

April 1971 issue of *IEEE Spectrum*. The paper covers the entire field, beginning with descriptions of the properties of a musical tone and concluding with a section on electronic music by digital computer. He covers such subjects as music synthesis of conventional sound sources; monophonic, stereophonic and quadraphonic sound reproducing systems; synchronized magnetic tape recorders and music synthesis by the generation and modification of original sounds. He points out that "analog and digital synthesizers can produce any tone whatsoever, regardless of whether it has ever been produced before or not." He emphasizes, however, that the composer and not the computer is responsible for the composition. He noted that Charles Wuorinen, who won the Pulitzer Prize for his composition *Times Encomium*, produced his work on the RCA Electronic Music Synthesizer. (The synthesizer was developed under Dr. Olson's direction.)

A Fellow of the Society, Dr. Olson received the Samuel L. Warner Memorial Award in 1950 for outstanding achievements in audio engineering.

**Shelley Herman** has joined Allison Research, Inc., 7120 Sunset Blvd., Hollywood, CA 90046. His responsibilities will include market research, support of marketing effort and the establishment of a distribution network. Mr. Herman was formerly with United Electronic Recording Industries. Allison Research manufactures the Kpex noise-reduction system.

**Harry A. Young** has been appointed Sales Manager, Motion-Picture Div., Quad-Eight Electronics, 11810 Vose St., North Hollywood, CA 91605. In his new post he will be responsible for the marketing of Magna-Tech film equipment and Quad-Eight consoles and systems.

**C. L. (Chuck) Zichterman** has been appointed Director of Marketing of the Film Printing Div. of Peterson Enterprises, Inc., 1840 Pickwick Ave., Glenview, IL 60025. He was formerly Regional Sales Manager for the Professional Equipment Div. of Bell & Howell. In his new post he will be responsible for all marketing activities in the United States.

**Leslie Osliff** has been appointed to the newly created post of Commercial Sales Manager of Rank Film Laboratories Ltd., Denham, Uxbridge, Middlesex, England. In 1967 he created the Laboratory's liaison department that is geared specifically to the tight scheduling of film transmission by the major ITV program companies. He was head of the department until his present appointment. In the new post he will be responsible for ensuring the sales continuity of all television commercials processed at Denham. New head of the independent television liaison department is Frank Cheshire.

**Robert W. Forster** has been appointed Vice-President of the Government and Industrial Div. of Technicolor, Inc. He will continue as General Manager of the division's Florida operations at

Cape Kennedy which provide NASA and the United States Air Force with photographic support services. Mr. Forster joined Technicolor at Cape Kennedy in 1965 as a camera department supervisor.

**Edward A. Graf** has been appointed General Manager of Technicolor Film Services-Chicago, it was announced by Richard M. Blanco, Vice-President of Technicolor Inc., Box 38-547, Hollywood, CA 90038. Mr. Graf was formerly Director of Laboratories, United States Air Force Audio-Visual Center, Norton AFB, Calif. He recently retired from the Air Force.

**Larry L. McFadden** has been appointed Director of Marketing of Technicolor Information Systems Div., 6311 Romaine St., Hollywood, CA 90038. He will direct marketing and promotional activities for television programs and commercial research services. He will also handle marketing of computer-related services offered by the division to the cable television field.

**Morton Golden** will represent Capital Film Laboratories, Inc., 470 E St., S.W., Washington, DC 20024, in New York City, it was announced by Alfred E. Bruch, President. Mr. Golden was formerly Director of World-Wide Technical Facilities for Cinema Center Films, the theatrical division of CBS. In his new post he will be responsible for general sales in the greater New York area.

**Robert M. Weil** has been appointed Director of Engineering for the Telecommunication Dept., San Diego City College, 1425 Russ Blvd., San Diego, CA 92101. He was formerly Manager of Switching Systems Engineering for COHU Electronics, Inc. In his new post he will be responsible for technical operations at the college's new color television production facility and FM stereo radio station.

**Burton Stone** has been appointed Executive Vice-President of Precision Film Laboratories, 894 E. 51 St., Brooklyn, NY 11203. He was formerly Vice-President of Technicolor-New York. In his new post he will have full operational responsibility for Precision Film Laboratories.

**George W. Le Blanc, Jr.**, has been appointed Director of Sales for Inflight Motion Pictures, Inc. He has been with Inflight since 1969 and before that he was with Sylvania Electric Products. In his new post he will be in charge of all Inflight sales activities concerning entertainment aboard aircraft of all the world's airlines.

