

theater; contributions to photographic sensitometry; contributions to the theory and practice of tone reproduction; papers on photographic efficiency of artificial light sources used in motion-picture studios; and papers (jointly with Dr. G. C. Higgins) on the microstructure of the developed photographic image including graininess, granularity, sharpness, acutance and resolving power.

In 1931 Dr. Jones gave a series of comprehensive papers on the subject of photographic sensitometry at the Spring meeting of this Society in Hollywood, California. These were published later in book form and are still considered one of the basic references on the subject. Previous to 1930, very little use had been made of sensitometric control in motion-picture processing laboratories and it was Dr. Jones' hope, in presenting a fundamental discussion of the subject, that would result in wider practical usage of sensitometry for better control of photographic quality in motion-picture prints. It was encouraging to him, therefore, to observe the rapid expansion in the use of sensitometry in motion-picture laboratory practice that took place in the two decades following publication of his book. It is also worthy of note that one of Dr. Jones' most fundamental papers dealing with the theory of tone reproduction, with a graphic method for the solution of problems, was published in the Society's Journal in 1931.

A great deal of work was done at different times by Dr. Jones and his co-workers on the microstructure of the photographic image. As early as 1920 he constructed an instrument for the quantitative measurement of graininess, in which the graininess of a photographic deposit was evaluated in terms of the magnification required to see a structure in this deposit. According to Dr. Mees, "One of the difficult problems in the early days of photographic physics was the relation between the graininess of a deposit as observed under magnification and the granularity of the deposit itself." Dr. Jones began to work actively on this relationship in 1945 and he and Dr. G. C. Higgins were able to resolve the matter satisfactorily and to clarify and evaluate the relation between graininess and granularity.

Dr. Jones was born at York, Nebraska, on April 12, 1884, where he attended public schools and was graduated from high school in 1903. He received his Bachelor of Science degree in Electrical Engineering at the University of Nebraska in 1908; his Master of Science degree in Physics in 1910; and the honorary degree of Doctor of Science from the University of Rochester in 1933.

From 1908 to 1910 he was assistant in the Physics Department of the University of Nebraska, and from 1910 to 1912, assistant physicist at the National Bureau of Standards in Washington, D. C. The head of the department of physics at the Bureau was Dr. P. G. Nutting. In 1912, Dr. Nutting accepted an invitation from Dr. C. E. Kenneth Mees to join the newly organized research laboratory of the Eastman Kodak Company and Dr. Nutting took Jones with him as his assistant. In 1916, Nutting left the Kodak Research

Papers Presented at the Washington Convention, May 3-7

MONDAY AFTERNOON—Technical Session

- C. E. Phillimore, Bell & Howell Co., Chicago, "The Historical Background of the 35mm Professional Camera."
 Vice-Admiral Harold G. Bowen, USN (Ret.), Thomas Alva Edison Foundation, Inc., West Orange, N.J., "Thomas Alva Edison's Early Motion-Picture Experiments."
 T. H. Miller and R. C. McClelland, Eastman Kodak Co., Rochester, N.Y., "Effective Use of Color Slides in Technical Lectures."

MONDAY EVENING—Black-and-White Cinematography

- C. E. K. Mees, Eastman Kodak Co., Rochester, N.Y., "The History of Professional Black-and-White Motion-Picture Films."
 Joseph Westheimer, Consolidated Film Industries, Hollywood, "Principles of Special Photographic Effects."
 Ray Kellogg and L. B. Abbott, Twentieth Century-Fox Film Corp., Beverly Hills, Calif., "Some Special Photographic Effects Used in Motion-Picture Production."

TUESDAY MORNING—Theater Session

- Charles W. Handley, National Carbon Div., Union Carbide and Carbon Corp., Los Angeles, "History of Motion-Picture Studio Lighting."
 Willy Borberg, General Precision Laboratory Inc., Pleasantville, N.Y., "The Development of the 35mm Projector."
 H. E. Bragg, L. D. Grignon and E. I. Sponable, Twentieth Century-Fox Film Corp., N.Y., "Design Considerations of CinemaScope Film."
 C. Robert Fine, Fine Sound Inc., N.Y., "Perspect-A-Sound Integrator Unit."
 Loren L. Ryder, Paramount Pictures Corp., Hollywood, "VistaVision."

TUESDAY AFTERNOON—Color Session

- Gerald F. Rackett, Columbia Pictures Corp., Hollywood, "Color Cinematography, 1930-1954."
 K. M. Carey, National Film Board of Canada, Ottawa, Ont., "Latensification of Multilayer Color Film."
 R. C. Lovick and R. L. White, Color Technology Div., Eastman Kodak Co., Rochester, N.Y., "Factors Affecting Application of Soundtrack Developers to Color Films."
 H. F. Ott and R. C. Lovick, Color Technology Div., Eastman Kodak Co., Rochester, N.Y., "High-Efficiency Air Squeegee and Sound-Developer Applicator for Color Films."
 D. E. Grant and H. F. Ott, Color Technology Div., Eastman Kodak Co., Rochester, N.Y., "A Rapid, Automatic Stitch Splicer for Darkroom Operation."

