707 H St., Washington, D.C. 20006. He succeeds Richard Kahlenberg who has been reassigned as coordinator of planning for the AFI Center of Advanced Studies. Mr. Kula was formerly Lecturer in the Department of Instructional Technology at the University of Southern California.

Frank J. Hubatsek has been appointed Industrial Sales Manager of FR Corporation, 951 Brook Ave., Bronx, N.Y. Mr. Hubatsek's prior experience includes 18 years with Eastman Kodak as Senior Development Technician. He has also been affiliated with Philip A. Hunt Chemical Corp. as Assistant National Black-and-White Products Manager and with Pako Corp. where he engaged in technical sales and marketing activities.

Duane M. Weise has been appointed Vice-President of Marketing, Television, for Central Dynamics Ltd., Montreal, Canada. Prior to this appointment he was Manager of Engineering for General Electric Broadcasting Co. and General Electric Cablevision Corp. in Schenectady, N.Y. In his new assignment he will be responsible for all aspects of the company's range of television products sold in Canada, the United States and overseas.

Edward W. Cornely has been appointed General Manager of the Cleveland laboratory of Holland-Wegman Laboratories, Inc. Kenneth E. Hinds has been appointed Laboratory Manager. Announcement was made by Edward J. Wegman, President of the corporation. Mr. Cornely will have overall supervision of the Cleveland laboratory and Mr. Hinds will be responsible for the technical operation of the laboratory.

Lawrence Weiland, General Manager of Ampex Corp.'s Video Products Div., has been elected a Vice-President of the corporation. He has been with Ampex since 1960. Prior to joining the firm he was Manager of Advance Planning for NBC in New York.

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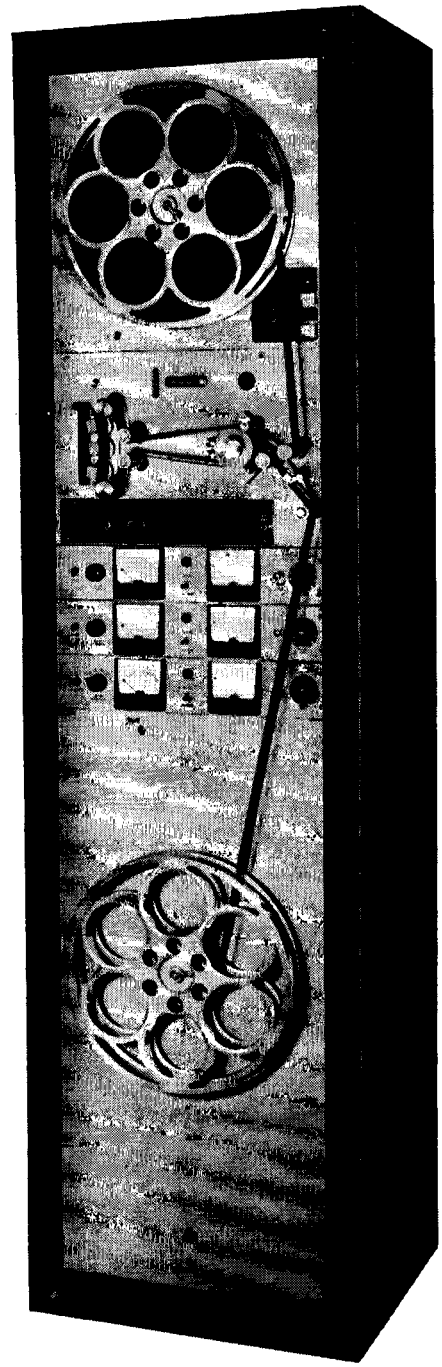

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James L. Davis has been appointed Sales Manager, Studio, Theater and Television Lighting, Photolamp Div., Sylvania Electric Products Inc., 730 Third Ave., New York, N.Y. 10017. Announcement was made by Richard H. Hodges, Sales Manager Industrial/Commercial, who also announced the appointment Fred H. Freeman as New York area Studio, Theater and Television Specialist. Mr. Davis has been with Sylvania since 1957. In his new post he will be responsible for coordinating all of the marketing activities in the studio, theater and television lighting fields.

New Members

The following members have been added to the Society's rolls since the July 1968 Directory. Also listed are those regretfully reported as deceased since then. The designations of grades are the same as those used in the July 1968 Directory. An up-to-date list of the Sustaining Members appears on the outside back cover of each month's *Journal*. The members listed below complete the Society's roll as of September 6.

