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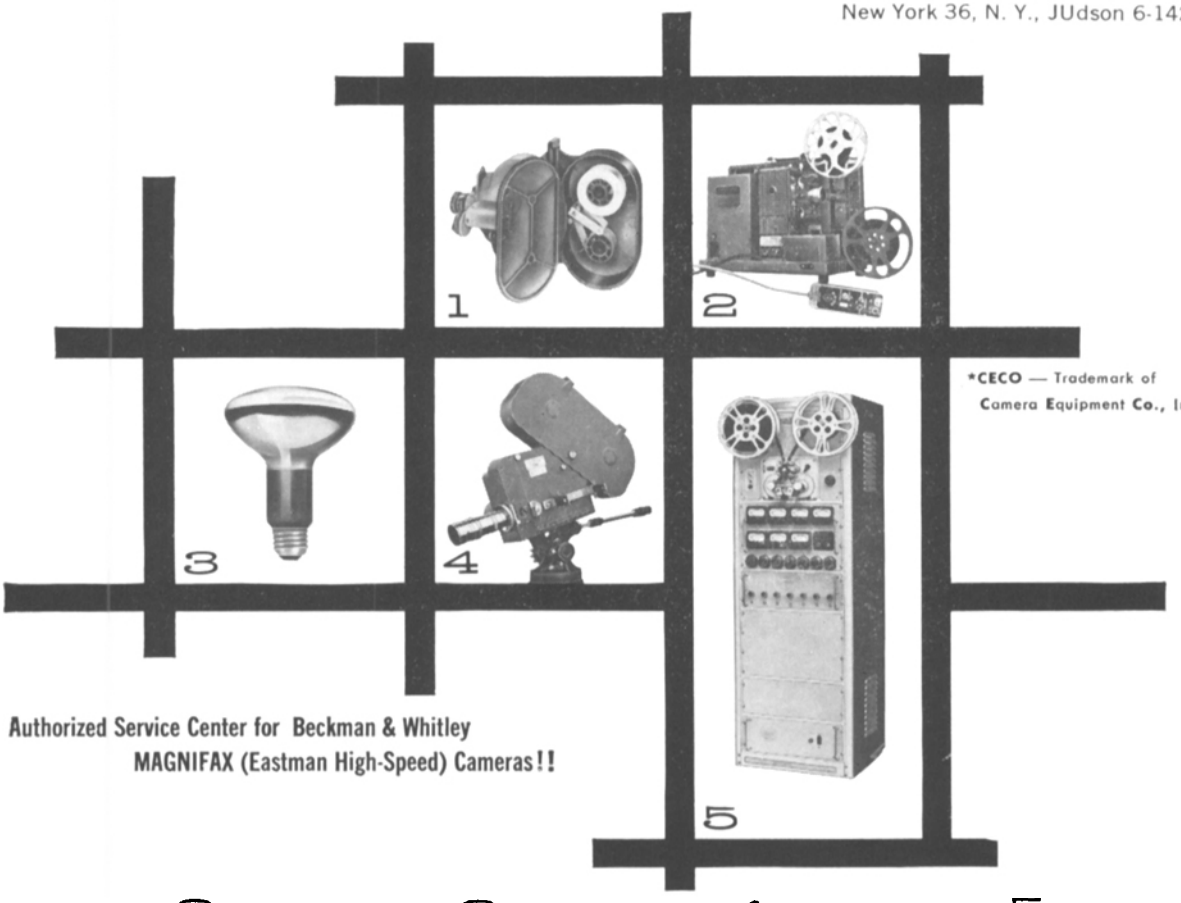

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nical Program will be a Symposium on New Energy Sources, set for the evening of March 21. Among Sessions of special interest is Session 37 on Communication Systems — Basic Theory. A paper on "Statistics of Hyperbolic Error Distribution in Data Transmission," by Pierre Mertz will be presented. Dr. Mertz is Chairman of the SMPTE's Board of Editors.

The 4th International Conference on Medical Electronics and the 14th Annual Conference on Electrical Techniques in Medicine and Biology will be held jointly July 16–21, 1961, at the Waldorf-Astoria, New York. The Conference is sponsored by the Joint Executive Committee on Medicine and Biology (IRE, AIEE, ISA) under the auspices of the International Federation for Medical Electronics. It is organized by the IRE through its Professional Group on Bio-Medical Electronics. Program Chairman is H. P. Schwan of the University of Pennsylvania. The theme of the Conference covers a broad scientific area common to the engineering, medical and biological fields. Topics of discussion are expected to include models of biological systems, physiological monitoring, system analysis, electrical and radiation stimulation study, automation, instrumental diagnostic methods, data analysis techniques, physical-chemical procedures and related topics.

The Industry Film Producers Association will hold its 2d Annual Convention and Trade Show June 2–3, at the Miramar Hotel, Santa Monica, Calif. Convention Chairman is Jack C. Williamson, with Headquarters at Paul Garrison Organization, 10323 Santa Monica Blvd., Los Angeles 25.

Seventy-six members of the IRE were advanced to the grade of Fellow by action of the Board of Directors which met November 14 in Boston. The highest membership grade offered by the IRE, the grade of Fellow, is bestowed by invitation on individuals who have made outstanding contributions to radio engineering or allied fields. Among those honored are SMPTE members J. F. Fisher, Engineering Section Manager, Philco Corp., Philadelphia, Pa.; A. C. Keller, Director, Switching Systems Division, Bell Telephone Laboratories, Inc., New York; and A. M. Zarem, President, Electro-Optical Systems, Inc., Pasadena, Calif.

Independent producer Emerson Yorke is currently filming a documentary at Carthay Studios about Toastmasters International, a nonprofit organization with some 80,000 members in 3200 affiliated toastmaster clubs. The film is to have the title, *Accustomed as I Am*, and will be based on a recent *Reader's Digest* article with the same title. The film will outline the origin and growth of the organization.

Recent appointments announced by Elgeet Optical Co., Rochester, N.Y., include Andor Fleischman, Director, Optical Engineering; and Manny Kiner, Director, Special Products Division. A native of Budapest, Mr. Fleischman received his early education in Tel Aviv, Israel. He was granted a Bachelor of Science Degree in Physics by New York University in 1953 and a Masters Degree in Optics by the University of Rochester in 1955. Prior to his present appointment, he was an optical specialist at Aerojet-General, with emphasis on infrared systems and interference filter design. Mr. Kiner was granted a bachelor of Science Degree in Optics by the University of Rochester in 1953. He has been associated with Elgeet since 1952.

Charles F. Schwep has been appointed Manager of the Visual Communications and Training Department, a new unit of the American Management Association. The new department includes video-tape equipment and closed-circuit TV as well as motion-picture facilities. Mr. Schwep, formerly President of Trident Films, Inc., New York, has produced, written or directed more than 60 documentary films. He has also acted as consultant on motion pictures to the Commissioner General of the Brussels World's Fair and has been Chairman of the Film Selection Committee for the U.S. Theatre.

Bert Spielvogel has been appointed Director of Cinematography for On Film, Inc., of Princeton, N.J., and New York. His responsibilities include supervision of

MICROFLASH This photograph made with newly developed EG&G Microflash (below). Light duration: .5 microsecond. Peak Light: 50 x 10^6 horizontal candle power. Energy input: 8 w.s. (0.05 mfd @ 18 kv.). Plus-X, f/11. Price: $975.00 F.O.B. Boston. (Delivery from stock.)

ultra-high performance photographic equipment

FLASH ILLUMINATOR Safe source of cool, high intensity light for extreme close-ups and microscopic work. Color or black and white. Eliminates heat damage of delicate subjects. Incandescent focus light included.

501 STROBOSCOPE for high-speed motion pictures. 1.2 μsec. flashes up to 6,000 c.p.s. Time jitter less than 100 Mμsec.

LS-1 FLASH UNIT illuminates large areas for night aerial photography, etc. 635 w.s. light output, 26,000 to 88,500 beam c.p., depending on beam angle.

LS-10 MULTI-FLASH Multiple discharge units permit superimposed images on single negative for stress and strain studies, ballistic measurements, etc. 1 microsecond flash duration — max. rate 100,000 flashes per second.

RAPATRONIC CAMERA Magneto-optic shutter permits 0.8 μsec. exposures of self-luminous events.

SUN FLASH duplicates sunlight with only slight filtering for normal color films. Approx. 10,000 w.s. per flash. Duration: 1/250 sec. to 1/10 of peak light. Charging cycle: 30 seconds.

303 STROBOSCOPE for observing large, rotating objects. Flashes up to 60 per second. Total duration 25 microseconds.

XENON FLASH TUBES FX-6A has billion flash life. FX-29 offers 2500 horizontal candle power. Many others with varied special characteristics. Ideal for computers, test instrumentation, laser stimulators, etc.

DOUBLE-FLASH Complete, portable system for short duration, double-exposure shadow photography at accurately timed intervals.

MARK VI SENSITOMETER Uniformity of repeated exposure ensured to within ±5%. Light closely approximates daylight. Ideal for process control.

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all camera work including animation, supervision of aerial image projector effects and coordination of activities with the Motion Picture Film Research and Design Department. Prior to his present appointment he operated a motion-picture studio in Washington, D.C., where, among many other assignments, he produced a number of films for On Film. Early in his career, he worked with Robert Flaherty and the original Cinerama group. He has also been on the teaching staff of American University, Washington, D.C., as Instructor in Cinematography.

H. B. Chandler, of Montreal, has been appointed Senior United States Representative of the National Film Board, with headquarters in Canada House, New York. He succeeds J. W. Cosman who has returned to Montreal as Chief of Film Sales Division, NFB. Prior to his present appointment, Mr. Chandler was Assistant Chief of the International Division, NFB. Part of his activities included supervision of the distribution in the United States of Canadian travel films.

Hans Stauder has been appointed President and General Manager of Paillard, Inc., the U.S. subsidiary of Paillard S.A., Yverdon, Switzerland. Mr. Stauder joined Paillard as Vice-President when it was founded in New York in 1949. Prior to his present appointment he was Executive Vice-President and General Manager.

Walter Rybka has been appointed Director of Technical Operations of Paillard, Inc., N.Y. He will be in charge of technical operations, including all phases of equipment evaluation for the improvement and development of Bolex 8mm and 16mm motion-picture equipment as well as other photographic products.