**Allen E. Sawyers** has been appointed Vice-President of Operations of the Audio Div. of Audiotronics Corp., 7428 Bellaire Ave., North Hollywood, CA 91605, it was announced by Don E. Warner, Audiotronics President. In his new post Mr. Sawyers will coordinate all engineering and manufacturing activities, including production, quality control and production control. Audiotronics manufactures audio-visual equipment for the education and training fields.

## Obituaries

### Wilfred W. Wetzel

Dr. W. W. Wetzel, a Fellow of the Society, died on December 26 of a heart attack at his winter home in Scottsdale, Ariz. He had been in poor health for about five years since his retirement from the Minnesota Mining & Mfg. Co. where he served as Vice-President and General Manager of the 3M Magnetic Products Division. Dr. Wetzel served as Governor of the Society from 1958 to 1961, and received



the Samuel L. Warner Memorial Award in 1953 for his work in developing magnetic tapes for audio and video recording. His paper, with co-authors P. Herr and B. F. Murphey, on "Some Distinctive Properties of Magnetic-Recording Media" in the January 1949 *Journal* remains a classic in this field. Other honors include the University of Minnesota's Outstanding Achievement Award to former students for high eminence and distinction. He obtained his Ph.D. from Minnesota in 1933 and has lectured at Minnesota, Chicago, and Colgate Universities. He is survived by his widow, Helen, a sister, Genevieve, of So. Saint Paul, and a brother, Matthew, of Little Falls, Minn.

His death is a deep loss not only to his immediate family but to the hundreds of friends he had made in the recording industries both here and abroad. He was not only a great scientist and engineer but also a man of engaging personality. We will sorely miss his genius and even more his friendship.—*John G. Frayne*

### Stanley G. Fitch

Stanley G. Fitch died April 7, 1971, at the age of 52. A native of England, he was educated at London University. He was the son of the co-founder of Beard & Fitch Ltd., a company which has specialized in the manufacture of high-precision gears for more than 50 years.

He was internationally known as the British pioneer of the Lawley daylight-loading film processing machines, which he introduced at a time when it was generally believed that such equipment could only be custom-built to individual laboratory requirements. Those of us who knew him remember with admiration the steadfast determination and singleness of purpose with which, for many years, he fought a single-handed battle to build a world-

A lot of productions use a lot of different cameras for a lot of different purposes. One camera might be blimped and mounted for sound work. Another might be hand-held for wild shots. A third might wind up on the camera car. And if time-lapse, animation or underwater footage is required, the call might go out for cameras number four, five, or six.

Arriflex had a better idea — one rooted in logic, convenience and economy. Why not use one camera and a choice of accessories to do many jobs, instead of many cameras to each do one job?