WEDNESDAY MORNING—Sound Session

- E. W. Kellogg, retired, formerly RCA Victor Div., Radio Corporation of America, Camden, N.J., "History of Sound Motion Pictures."
 John G. Frayne, Westrex Corp., and B. N. Locanthi, Consultant, Hollywood, "Theater Loudspeaker System Incorporating an Acoustic Lens Radiator."
 Kurt Singer and Robert V. McKie, Radio Corporation of America, Hollywood, "Cross-Modulation Compensator."
 Warren R. Isom, Radio Corporation of America, Camden, N.J., "Synchronized Recordings on Perforated Tape."
 Daniel J. Bloomberg, John E. Pond, Republic Productions, Inc., and Michael Rettinger, Radio Corporation of America, Hollywood, "Republic Studio Multiple Stage Design."
 J. K. Hilliard and J. J. Noble, Altec Lansing Corp., Beverly Hills, Calif., "Improvements in Small Condenser Microphone Design."

WEDNESDAY AFTERNOON—16mm Projection Session

- Malcolm G. Townsley, Bell & Howell Co., Chicago, "History and Development of 16mm Motion-Picture Equipment."
 Philip M. Cowett, Navy Dept., Bureau of Ships, Washington, D.C., "The Navy Development Program for a Brighter Projector Light Source."
 W. T. Anderson, Jr., Hanovia Chemical and Mfg. Co., Newark, N.J., "High-Brightness Xenon Compact Arc Lamp."
 E. W. D'Arcy and A. C. Seda, Bell & Howell Co., Chicago, "Application of the Xenon Arc to the Armed Forces AQ-2(1) 16mm Sound Motion-Picture Projection Equipment."
 E. W. D'Arcy and A. C. Seda, Bell & Howell Co., Chicago, "Qualitative and Quantitative Determination of Travel Ghost."
 Arthur Cox, Bell & Howell Co., Chicago, "CinemaScope Lenses."

WEDNESDAY EVENING—National Archives Session

- Josephine Cobb, National Archives, Washington, D.C., "Matthew B. Brady and His War Photography, 1861-1865."

THURSDAY MORNING—Technical Session

- John I. Crabtree, Eastman Kodak Co., Rochester, N.Y., "The Motion-Picture Laboratory."
 James W. Kaylor and A. V. Pesek, Color Corporation of America, Burbank, Calif., "Color Compensating Light Changer."
 C. E. Beachell, National Film Board of Canada, Ottawa, Ont., "A Plotting Device for the Animation Stand."
 Harry P. Brueggemann, Color Corporation of America, Burbank, Calif., "Electronic Light-Change Device."

THURSDAY AFTERNOON—High-Speed Photography

- John H. Waddell, Wollensak Optical Co., Rochester, N.Y., "Survey of Photographic Principles of the Study of Motion as Established by the Old Masters With a Comparison of That Which Is Being Done Today."
 Harry L. Parker, American Speedlight Corp., N.Y., "History of Electric Flash Lamps."

ACME SINGLE SYSTEM TELEVISION RECORDING CAMERA



Now! TV Recording with an Invisible "Picture Splice"

The new Acme Single System Recording Camera is specifically designed to photograph the image received on a television cathode-ray monitor tube and has been engineered to eliminate optical and mechanical causes of shutter-bar.

MOVEMENT: Outstanding features are (1) Two registration pins which enter the film and remain stationary during the entire 288-degree exposure. (2) An intermittent pressure pad which relieves all pressure to the film during the pull-down cycle.

SHUTTER: Shutter is adjustable from 287 to 289 degrees open. A calibrated dial adjustment permits ease of shutter size changes to test ideal shutter-bar conditions or to accommodate characteristics of various film emulsions.

POWER: Employs four motors for maximum stability. (1) A movement drive motor; (2) A shutter drive motor; (3) A sound drive motor; (4) A film take-up torque motor.

SAFETY DEVICES: Four safety features. (1) Movement lock-switch; (2) Automatic buckle switch; (3) Automatic run-out or break switch; (4) Safety pilot light indicating position of all safety devices.

MAGAZINE: 3,000 ft. capacity enables recording of a complete one-half hour program without reloading.

Complete technical information will be furnished on request.

ACME CAMERA CORP.

Designers and Manufacturers of
Special Effects Motion Picture equipment



Distributed by Producers Sales Corp.

2704 West Olive Avenue, Burbank, California

- H. E. Edgerton, Robert Bonazoli and J. T. Lamb, Massachusetts Institute of Technology, Cambridge, Mass., "Duration and Peak Candlepower of Some Electronic Flash Lamps."
 N. W. Rodelius and R. W. Thickens, Armour Research Foundation, Illinois Institute of Technology, Chicago, "The Simultaneous Recording of Mechanical and Electrical Events With the 16mm Fastax Camera."
 C. C. Rockwood and W. Harvey, Chicago Midway Laboratories, Chicago, "Stroboscopic Lamp Using High Repetition Rate One-Joule Pulsar."
 Allen M. Erickson, Naval Ordnance Laboratory, White Oak, Md., "A Portable Timer for Instrumentation Photography."