George E. Spaulding, Jr., has been elected to the newly created post of Vice-President of Engineering Operations, Photo Products Division, Bell & Howell. In his new post he will be responsible for manufacturing and design engineering functions and for quality standards. For the past twelve years, he has been associated with Electric Autolite Co., Toledo, Ohio, where he served as Director of Research and General Manager of the SPARD Division.

Arthur Cox has been elected an Assistant Vice-President of the Photo Products Division of Bell & Howell. In this post he will be responsible for the design and development of photo-optics within the division and will act in an advisory capacity in the field of optics for other divisions of the firm. He has been with Bell & Howell since 1952 and previously was head of the Scientific Department of Farrand Optical Co.

Announcement of the appointment of Adolph H. Rosenthal to the newly created post of Scientific Advisor to the President has been made by Kollsman Instrument Corp., Elmhurst, N.Y. The firm has also created a Research Division to study areas of development including infrared, ultrasonic, information handling, analysis and communication and related fields. Internationally known as an authority in applied physics research, Dr. Rosenthal is the inventor of the dark trace cathode-ray tube, and holds more than 30 U.S. Patents in subscriber and color television, light modulation and display and recording methods. Prior to his present appointment he was Vice-President of Fairchild Controls Corp. and Senior Research Program Director of Fairchild Camera and Instrument Corp.

Roger Tilton has been appointed head of the Motion-Picture Department of Brooks Institute of Photography, 2190 Alston Rd. Santa Barbara, Calif. Producer of a number of cultural and educational films, one of his films, *Jazz Dance*, won two awards in 1955, the Award of Merit at the Edinburgh Film Festival and the Special Award of the Robert Flaherty Documentary Film Competition. His earlier teaching posts included the City College of New York and Columbia University.

J. Drayton Hastie has been appointed President of the Broadcasting Division of Reeves Broadcasting and Development Corp. He was formerly a Vice-President of the firm. Another Vice-President, Chester L. Stewart, has been named President of Reeves Sound Studio Division, New York. Mr. Hastie's new headquarters will be in Charleston, S.C. The Division operates television stations WUSN-TV, Charleston; KBAK-TV, Bakersfield,

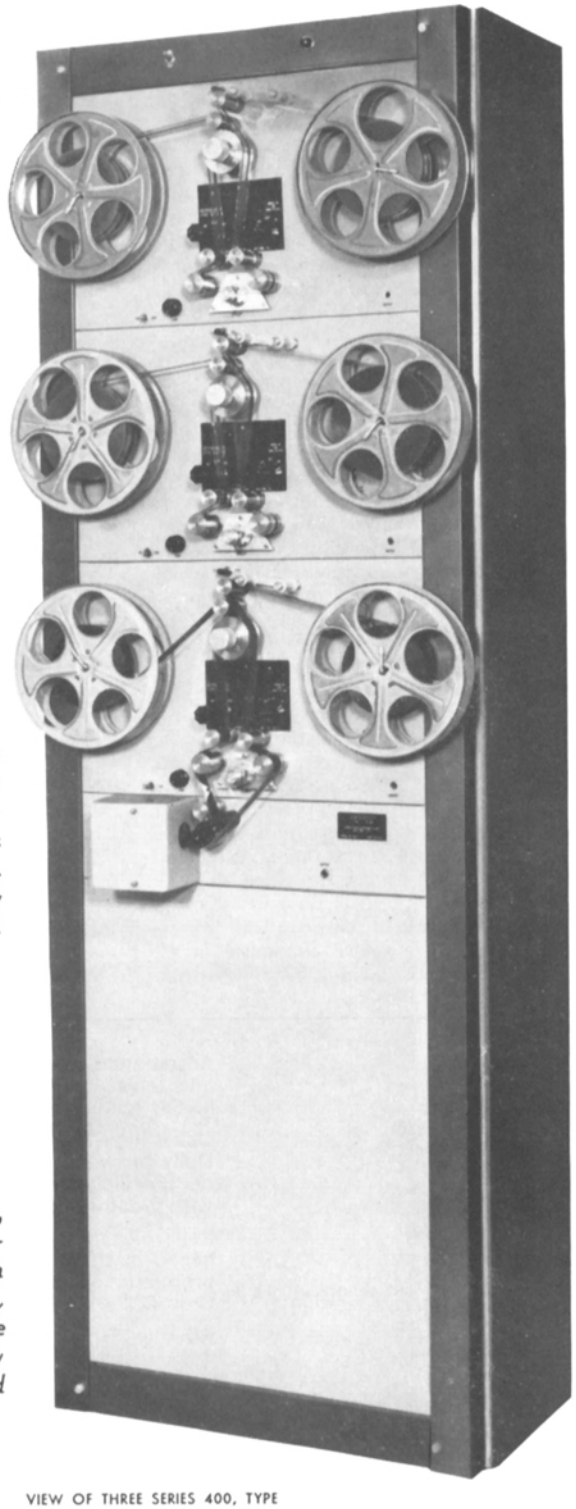
MAGNA-TECH ELECTRONIC 400 SERIES FILM RECORDING EQUIPMENT ARE VARIOUS INSTRUMENTS SPECIALIZED TO PERFORM THE FUNCTIONS ASSOCIATED WITH THE PRODUCTION OF OPTICAL AND MAGNETIC SOUND FOR MOTION PICTURES. THEY OFFER SPACE AND CAPITAL INVESTMENT SAVING WITHOUT COMPROMISING THE CRITICAL DEMANDS OF THE ENGINEER.

The transport is a self-driven unit *incorporating the film pulling mechanism, a miniaturized semi-conductor reproduce amplifier, drive motor and torque motors in one assembly. Basically a magnetic reproducer, it is also used as a magnetic recorder, optical reproducer, and optical recorder by means of optional attachments.*

A cabinet can be supplied to *house five complete film reproducers or various optional attachments and transports utilizing the 77" panel space. A semi-conductor power supply mounts inside this cabinet.*

Interlock is provided by the *conventional method using a selsyn motor mounted on each film transport. 2 to 8 track reproducers and record attachments are also provided. 8 reproduce amplifiers are mounted on one panel. Recording amplifiers are on individual panels.*

Because of quality materials, *quality workmanship, and integrity of design, together with the performance and stability, the Series 400 has a complete range of application in every phase of production of sound for films.*



VIEW OF THREE SERIES 400, TYPE MD497 DUAL FILM WIDTH, 17½ mm AND 35mm MAGNETIC REPRODUCERS, AND ONE OD435, 35mm OPTICAL REPRODUCER ATTACHMENT INSTALLED IN THE CS400 CABINET.

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TYPE	FILM WIDTHS	SPEEDS(fpm)	OPTIONAL ATTACHMENTS ACCOMMODATED		
MD416	16mm	36	MR416 MAGNETIC RECORD	OD416 OPTICAL DUBBER	OR416 OPTICAL RECORD
MD417	17½mm	90	MR417 MAGNETIC RECORD		
MD435	35mm	90	MR435 MAGNETIC RECORD	OD435 OPTICAL DUBBER	OR435 OPTICAL RECORD
MD447	17½mm	45	MR447 MAGNETIC RECORD		
MD437	COMB. 17½/35mm	DUAL 45/90	MR437 MAGNETIC RECORD	OD435 OPTICAL DUBBER	OR435 OPTICAL RECORD
MD427	17½mm	DUAL 45/90	MR427 MAGNETIC RECORD		
MD497	COMB. 17½/35mm	90	MR437 MAGNETIC RECORD	OD435 OPTICAL DUBBER	OR435 OPTICAL RECORD
MD436	COMB. 16/35mm	DUAL 36/90	MR436 MAGNETIC RECORD	OD416 AND OD435	OR416 AND OR435

M.T.E. MAGNA-TECH ELECTRONIC CO. INC.
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Calif.; and, subject to FCC approval, WHTN-TV, Huntington, W. Va.

A new corporation, the Shafford Electronics & Development Corp., 2945 Nebraska Ave., Santa Monica, Calif., has been formed. Emphasis will be on avionics and spacetronics control systems, according to an announcement by Clifford A. Shank, President and Chairman of the Board.

The new Aero Systems Engineering, a Division of Aero Service Corp., 210 E. Courtland St., Philadelphia 20, is staffed to undertake research, development system design tasks, and operational programs in fields related to photogrammetry, geophysics, simulators, training devices, data handling and analysis and avionic tests. Its services and capabilities are described in a beautifully illustrated booklet which suggests the wide scope of its accomplishments.

Methods of foam inflation and the development of radiation-resistant plastic foam materials are being studied by scientists at the Astro-Electronics Division, Radio Corp. of America, Princeton, N.J., with a view toward developing a technique for setting up large structures in space. This line of research was discussed by Carl C. Osgood in a paper prepared for presentation at the annual West Coast meeting of the American Astronautical Society. Space structures under consideration for the near future include extensive solar energy collectors and radar antennas 60 ft or more in diameter. Space stations and special-purpose satellites may be built with balloon-like tubes that can be folded into compact packages for launching and inflated automatically in space with a plastic foam hardened by the heat of the sun.

The modernization program of Consolidated Film Industries, a division of Republic Corp., begun in 1960, includes the installation of two specially-designed film-processing machines in its Fort Lee, N.J., laboratory. The machines were designed and built by Republic Corp.'s West Coast Laboratories. Consolidated is also increasing cutting-room facilities maintained at its New York headquarters, and is modernizing projection facilities to accommodate present and future requirements of motion-picture and television clients.

A revised price list for "Scotch" brand video tape No. 179, showing a 10% reduction in price for all sizes, has been announced by Minnesota Mining and Mfg. Co., 900 Bush Ave., St. Paul 6, Minn. This is the fourth price reduction in two years. In making the announcement, the company credited the reduced price to "improved methods of making the tape," in spite of "the trickiness of quality controlling such a product in which tolerances are held to 30-millionths of an inch."

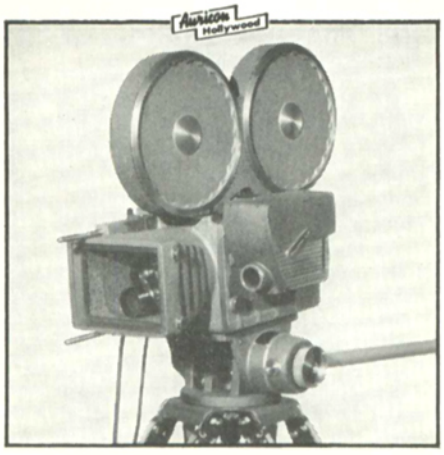
Du Pont's Photo Products sales activities will be transferred from the present New York District Sales office location together with its warehousing facilities to Secaucus, N.J. A new building planned to double office and warehouse space is under construction on a 20-acre site near the southwest intersection of the New Jersey Turnpike and Route 3. It is expected to be completed by mid-1961. The new warehouse is planned to expedite deliveries to New York. It is located near the Lincoln Tunnel and is accessible to trucking terminals and major trucking routes.