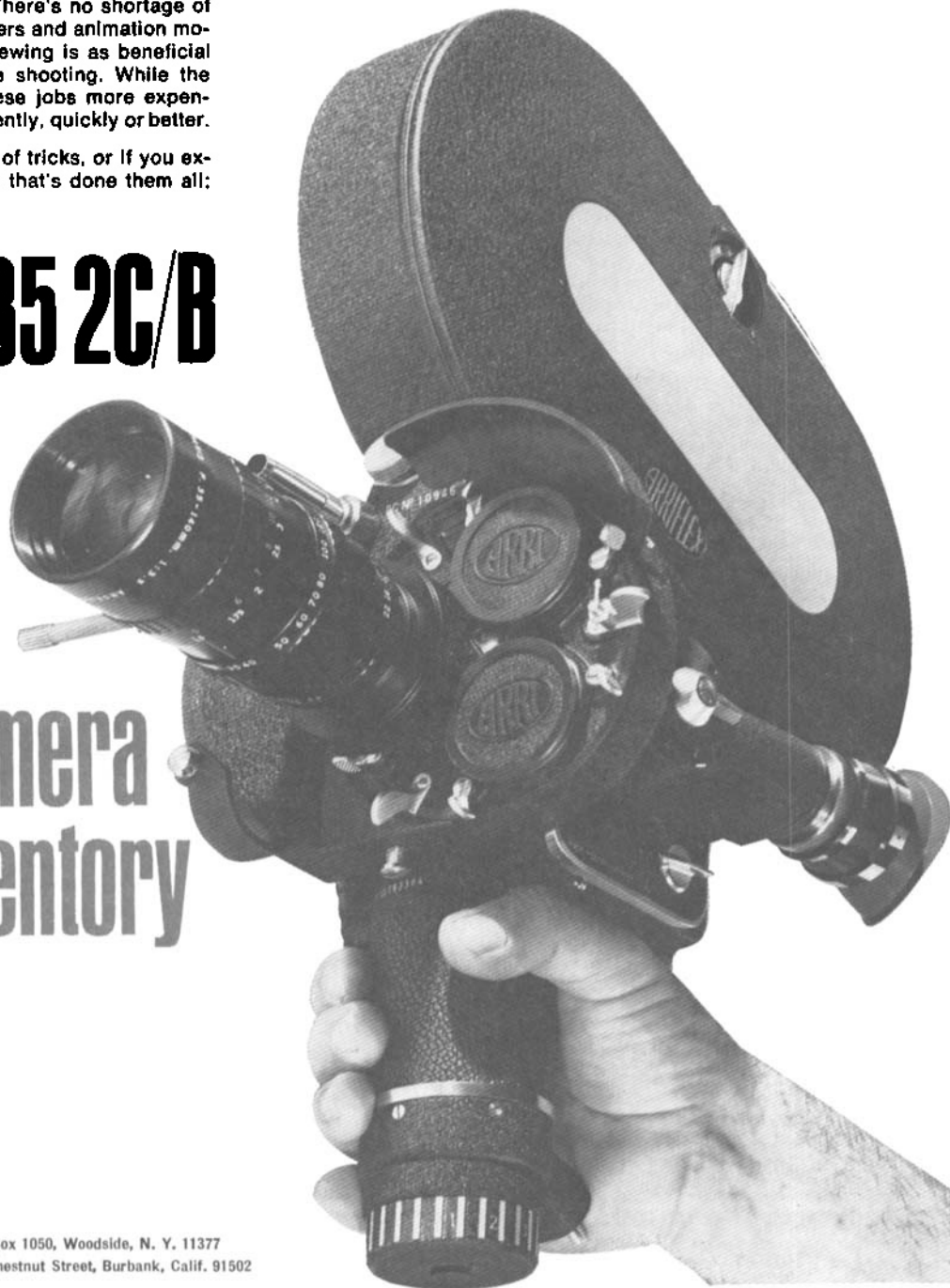
The idea's validity has been pretty well substantiated over the past three decades. An Arriflex 35 is a 200' or 400' camera that can be hand-held, that squeezes into any corner its operator can, that leaves some room in the camera car for the cameraman. And that same Arriflex is also a blimped 1000 footer, with sync generator and automatic slate, if you wish. There's no shortage of underwater housings, intervalometers and animation motors; and Arriflex mirror-shutter viewing is as beneficial on the animation stand as in live shooting. While the single purpose cameras do all these jobs more expensively, none do them more conveniently, quickly or better.

So if your writers call for all kinds of tricks, or if you expect the unexpected, pick the one that's done them all: Arriflex 35.

## **ARRIFLEX® 35 users use accessories where other-camera users use other cameras**

# **ARRIFLEX® 35 2C/B**

the  
one-camera  
inventory



**ARRIFLEX**  
COMPANY OF AMERICA

P. O. Box 1050, Woodside, N. Y. 11377  
1011 Chestnut Street, Burbank, Calif. 91502

wide reputation for the company to which he gave so much of his life.

During World War II he served with distinction in the Middle East and rose to the rank of Major in the Royal Engineers. Many people will remember the gentle way he always maneuvered his guests to sit at his right side, but few realized that this was because the war left him completely deaf in the left ear.

After the war he took over the management of Newman & Guardia Ltd., which had incorporated the Lawley Apparatus Co. He moved the organization from Clerkenwell to the trading estate at Harlow New Town. Shortly after this he developed the first Lawley Junior film processing machine and obtained a contract to supply six of them to the British Broadcasting Corp. Years of tireless effort followed, involving many journeys and thousands of miles of travel to almost every television center throughout the world. It was undoubtedly due to this great personal effort by Stanley Fitch that Newman & Guardia received the Queen's Award to Industry especially for their contribution to the export drive.

Quite recently, circumstances forced Stanley Fitch to part company with Newman & Guardia, but nothing could prevent him from continuing to design and build film processing equipment. During an all too brief association with John Hadland & Company he managed to develop and build the first of a new line of machines, called the Flowline, and by almost super-

human effort to have the machine ready for exhibition at the 1970 Photokina.