Active (M) Associate (A) Student (S)

Deceased: C. S. Ashcraft (F) Millard W. Baldwin, Jr. (F) Walter E. Dunn (A) Rudolph R. Epstein (F) Robert J. Harrington (M) Claude F. Parkins (M) John D. Schubeck (A)

Achey, Raymond F., TV Engr., Univ. of Florida. Mail: 1111 S.W. 16 Ave., Gainesville, Fla. 32601 (M)

Adler, David, Lighting Dir., American Broadcasting Corp. Mail: 300 E. 51 St., New York, N.Y. 10022 (A)

Adrian, Forrest F., Chf. Visual Aids, Shell Oil Co. Mail: 10607 Clematia La., Houston, Texas 77035 (A)

Ajar, Charles G., Self Empl. Projectionist, Universal Studio, Mail: 4265 Clybourn Ave., North Hollywood, Cailf. 91602 (M)

Allen, Kenneth E., Dir. Res. & Dev., Kodak (A'Asia) Pty. Ltd., P.O. Box 90, Coburg, 3058 Australia (A)

Amano, Robert, Student, General Motors Institute. Mail: 8120 Meyers Rd., Detroit, Mich. 48228 (S)

Anderson, William H., Retired, 4442 Coldwater Canyon Ave., Studio City, Calif. 91604 (A)

Arnest, Phillip G., Vice Pres., Creative Arts Studio, Inc. Mail: 7707 Maid Marion Ct., Alexandria, Va. 22306 (M)

Atkinson, Russell B., Instrument Engr., Weirton Steel Co. Mail: 300 Rosemont Ave., Steubenville, Ohio 43952 (A)

Barak, Dusan D., Printer, Color Laboratories, Inc. Mail: 6037½ Romaine, Los Angeles, Calif. 90038 (A)

Barber, Joseph O., Cameraman, Self Empl., 465 Grand Concourse, Miami Shores, Fla. 33138 (M)

Baker, R. Edgar, Pres., Alert Enterprises, Inc., 218 Magnolia Ave., Gloucester, Mass. 01930 (A)

Bartle, Oswald E., Chf. Engr., Television New England Ltd. Mail: P.O. Box 317, Tanworth, N.S.W., Australia 2340 (A)

Bastin, Eric R., Dir., Sls. & Mobile Presentation, Projection & Display Services, 103 Lancaster Rd., London W. 11, England (A)

Beck, Robert C., Self Empl., 1538 Cassil Pl., Los Angeles, Calif. 90028 (M)

Becker, Frank H., Mot. Pic. Film Processer, Naval Missile Center. Mail: P.O. Box 725, Oxnard, Calif. 93030 (M)

Bentley, Bernard A., Chf. Engr., Essondomatic, Ltd. Mail: 39 Rivermead Rd., Camberley, Surrey, England (M)

Berger, Frances G., Mot. Pic. Timer, A-V Corp. Mail: 4301 Bissonnet, Apt. 64, Bellaire, Texas 77401 (A)

Bergsma, Wiebe, Mgr. Tech. Services, Perception Industries, Inc. Mail: 11 Rockport Cres., Richmond Hill, Ont., Canada (M)

Berry, Lawrence R., Audio Visual Splst., Lenoir Rhyne College. Mail: 511 7 Ave., N.E., Hickory, N.C. 28601 (M)

Bivens, Loren, Student, State University of Iowa. Mail: 903 Hudson Ave., Iowa City, Iowa 52240 (S)

Black, Irvin R., Vice Pres., Operations, Alderman Studios, Inc. Mail: P.O. Box 26, High Point, N.C. 27261 (M)

Block, Michael, Audio Visual Mgr., Crowell Collier & Macmillan, Inc. Mail: 832 Midwood St., Brooklyn, N.Y. 11203 (A)

Bloomquist, Richard, Owner, Video Consultants, 1100 Hillgrove Ave., Western Springs, Ill. 60558 (M)

Blose, Arthur R., Tech. Sls. Rep., Fuller & d'Albert, Inc. Mail: 5543 Oxon Hill Rd., Apt. 202, Oxon Hill, Md. 20021 (A)

Bowers, Roy, Hd. Photog., Gov't of B.C. Mail: 3981 Elmwood St., Burnaby, B.C., Canada (A)

Braislin, John E., Dir. of Operns., Western Video Ind., 1541 N. Vine St., Hollywood, Calif. 90028 (M)

Branch, James K., Gen. Mgr., Photo Research Corp. Mail: 2730 El Caminito, La Crescenta, Calif. 91214 (A)

Brooks, G. Leonard, Coordinator of A-V, Tech. Dir. TV, City Univ. of N.Y. Mail: 1985 Morris Ave., Bronx, N.Y. 10453 (M)

Brown, Jack G., Supvr., TV Operations, North American Rockwell. Mail: 11236 Garfield Ave., Culver City, Calif. 90230 (A)

Brown, Richard P., Supervisory Engr., B&H Airline Products Div., 360 Sierra Madre Villa, Pasadena, Calif. 91109 (M)