The hot splicers produced by Hollywood Film Co. are now available in "sturdy, attractive and functional" custom-built cases, according to a recent announcement. In addition to the hot splicer each case contains a pint of film cement, a pint of acetone and 100 scraping blades. The firm also announced availability of a complete line of 70mm hot splicers.

A series of Symposia on motion-picture production has been arranged by three leading equipment manufacturers, beginning Feb. 14–16, in Kansas City, Mo. Subsequent meetings will be held Feb. 20–21, in Dallas, and Mar. 31–Apr. 1, in Santa Monica, Calif. Later meetings are planned for Salt Lake City, San Francisco and Seattle. Discussions, based on question-and-answer sessions, will center around displays of equipment. Participating jointly in the venture are Arriflex Corp. of America, Magnasync Corp., and Natural Lighting Corp.

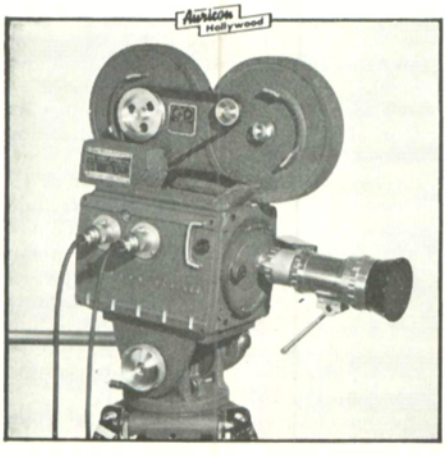
AURICON 16mm Sound-On-Film for Professional Results!

"CINE-VOICE II" 16 mm Optical Sound-On-Film Camera. ★ 100 ft. film capacity for 2¾ minutes of recording; 6-Volt DC Convertor or 115-Volt AC operation. ★ $967.00 (and up).



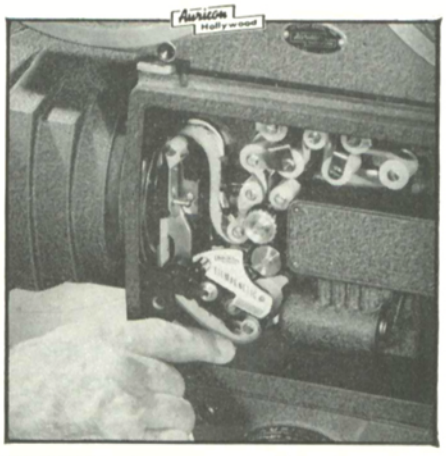
"AURICON PRO-600" 16mm Optical Sound-On-Film Camera. ★ 600 ft. film capacity for 16½ minutes of recording. ★ $1871.00 (and up) with 30 day money-back guarantee.

"SUPER 1200" 16 mm Optical Sound-On-Film Camera. ★ 1200 ft. film capacity for 33 minutes of recording. ★ $5667.00 (and up) complete for "High-Fidelity" Talking Pictures.

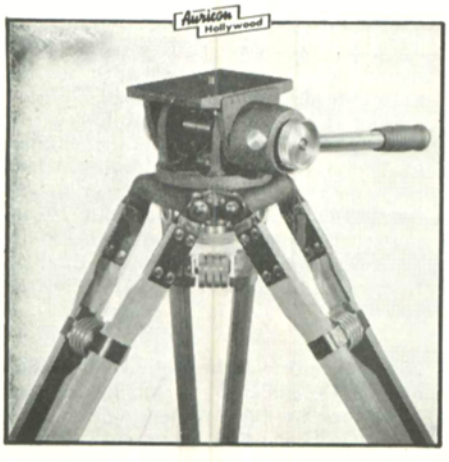


"PRO-600 SPECIAL" 16mm Light-Weight Camera. ★ 400 ft. film capacity for 11 minutes of recording. ★ $1,295.00 (and up).

PORTABLE POWER SUPPLY UNIT — Model PS-21... Silent in operation, furnishes 115-Volt AC power to drive "Single System" or "Double System" Auricon Equipment from 12 Volt Storage Battery, for remote "location" filming. ★ $269.50



FILMAGNETIC — Finger points to Magnetic pre-stripe on unexposed film for recording lip-synchronized magnetic sound with your picture. Can be used with all Auricon Cameras. ★ $960.00 (and up).



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If it's profit you're after in the production of 16 mm Sound-On Film Talking Pictures, Auricon Cameras provide ideal working tools for shooting profitable Television Newsreels, film commercials, inserts, and local candid-camera programming. Now you can get Lip-Synchronized Optical or Magnetic Sound WITH your picture using Auricon 16 mm Sound-On-Film Cameras. Precision designed and built to "take it."

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section reports

The Atlanta Section met on January 10 at the U.S. Public Health Communicable Disease Center with an attendance of 41. Guest speaker was Dr. James Lieberman, Chief, Audio-Visual Section, Training Branch of CDC, whose subject was "Audio Visual Communication in Public Health."

Dr. Lieberman outlined in brief the growth of the Communicable Disease Center from its original inception in 1942 as an organization called Malaria Control in War Areas (MCWA). At the end of World War II, MCWA was disbanded and the Communicable Disease Center was formed.

The center has the primary function of prevention and control of infectious diseases and operates through state and federal health departments and foreign field stations in the lesser developed areas of the world.

It was noted that the CDC Audio-Visual Section was unique in that it is comprised of bio-medical (photomicrography), audio-visual (motion pictures and slide films) and photographic (still photography) personnel.

A number of film clips from various CDC audio-visual productions in black-and-white and color were shown in conjunction with Dr. Lieberman's talk. One film in particular which seemed to capture the attention of all present was a 16mm color close-up sequence showing the hatching of a mosquito from the larva to the adult stage. Films of this type are frequently used in demonstrating malaria control techniques.

Motion pictures, slides and slide films produced by CDC are used in orientation of personnel in the Public Health Service and as valuable aids in the Department of Health Mobilization for Civil Defense.

After the talk, members and guests were conducted on a tour of the Audio-Visual Section, which includes a graphic arts department, motion-picture processing laboratory, recording studio, silent and sound stages for the production of full-scale motion pictures.

The attendance at this meeting was one of the largest we have had with several out-of-state guests attending. We were fortunate in having with us SMPTE Section Vice-President Garland C. Misener.

Those present indicated that they felt that they had a better understanding of the importance of audio-visual communication in safeguarding the nation's health, following the meeting.—John C. Horne, *Secretary-Treasurer*, 404 Page Ave., N.E., Atlanta 7, Ga.

The Chicago Section met on December 6 at the Cinema Processors Laboratory and the CBS Studios with an attendance of 80.

This meeting consisted of an inspection tour of the facilities of the Cinema Processors Laboratory and WBBM-TV Studios. SMPTE members assembled at the former where they toured the facilities which are almost completely devoted to the processing of black-and-white 16mm news films for showing on CBS Television News shows. At this lab complete facilities are available for developing negative films making contact positive prints, positive developing, editing, splicing, and correlation with the TV script.

After completing this tour, the group walked three blocks to the CBS Studios for an interesting tour of that plant. Here major points of interest included the news and copy rooms, the TV control rooms, and the studio where the final TV news program is telecast. Of particular interest to the group were the projectors on which the news shorts were run, and how they were controlled with flawless timing during the news telecast.

Prior to the sessions, a meeting of the Board of Managers was held at the offices of Behrend Cine Corp., during which plans for the coming year's program and the SMPTE-sponsored course at Northwestern University were discussed.—Philip E. Smith, *Secretary-Treasurer*, c/o Eastman Kodak Co., 122 South Prairie Ave., Chicago 16, Ill.

Ninety members of **the Hollywood Section** met on December 20 at Moody Institute of Science in Los Angeles to hear three speakers. Edward H. Reichard, Consolidated Film Industries, discussed "Control Techniques in Film Processing"; John F. Scales, Armed Forces Radio and TV Service, explained the operations of the AFRTS; and Ralph Sogge, Magnasync Corp., explored "The Large and Small in Mobile Recording Channels."

Moody Institute provided the opening film for this meeting—their recently

completed production "Sense Perception, Part 2—The Limitation of the Senses." The technical excellence of the film, as well as the thought-provoking message, narrated by Dr. Moon, won the admiration of those present.

Mr. Reichard, chairman of SMPTE's Laboratory Practice Committee, described the history and contents of the Society's new book, "Control Techniques in Film Processing."

Mr. Scales described the radio and television network activities of the Armed Forces Radio and Television Service. By means of short-wave radio broadcasts beamed to all parts of the world from stations on both the east and west coasts, U.S. service personnel hear news, sports and music programs. Additionally, there are many other AFRTS radio stations around the world which receive programming by means of 12-in. microgroove records containing 33 minutes of program material.

There are currently 39 key television stations which receive programming by 16mm film and kinescope recordings made from the lines of the three major networks. Most of this recording is done by AFRTS personnel who have achieved a high level of quality by careful attention to detail.

Mr. Sogge described both the "Safari" mobile sound-recording studio in a trailer and the small, transistorized "Nomad" recorder, both of which are unique in the motion-picture field. The "Safari" employs a conventional Magnasync recorder in a mobile, 3-wheeled trailer housing, which also contains a 4-position mixer, batteries, a d-c to a-c converter, and storage space for microphones, cables, etc. The "Nomad" recorder, designed basically for the advanced amateur, attaches to popular 16mm cameras and receives its transport power by means of a flexible cable from the camera. Transistorized electronic circuitry and a novel hand mixer enable the operator to achieve great flexibility in usage.—Ralph E. Lovell, *Secretary-Treasurer*, 2554 Prosser Ave., Los Angeles 64.

The New York Section met on December 14 at the World Affairs Center Auditorium with an attendance of 92. Participating in the 8mm Symposium were: John Flory, Advisor on Non-Theatrical Films, Eastman Kodak Co.; Arthur J. Miller, Vice-President, Du-Art Film Laboratories, Inc.; Everett Hall, Vice-President, Fred Watson Associates; and Raymond Hennessy, General Manager, Fairchild Camera & Instrument Co.