The sympathy of all members of the Society is extended to his widow, Elizabeth, his two sons, David and Jeremy, and his daughter, Jacqueline, in their great and untimely loss.—*Leslie J. Wheeler*

### Merle L. Dundon

Merle L. Dundon died March 16, 1971, at the age of 78, at his home in Pittsford, N.Y. A native of Edinburgh, Ohio, he received a B.A. degree from Mt. Union College, Alliance, Ohio, and M.S. and Ph.D. degrees in chemistry from Ohio State University. In 1943 he received the honorary degree of Doctor of Science from Mt. Union College.

An internationally known authority on color photography, he retired from Eastman Kodak Co. in 1960 as Assistant Manager of the Film Emulsion and Plate Manufacturing Div. He joined Kodak in 1923 following a year of research at Ohio State University under a National Research Fellowship. He was first with Kodak Research Laboratories where he specialized in photographic chemistry and in 1929 he was transferred to the Film Emulsion Dept.

In 1958 he was awarded the Herbert T. Kalmus Gold Medal for contributions to the design and development of color products. In 1926 the Bronze Medal of the Société Française was presented jointly to Dr. Dundon and John I. Crabtree for outstanding research work. He co-authored

(with Mr. Crabtree) several outstanding papers in the *SMPTE Transactions* on the cause of fog in photographic developers, the use of desensitizing dyes and on color materials.

Among other professional organizations he was a member of American Chemical Society, American Association for the Advancement of Science and the Society of Photographic Scientists and Engineers. He was a Fellow of the Photographic Society of America.

(Mr. Dundon was the subject of a Biographical Note which appears on p. 564 of the August 1960 issue of the *Journal*.)

### Don M. Alexander

Don M. Alexander died February 11, 1971, in Colorado Springs, Colo. He was a Life Fellow of the Society. He was the founder of Alexander Film Co. and Alexander Aircraft Co. The Alexander Film Co. was established in Spokane, Wash., in 1919 and was moved to Denver, Colo., in 1924. The Alexander Aircraft Co. was established in Denver and both firms were moved to Colorado Springs in 1928. The film company became one of the world's largest producers of theater advertising films and television commercials. He retired as President in 1957. One of his major interests was color photography and he developed a system called the Alexander natural color process.

Mr. Alexander was born on March 11, 1893, in Chattanooga, Tenn. He attended the Colorado School of Mines and received a B.S. degree in electrical engineering from Washington State University. He was active in community affairs and was especially interested in the Boy Scouts of America. In 1951 he was presented with the Silver Beaver Award for his services to scouting in the Pikes Peak Region and in 1955 he was awarded the Silver Antelope.

### Philo T. Farnsworth

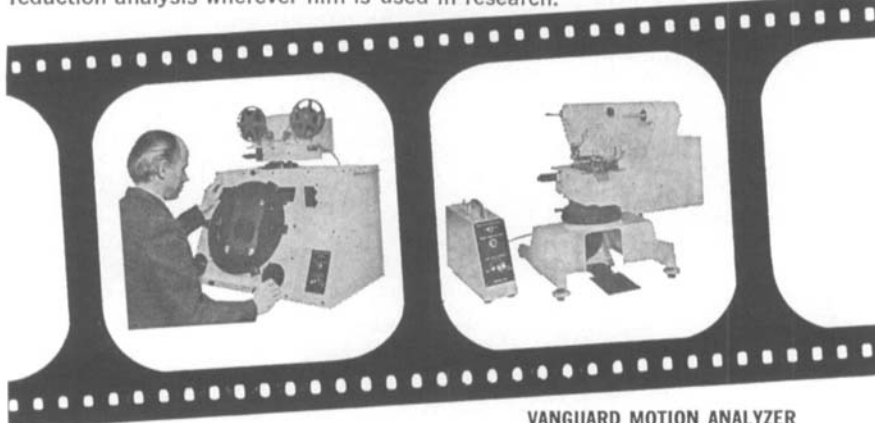
Philo T. Farnsworth, a Fellow of the Society, died March 11, 1971, in Latter Day Saints Hospital in Salt Lake City, Utah. He was 64 years old. He was born in Beaver, Utah, and as a small boy he was a sheep herder. One of the pioneers in the development of television (he transmitted the world's first TV picture in 1927 when he was 20 years old), he was described at the age of 31 as one of the world's 10 greatest living mathematicians. At the age of 15 he described to his high school mathematics teacher his plan for sending pictures through the air. Six years later he filed his first patent which covered a complete electronic television film. At the time of his death he held more than 300 American and foreign electronics patents.

He entered Brigham Young University but after two years he had to leave school because of the death of his father which made it impossible for him to afford a university education. In 1937 he received the Brigham Young University's distinguished alumnus award. He also received honorary Doctor of Science degrees from Brigham Young University and Indiana Institute of Technology. He founded Farnsworth Radio and Television Corp. at Fort Wayne, Ind., which later became Capehart Farnsworth Electronics, and

## GETTING THE MOST FROM YOUR FILM?

There's no guesswork with Vanguard.

Vanguard's Analyzers provide accurate Qualitative and Quantitative photographic reduction analysis wherever film is used in research.



### VANGUARD MOTION ANALYZER

X, Y and Angle Measurements for various film sizes (as for 16mm film shown above left).

BUILDING BLOCK design:

- Projection Heads
- Projection Cases and Stands
- Automatic Readout options

STANDARD ITEMS available for all requirements (analysis projector for 35mm film shown above right).

Phone or Write for FREE Catalog

**VANGUARD**  
INSTRUMENT CORPORATION

Walt Whitman Rd.  
Melville, L.I., N.Y. 11746  
(516) 249-3031

Represented on Motion Analyzer Sales by:  
**INSTRUMENTATION MARKETING CORP.**

820 S. Mariposa St., Burbank, Calif. 91506  
(213) 849-6251

which was later acquired by International Telephone and Telegraph Co. Mr. Farnsworth served as President and Technical Director of the ITT Farnsworth Research Corp. and Technical Consultant to ITT Industrial Laboratories at Fort Wayne. He retired in 1967.

His development of a working system of television transmission occurred simultaneously with that of Vladimir Zworykin, but Mr. Farnsworth is believed to have made the first transmission. Although best known for his work in television, he also helped develop radar systems and special-purpose vacuum tubes.

Membership in professional organizations other than the SMPTE included American Association for the Advancement of Science, Institute of Electrical and Electronic Engineers, Royal Society of Arts and Royal Society for the Encouragement of Arts.