Mr. Flory, opening the symposium, presented an illustrated report on the present status of both 16mm and 8mm films. In commenting on the future of 8mm sound films, he noted that about 8,000,000 8mm projectors are now in use, as against 600,000 16mm projectors, with production running at a rate of 800,000 8mm units versus 50,000 16mm projectors per year. He stated that the goal of industry should be to get 8mm sound films into the "paperback book" class as a tremendous force for the communication of knowledge.

Mr. Miller took up the question of laboratory problems in the production of 8mm films. Noting that it is the usual practice to use reversal films for production of 1 to 40 prints, he stated that for producing large numbers of prints, 100 to 1,000, multiple-width films such as 32mm (4–8-mm) or 35mm (4–8mm) would have to be used with specially prepared intermediate negatives. Mr. Miller felt that one of the most important factors in the production of quality 8mm sound films would be tighter tolerances on the part of both the film manufacturers and the processing laboratory.

The application of sound to 8mm films was discussed by Mr. Hall, who told of the several ways of applying the magnetic stripe to the film. He indicated that while an optical track has been produced he felt that the 8mm optical soundtrack was in the experimental laboratory stage and that magnetic sound reproduction was the answer.

Mr. Hennessy described the new Fairchild 8mm Sound Camera as a single-system amateur camera, motor driven at 24 frames/sec, battery powered, with a transistorized amplifier. He emphasized that the Fairchild camera was not intended as a professional tool, stating that the available 16mm equipment was better and more effective. An interesting note was that the Fairchild projector, developed and placed in production in less than a year, is designed to operate at 18 and 24 frames/sec since tests showed that 18 frames/sec was closer to the actual speed

of 16 frames/sec cameras. — James W. Kaylor, *Secretary-Treasurer*, c/o Moviclab Film Labs., 619 West 54 St., New York 19.

The New York Section met on January 18 at the World Affairs Center Auditorium with an attendance of 105. Guest speakers were: Walter P. Siegmund, American Optical Co., whose subject was "Fibre Optics"; and William Vinten, W. Vinten Ltd., London, England, who discussed "Television in Europe."

A great deal of interest was expressed in Dr. Siegmund's presentation of a subject which is not too familiar to the general membership. This was demonstrated by the fact that he was requested to extend his talk beyond the prescribed time limit, which he did. Applications of fiber optics in industry and medicine were given adequate consideration.

Mr. Vinten was a last-minute addition to the program and was unfortunately compelled to make his presentation brief. Color slides showing British facilities were of interest to the gathering.

No discussion was possible due to the over-extension of the original time allotted. —William H. Metzger, *Secretary-Treasurer*, c/o Ansco, 405 Lexington Ave., New York, N.Y.

The San Francisco Section met on December 13 for its annual nonengineering meeting to which members may invite their families and friends.

After cocktails and dinner the group moved to the Rita Theatre for the meeting at which Arthur Miller, Past President of the American Society of Cinematographers, was the guest speaker. Mr. Miller, who started in motion pictures in 1908, working for some of the first film producing companies such as Pathé and Rex, talked about his experiences in photographing early films, among them the serial "The Perils of Pauline," starring Pearl White.

Three times Mr. Miller has been awarded the coveted Oscar for his outstanding work as director of photography. He has more than 150 pictures to his credit, among them "The Song of Bernadette" and "The Keys to the Kingdom."

"The Golden Age of Comedy," an entertaining picture loaned to the Section by the Valiant Film Corp., was shown after Mr. Miller's talk.—Frank Mansfield, *Secretary-Treasurer*, 57 Stoneyford Ave., San Francisco, Calif.

The San Francisco Section met on January 10 at KGO-TV Studios with an attendance of 56. Charles F. Swisher, Video Application Engineer, Ampex Corp., was the guest speaker. His subject was the British Broadcasting Corporation.

Mr. Swisher, who spent considerable time at the B.B.C.'s White City studios in England, presented an interesting and informative forty-minute talk, which was followed by a sixty-eight minute award-winning documentary film, "This is B.B.C.," which was enjoyed by the audience.

A business meeting, cocktails and dinner at the Rathskeller Restaurant preceded the meeting.—Clifton R. Skinner, *Secretary-Treasurer*, Skinner, Hirsch and Kaye, 336 Funston Ave., San Francisco, Calif.

The Washington, D.C., Section reports that an unbelievable series of circumstances made possible "The Welcome to Washington" presented October 11, 1960 to the Army Pictorial Service Conference, The High Speed Processing Symposium of the Society of Photographic Scientists and Engineers and the Fifth International Congress on High Speed Photography.

The Section was host for this event presented in cooperation with the Motion Picture Service of the United States Information Agency. The cooperation of the Department of Defense and the United States Marine Corps permitted the participation of the United States Marine Band and the Drum and Bugle Corps of Marine Corps Headquarters.

Including participants, five hundred people witnessed this special meeting which was described as one of the best section meetings ever.

Turner B. Shelton, Director of the Motion Picture Service, USIA, spoke on the subject "How Foreign Audiences View The American Heritage." It was illustrated with special film footage consisting of excerpts from many USIS films shown throughout the world. (In itself the footage could be used as a demonstration reel of the outputs of many film producers and examples of film processing by many laboratories.)

Mr. Shelton traced the history of the United States, the events in history and the

contributions of the early settlers and their backgrounds from which America has drawn much of its strength. It was continually emphasized that freedom means responsibility. More important than what the foreign audience is told is what they discover for themselves in the various USIS motion pictures.

At the conclusion of his presentation, heretofore seen only at the University Film Producers Association convention at Williamsburg, Virginia, and the Edinburgh Film Festival, Mr. Shelton told the audience: "No day goes by but that we give thanks to you motion picture and television engineers for the magnificent work which you have done over the years to make the motion picture the powerful, faithful and responsible instrument of communication it now is.

"I was most impressed by the high technical quality of the motion pictures we made on President Eisenhower's tours of Latin America and Asia. Only you could know all the technical demands required for the coverage of the President's travels in very different places with different facilities and varying climatic conditions at almost every stop. And you know the high skill and art it took to make this photography quickly into finished documentary films worthy of their distinguished subject.

"Heads of governments have said many significant things about motion pictures. They agree that the motion picture, the moving image, is the most important and effective medium of mass communication. A few leaders—like Lenin, Stalin and Khrushchev—use pictures as a means of mass agitation and for promoting what is called the cultural offensive. But many of us have seen in the motion picture the means for communicating concepts of truth and progress and liberty, and for extending a message of international good will and cooperation to billions of people, literate or not.

Turner B. Shelton, Director, Motion Picture Service, USIA, guest speaker at the Washington Section's "Welcome to Washington" meeting.

"The motion picture is a massive force in the world of today and tomorrow. You, the scientists and technicians, you engineers have brought about its development to its present high state. I know you will advance it even further in the future."

The meeting was held in the beautiful new auditorium in the Department of State. This was one of the first meetings in it and the first to be held in the evening.

Captain Dale Harpham, Assistant Director of the Marine Band, was responsible for the beautiful and inspiring musical presentation which was the first part of the program. A special unit of the band played popular music preceding the formal opening of the meeting.

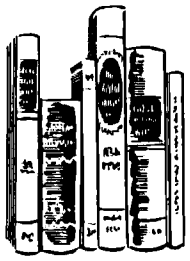
Dr. Albert McCartney prayed for God's blessing on our country, its leaders, and our meetings.

A Marine Color Guard and a 26-piece band presented the Colors and played the National Anthem.

Under the direction of Warrant Officer Chris Stergiou, the Drum and Bugle Corps staged one of their very few indoor appearances. Their showmanship and musical ability were enthusiastically enjoyed by the audience.

Sections Vice-President Garland Misener extended the Welcome to Washington on behalf of the Society, and Howland Pike, Chairman, extended it on behalf of the Washington, D.C., Section.

We are very grateful to the many people who helped and in particular to James Dunton, Department of Defense; Fernleigh "Red" Graninger and Charles Shinkwin, Department of State; General David M. Shoup, Commandant, and Lt. Col. W. L. Dick, A.D.C., The Marine Corps; Turner B. Shelton and Jack W. Evans, Motion Picture Service, USIA; and a special thanks to the Headquarters Staff of SMPTE for their splendid cooperation.—William E. Youngs, *Secretary-Treasurer*, 231 Mayflower Drive, McLean, Va.



books reviewed

Image Dissection in High Speed Photography

By J. S. Courtney-Pratt. Published (1958) in English by Verlag Dr. Othmar Helwich, Darmstadt, Germany. 11¾ by 8 in. 38 pp. incl. 111 Refs. Illus. Price $3.00.

The book has an excellent bibliography and it presents an updated review of image-dissection systems which have been used in high-speed motion picture photography. The author, Courtney-Pratt, is a recognized expert in this field. For the uninitiated he may have defined the term "image dissection" too briefly in the statement in the Abstract that "in (image dissection) the picture is divided up into a large number of small elements . . . . . The elements are spaced out so that (in at least one dimension) each is separated from its neighbors by a distance that is large compared with the width of the element . ."

In an unpublished paper by the reviewer, it is stated: "The term 'image dissection' may be parochial and used by only a few experts. Dissected images have proved of value in at least three widely different photographic applications: first, in color photography; second, in stereoscopic photography; and third, in high-speed motion picture photography.

"The general public has had most intimate contact with image dissection in the field of color photography. If color separation images can be recorded and viewed through 'minute focal plane filters,' (then) in a single gross area additive red, green and blue images can be completely intermixed. A given 'point' in the 'scene' may be locally recorded as three adjacent 'points', red, green and blue. When viewed, these points in the recreated 'scene' will appear as single points having proper color because of admixture of red, green and blue light.

"Historically, colored screen plates and colored starch grain plates may well have been the first use of 'dissected images.' A significant innovation in image dissection for color photography was accomplished by optical means in the Berthon (later Keller-Dorian) process when lenticular embossings were used to produce 'minute focal plane filters.' A major advance in 'image dissection' methods of producing color pictures resulted from the introduction of the multilayer subtractive color processes which permitted $\bar{z}$ axis separation rather than $\bar{x}$ and $\bar{y}$ displacements of point images."

(This paper, incidentally, went on to recite the possibility that if one could illuminate a scene in rapid succession first with red, then green, and finally blue light one could produce an extremely high speed three-image-sequence motion picture with an ordinary color still camera.)

The Abstract of the Courtney-Pratt book correctly states:

"Image dissection cameras have been built that allow short series of good pictures at rates of 10^7 or 10^8 per second of remote objects and at or near unity magnification, or that allow cinemicrography at 10^6 pictures per second at magnification up to 2000 ×. Alternatively, long series of, say 10^5 pictures, of lower resolution are possible. Cameras to achieve these results use only inert optical elements and mechanical components. The use of the deflecting image converter in combination with dissection principles allows one to take short series, of about 50 pictures, of 100-line quality at rates approaching 10^9 per second.

"Spatial resolution and positional accuracy are discussed, and time resolution and stroboscopic effects. The advantages and disadvantages are described, and a number of illustrations presented."—*Fordyce Tuttle*, Eastman Kodak Co., Camera Works, 343 State St., Rochester 4, N.Y.

Electrical Noise

By William R. Bennett. Published (1960) by McGraw-Hill Book Co., 330 W. 42 St, New York 36. iii-viii + 280 pp. incl. illus. and diagrams. 6 by 9 in. Price $10.00

Noise is being recognized as a major problem in the arts relating to communication and perception. It is really only noise when audible, but current usage still calls it "noise" when it is in an electrical signal, or in a mechanical displacement, or in a television picture, or even in a temperature fluctuation. There is a fast-growing literature on the subject, and the present volume is a part of it.

The book, by a distinguished contributor to the field, particularly its mathematics, covers especially the noise in the electrical signal used in communications. Much of the material is applicable to other aspects of noise also. The work is an outgrowth of a series of articles in *Electronics* magazine.

The author analyzes the generation of noise in various parts of communications systems, i.e., thermal noise, noise in vacuum tubes and semiconductors, and noise in the radio medium. He discusses noise testing and the design of low-noise equipment, and gives mathematical treatments of noise engineering. The book ends with general studies of noise effects in specific communications systems. The treatment throughout is presented with carefully worked out mathematics so that it is as basic as possible and yet requires only a moderate knowledge of theoretical physics. Much of it is designed around response through a tuned circuit, and Fourier analysis is reserved for the last hundred pages.

Among the interesting points covered is a fairly extensive discussion of the signal-to-noise performance of a maser. This is not exactly elementary, but the author has gone to great pains to keep it within bounds in its demands on the reader. While the matter may not be of pressing importance to most engineers now, it will become so for long-range television links in the future.

The engineer who has to cope with noise might wish that the author had included the study of more possible sources. Specifically he has not considered noise from contacts, noise induced from paralleling facilities, from static and lightning, from mechanical working of copper conductors, etc. Also he has given but little space to impulse noise.

For engineers, the work is primarily for such of them who look for a fundamental treatment of noise and its properties, and how to design systems in view of it — all with sound but not too advanced mathematics.—*Pierre Mertz*, 66 Leamington St., Lido Beach, L.I., N.Y.

Focal Encyclopedia of Photography (Desk Edition)

Edited by Frederick Purves. Published (1960) by Focal Press, Ltd., 31 Fitzroy Square, London, W.1. U.S. Publisher, Macmillan Co., 60 Fifth Avenue, New York 11. 1298 pp. 5½ by 8½ in. Line-cut illus. Price $6.95.

The 1956–7 edition of the *Focal Encyclopedia of Photography* has now been brought out in a desk edition of reduced size. According to the jacket, only the photographs (and some introductory pages) have been omitted, and the format slightly reduced. But the full text and all the pictorial diagrams have been retained. The price is about one-third that of the larger edition.

The earlier edition has been hailed as a monumental work, and this holds for the desk form. An editorial board of 52 members, including consultants on 14 broad subject divisions, is listed. Other contributors bring the total (announced on the jacket) to 197.

Certainly the wide range of topics is extraordinary for a one-volume work. Emphasis is laid on the viewpoint of the practicing photographer — as indicated by a heavy preponderance of consultants on "Applied Photography" and "Camera Subjects" in the 14 subject divisions.

As a result, there are many interesting articles on such subjects as fashion, glamour, theater, freelance, commercial, portrait, child, animal, night, marine, cloud, documentary and cold-weather photography, and there are artistic discussions on perspective, composition, pictorialism, picture quality and judging, color impact, make-up, etc.

But there also is a detailed treatment of photographic history, covering many distinguished names in the field. Further there is extensive treatment of photo-

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graphic exposure and processing, ranging from obsolete techniques to color materials. Except in a few cases, however, the discussion is not quite detailed enough to use as a guide in mixing chemicals nor are tables of film speeds given, and the list of flash bulbs has no identification by commercial code numbers.

There is a fairly extensive treatment of elementary optics, scattered among various specific subjects. These run to zoom (called in England "variable focus") lenses and Schmidt optics — but the discussion on such advanced topics is quite sketchy.

Some of the subjects that are really too ambitious are given summary presentations. Thus sound recording is given 2 pages; high-speed photography and cinematography, 5 pages; wide-screen and three-dimensional projection, 2½ pages; "vision," 2½ pages; "electricity" receives 1½ pages, largely confined to house supply and batteries and resistances; and "photography" 15 lines, on the history of the use of the term.

On "projection" (still and cinematographic), it is interesting to note that British ideas of "ideal" screen luminance for private houses in complete black-out, run from 1 to 2 foot lamberts; for daylight and average curtains, 2 to 5 footlamberts, and for cinemas, 9 to 15 footlamberts, the latter being more in accord with our own ideas.

A reader will of course always question the choice of specific items. One can wonder, with space at so high a premium, at the inclusion of such topics as switches, packing and sending photographs, insurance, reproduction fees, and trade in photographic goods.

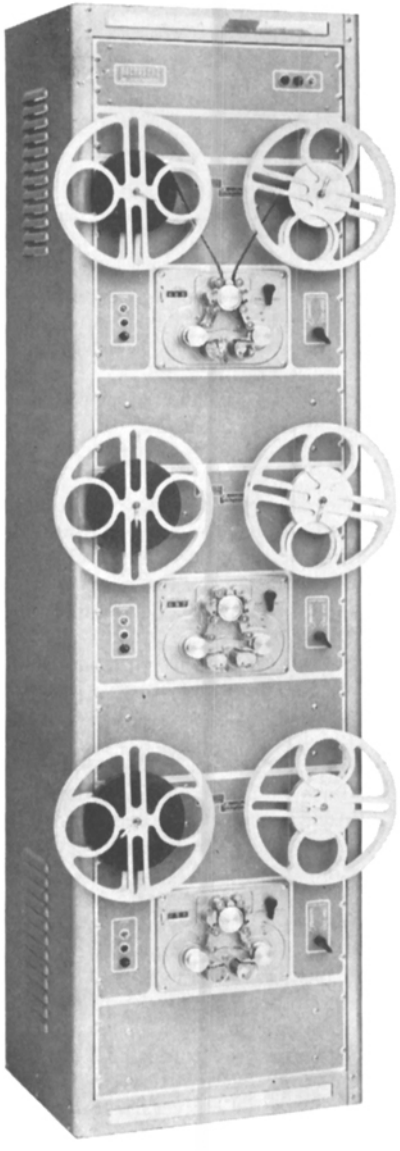
All in all, however, this should be an extremely handy book for general reference.—*Pierre Mertz*, 66 Leamington St., Lido Beach, L.I., N.Y.

Grundlagen der Breitwand-Filmverfahren

By Dr. E. M. Goldowski. Published (1959) by Fotokinoverlag Halle, Halle (Saale), Germany. (Translation of Russian original published Moscow 1956.) 6 by 8¼ in. 148 pp. 45 illus. 22 tables. Price DM 10.80.

This book was originally issued in Moscow, Russia, in 1956 and then translated into German for the present release in 1959. In the process, some of the timeliness of the contents has been lost. The book is, however, a good summarization of practical and historical wide-screen processes going as far back as 1895.

Film width systems discussed include both 35mm and 70mm. The author analyses objectively the overall merits of modern widescreen systems that have come to use since 1952. He goes into considerable detail on aspect ratios, optimum seating arrangements and good viewing conditions. He discusses the merits of curved screens, and renders a very interesting opinion on light distribution and its permissible falloff at the sides of the screen. A full chapter covers flicker and its perception with particular regard to wide screens and their correspondingly wide viewing angles. Numerous curves and tables enhance the text, and the mathematical treatment is



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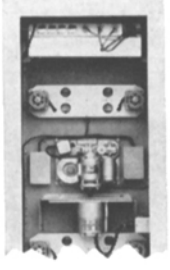

Rear interior view of Selsyn motor electrical interlock

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plain and clear. Recent advances in magnetic multichannel sound reproduction are briefly covered. The book closes with a description of panoramic projection, such as used in Cinerama.

A bibliography shows other sources of information, mostly of Russian, French, British and German origin.

The book offers thorough coverage of wide-screen film processes, much of the material being of a type not previously gathered under the general subject of wide screen. Of significant value is the fresh approach offered by the Eastern European origin of the material.—*Willy Borberg*, GPL Div., General Precision, Inc., Pleasantville, N.Y.

Eliminating Man-Made Interference

By Jack Darr. Published (1960) by Howard W. Sams & Co., 1720 E. 38 St., Indianapolis 6, Indiana, Paper-bound. 160 pp. illus. 5½ by 8¼ in. Price $2.95.

This book is intended mainly as a guide to the service technician dealing with noise and interference problems in radios, television sets, electromechanical apparatus, etc., in tracing such interference to its source and then eliminating or subduing it. Many of the illustrations (173 in all) show the appearance on TV screens of the various types of interference that plague set owners. The book is divided into 12 chapters, including a chapter on Case Histories and another on the FCC and Its Role in Interference Complaints.

Nontheatrical Films — Interim Report No. 2

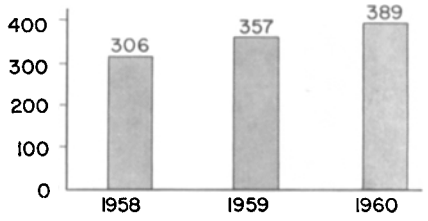
By JOHN FLORY
and THOMAS W. HOPE

This Second Interim Report brings up to date (as of January 1, 1961) and amplifies selected statistics contained in the authors' comprehensive study of the nontheatrical field, "Scope and Nature of Nontheatrical Films in the United States" published in the June 1959 issue of the Journal *(pp. 387–392). It supersedes the Interim Report published in the January 1960 issue of the* Journal *(p. 70).*

ONCE AGAIN, an annual estimate of the U.S. nontheatrical film and audio-visual field shows significant growth. A $389 million expenditure for 1960 represents a 9% increase over the 1959 readjusted total of $357 million (Fig. 1).