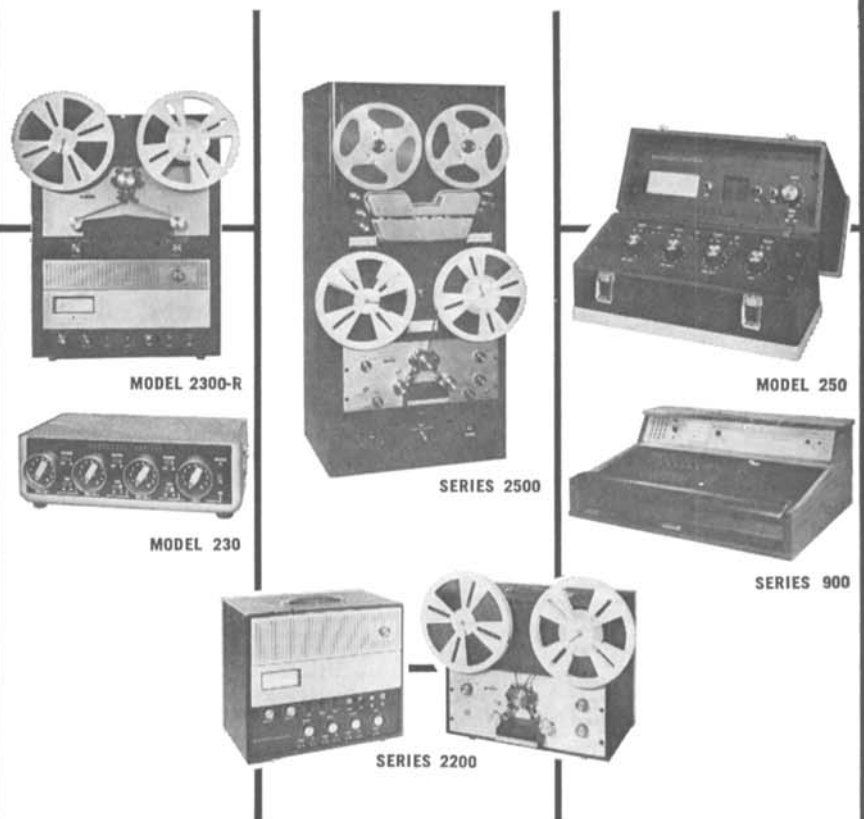
## books reviewed

### Parametric Amplifiers

By D. P. Howson and R. B. Smith. Published (1970) by McGraw-Hill Publishing Co. Ltd., Maidenhead, Berkshire, England (Available in the United States from McGraw-Hill Book Co., 330 W. 42 St., New York, NY 10036). 165 + viii pp. Illus. Diagrams. 5½ by 8½ in. Price \$12.75.

The object of this book is to provide a comprehensive background to the subject of parametric amplifiers and frequency converters. Chapter two provides a good treatment of the physics of the varactor and its noise. Chapter three offers a discussion of the general principles of the amplifier and frequency converter as based on Manley-Rowe equations for energy transfer in the nonlinear reactance circuits. No mention is made of the more fundamental approach based on the Mathieu equation. Chapter four covers the amplifier design considerations. This, for a practicing microwave engineer, is the most important aspect of the subject, and, unfortunately, the treatment here is too general to enable one to carry out a complete design. Lacking are the details of the varactor loading circuits and their effect on the amplifier bandwidth. The improvement of bandwidth by filter techniques is mentioned but a treatment of the most widely used double-tuning of the signal circuit is not included. The last two chapters deal with the four frequency amplifiers and converters. Although this is of some the-

## MAGNASYNC SOUND EQUIPMENT FOR MOTION PICTURES & TELEVISION



**MODEL 2300-R SOLID STATE DISPLACEMENT RECORDER** — makes single system editing possible. Automatically re-positions the sound track of a processed 16mm single-system release print film to "editors sync" . . . sound and corresponding picture "in line" . . . for rapid, accurate editing, and then automatically re-positions sound track to "printer's sync" or "projection sync" for immediate projection. The unit may be interlocked with other magnetic film recording equipment and projectors including conventional TV chain projectors. \$2495.00

**MODEL 230 MIXER** — NAGRA COMPATIBLE SOLID STATE MICROPHONE MIXER — Specifically designed to conform to the input characteristics of the Nagra ¼" tape recorder, with special consideration given to their aesthetic compatibility. \$395.00

**SERIES 2500 SOLID STATE TRANSFER SYSTEM** — 16mm, 17.5mm or 35mm synchronous magnetic film. Unit consists of a heavy-duty quarter-inch magnetic-tape reproducer, a solid state sync pulse amplifier, and a sprocket magnetic film recorder/reproducer, all mounted in a single rack cabinet. This system is capable of transferring a pre-recorded quarter-inch tape to sprocketed film without tying up the field recorder. From \$4650.00

**SERIES 2200 SOLID STATE PORTABLE RECORDER** — for 16mm, 17.5mm or 35mm synchronous magnetic film. Utilizes Magnasync Transport Mechanism. Available with all standard film speeds and voltages for complete international compatibility. Extremely versatile input switching circuits allow use of three low or high level microphones and line, or up to four line inputs. Input and output transformers on all channels for complete isolation and minimum noise. Modular plug in construction. The unique "quick slip" head cover permits sync marking directly over head gap. From \$2775.00

**MODEL 250 — SOLID STATE PORTABLE FOUR CHANNEL MICROPHONE MIXER** — is designed for motion picture sound recording and remote broadcast transmission. The high level mixer features dialogue equalization on each incoming channel, master gain control, built-in microphone talk-back system. Versatile input circuitry allows various combinations of microphones and lines (high & low level) to be mixed. Portable. Self contained rechargeable batteries provide economical operation where A.C. power is not available. \$795.00

**SERIES 900 SOLID STATE STUDIO MIXING CONSOLE** — Features non-obsolete solid state circuitry, modular construction. This unit is capable of fulfilling the requirements of any studio . . . large or small. Other special features include up to 12 microphone or line inputs, complete 6-position equalization with echo send and cue on each input channel, up to 4 program output channels with large illuminated VU meters and echo & cue channels as required. \$5255.00

Send for complete information & descriptive literature.



**THE CAMERA MART INC.**  
456 W. 55th ST., NEW YORK, N. Y. 10019 • (212) 757-6977  
RENTALS • SALES • SERVICE