The past year was noteworthy as the second year during which the full impact of the National Defense Education Act was felt. Increased concern with the aim of improving the scope and quality of the educational system was reflected in increased emphasis on educational film and related media.

This report has been prepared by John Flory, Advisor on Nontheatrical Films, and Thomas W. Hope, Assistant Advisor, Eastman Kodak Co., 343 State St., Rochester 4, N.Y.



(In millions of dollars)

Fig. 1. U.S. audio-visual expenditures in 1960 reach $389,000,000.

Educational film and AV expenditures for 1960 were ahead of the previous year by more than 32% (Table I).

New Information Available

Newly acquired information has made it advisable to revise upwards the earlier statistics on dollar expenditures shown in last year's Interim Report.

New data are now available on three facets of the field—filmstrip projectors, university-produced educational films, and 16mm film library distribution. Accordingly, all of the Tables included in this report have been revised to give valid comparisons on an annual basis.

Sales of filmstrips for education and filmstrip projectors especially reflected the impetus given to newer educational media by the NDE Act (Table II).

Filmstrip producers and distributors throughout the country are reporting greatly increased filmstrip sales during the past twelve months. Unit sales of filmstrip projectors were up 59% during the same period.

Preliminary findings of a study being conducted for the U.S. Office of Education by the University Film Foundation indicate that today nearly 100 universities, colleges and public school systems in large cities are regularly engaged in producing motion pictures. Based on these preliminary returns, it is estimated that the total annual educational output of these nonprofit institutions is considerably greater than heretofore generally realized.

The third major factor in the revision of previously evaluated total expenditures is in the area of film distribution. An analysis of the latest U.S. Office of Education directory of 16mm libraries* reveals that educational institutions and business organizations operate more than half of the libraries (Table III).

Although this government study lists 3660 film libraries, a figure of 5000 would today probably be a more accurate estimate. This would take into consideration normal growth of the field, in addition to hundreds of libraries asking to be excluded from a national directory because they are obliged to restrict service to users within their own school systems.

* U.S. Office of Education, "A Directory of 3660 16mm Film Libraries," Supt. of Documents, Washington 25, D.C., 1958.

Table I. Who Spends AV Money? A Three-Year Comparison (in millions).

	1958r	1959r	1960	1960 vs. 1959
Business and Industry	$155	$178	$184	+3.4%
Education	55	78	103	+32%
Government	56	59	59	no change
Religion	19	19	18	−5.2%
Civic, Social Welfare, Recreation, etc.	14	15	16	+6.7%
Medical	7	8	8	no change
Totals	$306	$357	$389	+9%

r = revised Jan., 1961.

Probably over 19,000 persons are employed by the estimated 5000 nontheatrical film libraries. The figures for distribution expenditures, in this Second Interim Report, now take into account the salaries of these persons (see column labeled "Distribution" in Table IV).

Accordingly, 1958 and 1959 estimates for total film distribution expenditures have been revised upwards. Thus 1958 was raised from $38 million to $78 million, and 1959 from $42 million to $85 million (Table V).

Type of Information Analyzed

Table IV gives the detailed analysis of 1960 for the principal basic categories of "Business," "Education," "Government" and "Religion." The specialized category of "Medicine" encompasses data that would otherwise be allocated to the fields of "Business," "Education" and "Government." Medical expenditures, therefore, are not duplicated elsewhere.

It is hoped that in future years, detailed statistical information can be compiled for other specialized fields, such as "Agriculture" and "Home Entertainment."

Table II. U.S. Filmstrip Projector Sales (units estimated).

	Unit sales	Percentage increase
1958	120,000*	—
1959	131,400	10%
1960	210,000	59%

* Based on 1958 U.S. Census of Manufacturers.

Table III. Nontheatrical Film Libraries (Est.) for 1958.

Educational	1400
Business and Industrial	1150
Governmental	560
Commercial Dealers	550
Civic, Social Welfare, etc.	500
Medical	440
Religious	400
Total	5000

Numerous questions have been asked as to what data are included within each of the five major types of expenditures. They are:

Production — motion pictures, filmstrips, and sound slidefilms

Table IV. Estimated 1960 Expenditure Factors by Categories (in millions).

	Production	Release prints	Distribution	Mot.-pic. equipment	Other AV	Total	Percentage change from 1959
Business and Industry	$ 73.8	$38.6	$35.0	$ 7.5	$29.1	$184	+3.4%
Education	14.0	9.7	26.3	19.8	33.2	103	+32.1%
Government	19.3	9.4	13.6	3.2	13.5	59	no change
Religion	3.4	2.8	6.7	2.6	2.5	18	−5.2%
Civic, etc.	1.5	1.5	10.1	1.9	1.0	16	+6.7%
Medical	3.0	2.0	1.3	1.0	0.7	8	no change
Totals	$115	$64	$93	$36	$80	$389	+8.9%

Table V. How the Money Is Spent: Estimated Nontheatrical Film and Audio-Visual Expenditures by Type of Product (in millions).

	1958r	1959r	1960	1960 vs 1959
Production	$100	$115	$115	no change
Release Prints	49	57	64	+12.3%
Distribution	78	85	93	+9.4%
Motion-Picture Equipment	29	32	36	+12.5%
Other Audio-Visual	50	68	80	+17.4%
Totals	$306	$357	$389	+9%

r = revised Jan., 1961.

Release prints — motion pictures, filmstrips, and sound slidefilms

Distribution — commercial and audio-visual dealer film rentals and sales; sponsored film distribution; and school, governmental, religious, medical, social service and public libraries.

Motion-picture equipment — 16mm sound projectors, cameras, and production equipment such as lights, sound recorders, etc.

Other audio-visual equipment and materials — sound slidefilm, filmstrip, 2 × 2-in. slide, 3¼ × 4-in. slide, overhead and opaque projectors; projection screens; projection stands; materials for making slides and overhead transparencies; and a great number of other sundry items.

Film Production and Projectors

Motion-picture production dropped off slightly in 1960 (Table VI) while filmstrip production increased, according to reports. The dollar expenditure for all production, however, stayed about even (Table V).

Sales of 16mm sound projectors rose considerably compared to the previous year. Although it may be several months before final figures are available, preliminary reports indicate that total sales for 1960 were approximately 50,000 of which 45,000 were for the domestic market. The purchases, by major categories, show that America's schools absorbed 60% to 65% of the new p o-jectors.

This year for the first time an estimate of the number of 16mm sound projectors in use in the home has been included in the total for the United States (Table VII).

Taken into account in determining the year's increase in the number of projectors in use (net gain) are those machines which have worn out or otherwise become obsolete. In addition, the factor of second-hand projectors is included — primarily in the areas of "Religion" and "Home." It is estimated that there are 727,000 16mm sound projectors in use as of January 1, 1961.

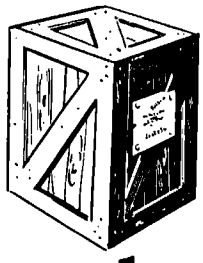
Considering the entire population of the United States, there is now one projector for every 250 persons.

While the percentage of projectors going to schools increased in 1960, obviously due in part to the NDE Act, the ratio of buying by different kinds of schools remained about the same as in 1959, except that public secondary schools purchased 4% more than the year before (Table VIII).

A new development appeared during the year in the form of the 8mm sound projector. It is too early to include any data on it in this report.

More Data Needed

It is felt that to appraise the audio-visual field more accurately in future



new products

(and developments)

Further information about these items can be obtained direct from the addresses given. As in the case of technical papers, the Society is not responsible for manufacturers' statements, and publication of these items does not constitute endorsement of the products or services.

Erratum: New Products, Oct. 1960, p. 780 — A new high-vacuum tube, type WX-4047, Westinghouse Electric Corp., Electronic Tube Div. Line 6 refers to the tube as "the Astracon image amplifier." This is incorrect. The Astracon is (as also stated in the item) the subject of a paper, "The Astracon Tube and Its Application to High-Speed Photography," by A. E. Anderson and G. W. Goetze, which was presented at the 5th International Congress on High-Speed Photography, but the Astracon and the WX-4047 are two different tubes. Both tubes were recently developed by the Electron Tube Division of Westinghouse Electric Corp. Except for the misnomer in Line 6, and the reference to the 5th Congress paper, the item describes the WX-4047.

Tiros II, the successor to the weather-watching satellite, Tiros I (*Jour*, pp. 272–273, Apr. 1960), has been designed to incorporate a new orientation-control system and newly-developed infrared instruments to measure the emission and reflection of solar heat by the Earth and its atmosphere. These improvements were developed following study of the behavior of Tiros I. Both satellites were developed by the Astro-Electronics Div. of the Radio Corp. of America for the National Aeronautics and Space Administration.

Behavior of the busy little Tiros I, faithfully sending cloud pictures (nearly 23,000 of them) to Earth during its three months life in Space, varied in certain significant ways from that predicted for it when it was first tossed into Space. Most noticeable mannerism was its tilt as it gradually leaned away from the predicted position of its axis. This phenomenon was found to occur under the influence of the magnetic field surrounding the Earth.

In Tiros II the magnetic forces are harnessed by generating a controllable magnetic field around the satellite by a coil of wires circling it. Interacting with the Earth's magnetic field, this device may be compared to an invisible hand which observers on the ground can use to tilt the satellite in the right direction to achieve a more advantageous angle for the sensors and the solar power supply. The infrared package, developed by NASA, includes a five-channel detector to measure selected portions of the infrared spectrum around the Earth. Tiros II weighs only 280 lb. Associated with the cameras are two specially-designed RCA tape recorders to store the TV pictures until the "readout" command is given from a ground station.

An underwater vehicle equipped with four TV cameras has been given the nickname of RUM, a designation which carries no implication of liquid spirits but is short for "remote underwater vehicle." The vehicle, constructed by the Office of Naval Research, was developed by the University of California's Marine Physical Laboratory of the Scripps Institution of Oceanography. Crawling along the ocean's floor at a rate of three miles an hour at depths down to 20,000 ft, RUM is equipped with a mechanical arm ending in a monstrous claw that can clutch and raise marine specimens weighing as much as 1500 lb. The "eyes" of this man-made monster — which can remain submerged for months — are four vidicons (RCA-7038, 6¼ in. long and 1 in. in diameter) and associated camera equipment.

The cameras are housed in a steel case constructed to withstand the terrible pressure at the bottom of the sea. Mercury vapor lamps, also enclosed in pressure cases, illuminate the dark underwater scenes for a distance of about 30 ft. Signals from the cameras, designed by Orbitram Co., of Lakeside, Calif., are relayed to a monitoring and control station on land via a five-mile length of lightweight coaxial cable. Each camera is equipped with two remotely-controlled motors for adjustment of iris and focus.

Reports from Eastman Kodak Co. on new translating machines indicate that the astonishing storage potential of contemporary photographic techniques has extended almost beyond imaginable limits the possibilities of translating machines in terms of speed and accuracy. A machine currently in use by the Air Force translates from Russian to English at the rate of 40 words per minute, using special glass discs coated by Eastman Kodak with high-resolution photographic emulsion. A 55,000-word vocabulary is stored in a ⅜-in. channel printed on a 10-in. glass disc, but modifications of the machine will permit it to translate more than 2400 words per minute from a vocabulary of about 500,000 words stored on the disc. Even the half-million-word vocabulary barely scratches the surface of photography's information storage capacity, according to Kodak scientists. In translating, the storage channel is scanned vertically and horizontally by electronics until

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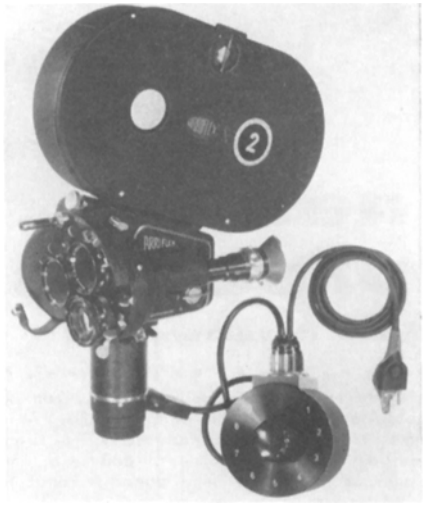
the machine matches a Russian word — fed in with punched tape — to its English equivalent, which is then printed automatically on a typewriter.

It has also been stated by Kodak research personnel that a high-resolution film, exposed with present optics, is capable of storing 600 million bits of information per square inch. For example, the entire contents of the *Encyclopedia Britannica* could be stored on a piece of film only four inches square.

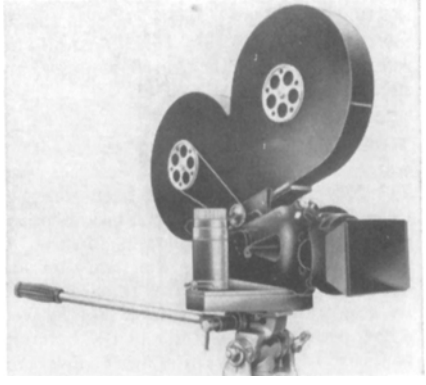
A video band recorder/reproducer, an addition to 3-M's CM-100 series, has been introduced by Minicom Division, Minnesota Mining and Manufacturing Co., 2049 S. Barrington Ave., Los Angeles 25, Calif. Designated the CM-114, it records and reproduces 14 tracks of both analog and pulse signals on 1-in. magnetic tape. Frequency response on each track is 400 cycles to 1.0 mc at 120 in./sec. The machine has a selection of six tape speeds ranging from 7½ to 120 in./sec and features higher frequency response at lower tape speeds. It is designed to incorporate both a receiver and a scope if desired for predetection recording as a possible application. This type of recording may be used in missile operations where a flight is simulated by feeding the original data back to the receiver in the missile, and a checkout criterion provided for a recording ground station.

A video recording system available with either 16mm or 35mm camera for synchronized sound recording on film or magnetic tape is described in a 4-page illustrated brochure available upon request from GPL Division, General Precision, Inc., 63 Bedford Rd., Pleasantville, N.Y. Described as producing "professional quality interlaced film," it is recommended by the manufacturer for production on 16mm films for advertising agency previews, client or sponsor presentation and classroom projection. New features of the system are spot wobble, to provide smoother picture texture, and an alternate synchronizing generator to minimize synchronization irregularity of signals from varying sources.

A new model of the Arriflex 35, designed especially for instrumentation and documentation uses, has been announced by Arriflex Corp. of America, 257 Park Ave. South, New York 10. Designated the Arriflex 35-IIB-S, the camera is equipped with a balanced movement and a 32-v d-c motor for operation to 80 frames/sec. The motor is equipped with an external rheostat for speed control, with a circuit designed to maintain high torque at lower speeds. Equipment includes a tachometer calibrated to 80 frames/sec. The camera is priced at $1995 with special motor and speed control, but without lenses and magazines.



Arriflex has also announced a transistorized, governor-controlled motor for the Arriflex 35 designed so that only a relatively small current passes across the centrifugal switch of the governor mechanism, the heavy main current being controlled by the transistor. Designated the 9A773-T, it is priced at $190. A new 24–28-v d-c Variable Speed Motor, 9A744, is designed to drive the Arriflex 35 at frame rates ranging from 12 to 36 frames/sec. Priced at $160, it is expected to be useful in military and industrial applications.

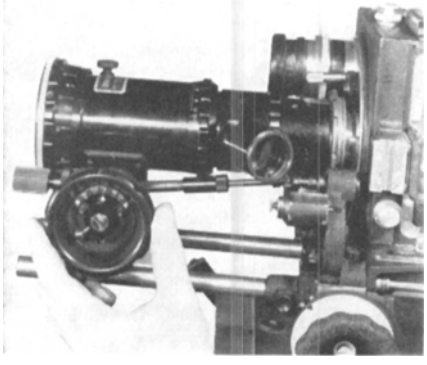


The CECO Vari Speed Motor Base, No. 75400, for the Arriflex 35 mm Vari Speed Motor is a product of Camera Equipment Co., 315 W. 43 St., New York 36. The new motor base is designed to locate the motor in an upright position adjacent to the camera, this permitting base mounting without the use of a Hi-Hat. This arrangement is planned to lower the center of gravity by bringing the camera closer to the tilt pivot point of the tripod, thus creating a favorable condition for steadier tilting performance. The motor base is priced at $300.

The backward curving field of the new Super-Farron Lens enables their use as flat-to-flat, flat-to-convex or convex-to-convex imaging systems. Used in this manner the system is said to have an effective efficiency of T/0.5. The lens is produced by Farrand Optical Co., Bronx Blvd. & E. 238 St., New York 70. The abbreviated story in the June 1960 *Journal* (p. 460) illustrated a 1:1 relay system

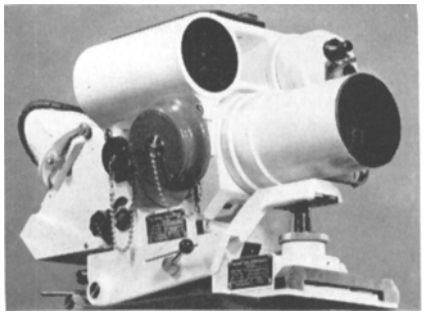
comprising two of the lenses imaging a flat field to a backward curving field.

A miniaturized wide-angle lens with a 180° field of view, called the Traid 735 Periphoto, has been designed and manufactured by Pacific Optical Co. for Traid Corp., 17136 Ventura Blvd., Encino, Calif., especially for use in drone scoring systems. The lens measures $1\frac{3}{4}$ in. and weighs $5\frac{1}{2}$ oz. Other specifications include equivalent focal length, 6.51mm; relative aperture, $f/6.3$, fixed; flange focus distance, 1.500 in.; 180° field of view; resolution of 80 lines/mm on axis; color corrected for Daylight Kodachrome; fixed focus, 60 in. to infinity; 67% distortion at 75°, 23% at 45°; round image, 0.720 in. in diameter. The lens is priced at $885.



A 38–154 Zoom Lens Attachment, designed to support the weight of the lens, has been announced by Camera Service Center, 333 W. 52 St., New York 19. Features include two knob controls to adjust the North-South, East-West movement of the lens, thus accomplishing accurate line-up of the crossline in the lens reticle with the crossline in the camera. A large knob controls the zoom action to increase zoom smoothness. This knob contains a built-in focal length stop and lock-off to permit the operator to select the desired amount of zoom. A driveshaft to simplify follow-focus runs from the camera control to the follow-focus gear located on the front of the lens. The attachment is priced at $480. (In addition to the manufacture of special motion-picture equipment, this firm has recently enlarged its rental facilities and added a sales department.)

A high-speed stereo-camera and projection system is being designed by Benson-Lehner Corp. for the Naval Weapons Laboratory, Dahlgren, Va., under an $83,000 contract. Delivery is scheduled for March, 1961. Combining high-speed photography with stereo photography, the new camera is designed for speeds of more than 12,000 frames/sec, arriving at full sync speed within 100 ft of film. Also provided is a means for varying the interaxial distance between the taking lens, so that the degree of stereo desired can be selected for the distance of a given subject. Interaxial baseline can be varied from 13 in. to 4 ft, providing stereo from 15 ft to infinity. Providing a three-dimensional record, the new system is expected to have important applications in many areas of research.



A Sighting Telescope, Model WS-10, with Mounting Compound and Acquisition Aid has been announced by Wollensak Optical Co., Rochester, N.Y. The telescope, a monocular refracting-type, employs interchangeable eyepieces of 10-power or 20-power which mount at a 45° angle to the main objective axis. The Acquisition Aid is designed to provide visual superposition of the area under surveillance with a radarscope display. A cushioned headrest is provided for the proper head position of the operator relative to the eyepiece. Hinged port covers at the sides of the headrest open to expose the diopter scale of the eyepiece for focusing. A replaceable reticle is provided with variable-intensity illuminations for night operation. The telescope is designed for use under extreme climatic conditions while withstanding the effect of vibrations created by power-driven tracking mounts. The body of the telescope is sealed against moisture and is provided with a chamber for the mounting of two silica gel desiccant cartridges of the screw-in type. The exterior is finished in white enamel to minimize the rise of internal temperature in direct sunlight. The telescope is presently being supplied to the Armed Forces and missile manufacturers for tracking objects in flight, boresighting, industrial aligning and measuring.

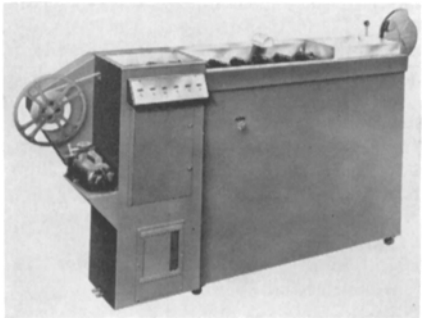
A line of time-resolved spectrographs is undergoing advanced prototype testing in the Instrument Division, Beckman & Whitley, Inc., 993 E. San Carlos Ave., San Carlos, Calif. The instruments are expected to permit temperature measurements in the 2000—20,000-K region, of events resolved in time up to 3×10^{-8} sec, and with wavelength distribution through the 2000—9000-A range. Photographic recording could be made of events in these classes by coupling a Beckman & Whitely sweeping-image camera to one of the spectrograph instruments. These spectrographs are expected to be primarily useful in the measurement and analysis of high-speed radiated transients, in work on the composition of molecular species, or in the investigation of concentration temperatures.

Automated and miniaturized motion-picture projection equipment has been developed by Reevesound Co., a subsidiary of Reeves Soundcraft Corp., for Inflight

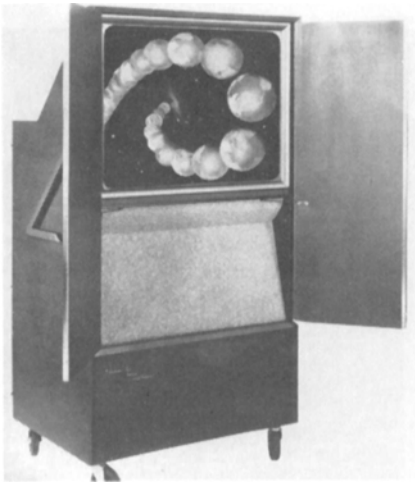
Motion Pictures, Inc., of New York, for showing previews of feature films on transcontinental flights. The idea is being tested by Trans-World Airlines. The projection equipment is said to be capable of showing up to 135 minutes of 16mm film from a single reel.

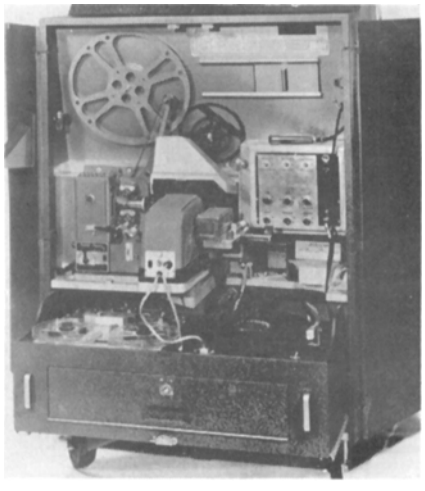
The Protect-O-Film processing machine for cleaning and applying antistatic protective coating to 16mm motion-picture film is a product of Harwald Co., 1245 Chicago Ave., Evanston, Ill. The firm has also announced new features on the Inspect-O-Film Model "U" machine. The processing machine treats the film by applying a cleaning-processing fluid by means of tapes moving in the direction opposite to that of the film. The fluid flow is electronically controlled. The machine is priced at $995. The Model "U" is used in the inspection, editing and cleaning of film. It has been improved by a new speed control and braking system, involving three motors controlled by direct current.

A method of identifying and sealing strips for developed 16mm film, developed by Goeffrey H. Botton, Manager of Machine Accounting, General Film Laboratories, Hollywood, eliminates the necessity for handwritten identification. With the new system, the firm's Order Department uses a "Request for Labels" form, showing title, quantity, etc., which is sent to the Machine Accounting Department. Here the cards are punched, and pin-feed, pressure-sensitive labels are imprinted on the IBM 407. The film reel label is then applied to the leader strip and the film is sealed until ready for projection.

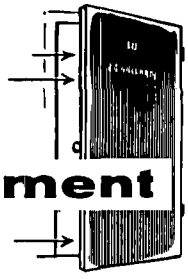


The Allen 16mm Reversal Processor Model 700 is manufactured by Allen Products Inc. and distributed by S.O.S Cinema Supply Corp., 602 W. 52 St., New York 19. The newly announced machine is designed for processing 16mm reversal film and is convertible for negative or positive. Features include daylight loading of 1200-ft reels, variable-speed drive, bottom tank drains and plumbing with backflushing system, refrigeration and recirculation. The film passes through nine tanks and drybox, all positions in-line, at speeds up to 20 ft/min. The machine is priced at $2995.





The Bi-Fi, a rear-projection console housing several equipments that can be operated individually or in combination, has been announced by Friddel Manufacturing Co., P.O. Box 721, Galveston, Tex. Designed for educational and industrial uses, it features a single control panel for "fool-proof" operation, and a 36-in. TV screen. Contained in the console are: the "Exhibitor" (No. 600) equipped with a 16mm projector for a conventional or for a six-minute continuous repeat program. It also incorporates a preamplifier and tape deck, with a programmer built into the amplifier for adding impulse to tape along with audio for the 40-slide repeater projector (45-w); the "Workhorse" (No. 100) with a 16 mm projector, 35mm filmstrip projector, 26-slide changer with automatic or remote control (25-w); the "Audio-Visual Center" (No. 500), equipped with 16mm projector, 35mm filmstrip projector, 36-slide changer (automatic or remote), turntable, preamplifier and tape deck, microphone and programmer (25-w); and the "Linguist" (No. 601) for teaching languages, equipped with projector for 35mm filmstrips and for 2 by 2-in. slides, automatic or remote control, preamplifier and tape deck, four-speed turntable, microphone and programmer (12-w). An Induction Wireless Receiver (No. 700) may be used in a classroom at the students' desks for the reception of audio. The receiver is equipped with amplifier and microphone. The console is 60 in. high, 25½ in. deep, and 32⅜ in wide. It operates on 110–120 v, 60 cycles a-c.



employment service

These notices are published for the service of the membership and the field. They are inserted three months, at no charge to the member The Society's address cannot be used for replies.

Positions Wanted

Motion Picture Lab Manager and Color Process Engineer. Wide film manufacturing plant experience and subsequent field experience in setting up and operating color processing labs in the East and process development. Familiar with quality control procedures, chemical analysis, sensitometry of films, color print timing, color printing, duplicating and related optics. Also practical knowledge of the cinematographic arts and lab-shooting-company relations. Qualified also to set up and manage industrial department of photography. Several patents. College Grad. Desires West-Coast location. Reply Box No. 691, Hollywood, Calif.

Photo Coordinator Motion-Picture Cameraman. Experienced in most phases of instrumentation, data gathering and motion-picture production photography. Married, 29 yrs old, will relocate. Active member of SMPTE. Resume on request. Marvin Atwell McCoy, 3708 N. 23rd St., Arlington 7, Va.

Film and AV Executive. Presently Audio Visual Manager for major corporation. Extensive overseas experience writing, directing and producing educational, documentary, public relation films. Experienced in almost all fields of film production and AV media preparation and production. Seeking position with challenge and future. Age 36, Married, M.A. in Cinema. Write: John H. Humphrey, 72-10 41st Ave., Jackson Hts. 77, N.Y.

Cameraman-Director. Available for forthcoming Confederate Centennial assignments throughout the entire central and deep south. Located near actual battlefields and areas where Centennial will be staged. Also available for assignments to Smoky Mts., Blue Ridge Mts., Cumberlands, Mississippi Delta and Okefenokee areas. Twenty years experience in high budget documentary film production. John O. Evans, 2313-B Starmount Cir., S.W., Huntsville, Ala.

Engineer-Administrator. Have designed, set up and managed motion-picture laboratories in color and black-and-white. Familiar with full range of operations and equipment in a laboratory. Graduate M.I.T.: M.S. in Chemical Engineering, B.S. in Business and Engineering Administration. Several languages. Desire challenging position. Apt. 2J, 130 Orient Way, Rutherford, N.J. WEbster 3-3238.

Positions Available

Cameraman. Experienced 35mm color filmstrip cameraman. Salary open. **Printer for 35mm Color Film.** Experienced on Bell & Howell continuous loop printer or step printer. Salary open. Send resume to W. Jones, 234 West 13 St., New York 11.

Technician. Experienced technician to be assistant to chief engineer. No papers or degrees needed. Must be conversant with both radio and television and willing to supervise and train junior technicians. Contact Conrad Lavigne, CFCL Box 620, Timmins, Ont., Canada.

Color Negative Printer Control Man. Photographic background, with color printing experience. Flexible hours. Paid benefits. New York City. CIrcle 6-5606. Mrs. Goldenberg.

Representative. Graduate student working towards doctorate in Educational Television, receiving M.A. in motion pictures June 1961, B.A. in theater television, will be touring Latin America covering 64 cities in 20 countries and contacting over 100 television stations and 200 producers of newsreel, documentary, educational, television and feature films. Tour will be repeated each summer for three years. Also background three yrs electrical engineering and four yrs sales. Will represent your company and translate brochures into Spanish or Portuguese. Don Stewart, 2005 Sixth St., Santa Monica, Calif. EX 9-6795

Equipment Maintenance Men. Experienced in service and repair of one or more of the following types of equipment: Moviolas, sound projectors, Mitchell, Bell & Howell and Arriflex cameras, lens testing and calibration, audio and electronics for magnetic recorders and amplifiers, lighting and electrical equipment, machine shop. Write fully—experience and salary required. A. Florman, Florman & Babb, 68 West 45 St., New York 36.

Journals Wanted

These notices are published as a service to expedite disposal and acquisition of out-of-print Journals. Please write direct to the persons and addresses listed.

Jan., July, Sept. and Nov. 1949; Jan and Feb. 1950. Century Lighting, Inc. (Mrs. Levine), 521 W. 43 St., New York 36, N.Y.

Feb., Mar., Apr., June 1934. Mrs. Janet Van Duyn, Librarian, CBS Laboratories, 227 High Ridge Rd., Stamford, Conn.

Journals—Bound volumes. Write: S. P. Solow, Consolidated Film Industries, Inc., 959 Seward St., Hollywood.

Transactions 6 and 9 ($15 each offered). W. W. Hennessey, RFD #2, Pound Ridge, N.Y.

Jan. 1938, Jan. 1949. (Many other issues are available for trade.) Dept. of Cinema, Univ. of Southern Calif., University Park, Los Angeles 7. Att: Herbert E. Farmer.

Transactions No. 1, 1916 ($5 offered); No. 6, 1918 ($10 offered); No. 7, 1918 ($10 offered). James G. Barrick, 15726 Fernway Ave., N.W., Cleveland 11, Ohio.

Mar. 1939, May 1940, July, Feb. 1942, July 1949. V. E. Patterson, 2 North 30th St., Phoenix, Ariz.