FRIDAY MORNING—(Concurrent Sessions)
High-Speed Photography

- C. C. Rockwood and Richard M. Kuniyuki, Chicago Midway Laboratories, Chicago, "Duo Flash Photography."
 David Grossman, Army Chemical Center, Md., "Precision Cut-Off and Braking of Fastax 8mm and 16mm Camera at High Speeds."
 Charles C. Everett, International Harvester Co., Melrose Park, Ill., "High-Speed Photography in the Development of Diesel Engines."
 George E. Merritt, U.S. Naval Proving Ground, Dahlgren, Va., "Uses of Photography in Ballistic Measurement."
 Howard Betts, Albert Subach, Vanguard Instrument Co., Valley Stream, L.I., and C. A. Jantzen, Photographic Analysis Co., Clifton, N.J., "Quantitative High-Speed Motion-Picture Film Analyzer."

Television

- J. V. L. Hogan, Consultant, N.Y., "The Early Days of Television."
 Richard S. O'Brien, Columbia Broadcasting System, N.Y., "CBS Color Television Staging and Lighting Practices."
 H. M. Gurin, National Broadcasting Co., Inc., N.Y., "Color Television Light Sources."
 E. T. Percy and T. G. Veal, Research Laboratories, Eastman Kodak Co., Rochester, N.Y., "Subject Lighting Contrast of Color Motion Pictures for Television."
 James L. Lahey, Dage Electronics Corp., Beech Grove, Ind., "Television Camera for Film and Studio Use."
 F. Cecil Grace, Allen B. Dumont Laboratories, Inc., Clifton, N.J., "Electronic Shutter in Television Film Pickup."

FRIDAY AFTERNOON—Television Session

- Axel G. Jensen, Bell Telephone Laboratories, Murray Hill, N.J., "The Evolution of Modern Television."
 H. C. Oppenheimer, U.S. Army Signal Corps, Washington, D.C., "Applications of Television to Military Operations."
 Sherman Atwood, National Broadcasting Co., Inc., N.Y., "The Design and Construction of a Color Television Mobile Unit."
 J. M. Brumbaugh and R. O. Drew, Radio Corporation of America, Camden, N.J., "Improved Techniques for Television Recording With Ultraviolet Photography."
 E. D. Goodale, National Broadcasting Co., Inc., N.Y., "Color Kinescope Recording."
 Otto Wittel, Camera Works, Eastman Kodak Co., Rochester, N.Y., "A Continuous Projector for Television."

Laboratory and Jones was appointed chief physicist and held that position until he retired.

During the first World War, Dr. Jones was commissioned a lieutenant in the United States Naval Reserve Force in charge of camouflage investigation. In World War II he devoted his energy unsparingly to the work of the National Defense Research Council and the Office of Scientific Research and Development. He also acted as a member of the War Emergency Committee-Z52 of the American Standards Association.

Besides his service on the committees of this Society, he served for many years on various committees of the Illuminating Engineering Society, and the Optical Society of America and other scientific organizations. He was chairman of the Z38 Section Committee, Photography, of the American Standards Association from 1940 to 1950. When he retired as chairman of this Committee in 1950, it was announced at a luncheon meeting in his honor that a total of 135 photographic standards had been prepared by his committee and a bound volume containing all of the standards was presented to him. One of the significant accomplishments of his committee was the standardization of a method for determining photographic speed and speed number in 1946.

Dr. Jones was the recipient of many honors for his outstanding contributions to photographic theory and practice. In 1926, the Association of Scientific Instrument Makers of the United States recognized a paper by him as the best instrument paper offered for publication in the *Journal of the Optical Society of America* and the *Review of Scientific Instruments*. In 1935 as coauthor with J. H. Webb of a paper "Reciprocity-Law Failure in Photographic Exposure," he received the Journal Award of the Society of Motion Picture Engineers. This Society awarded him its highest honor, the SMPE Progress Medal, in 1939 "in recognition of the outstanding character of his scientific researches in the field of photography, with particular reference to his investigations of sensitometric procedures, his studies of photographic terminology, and his determinations of the criterion of pictorial excellence achieved by photographic processes."

The Optical Society of America, of which he was president in 1930 and 1931, presented their Frederic Ives Medal to him in 1943, "in recognition of outstanding achievements in photographic research with special reference to sensitometric processes, photographic print quality, and motion photomicrography of crystals, of leadership in photographic terminology, and of leadership in the preparation of an excellent and comprehensive report on colorimetry."

In January 1949 Dr. Jones was notified that he had been awarded the Progress Medal of the Royal Photographic Society of Great Britain for 1948. This medal, the highest honor of this Society, was given to him "in recognition of his valuable and outstanding contributions to the use of photographic sensitometry in the manufacture and control of photographic materials and in our understanding of their utilization."

On May 3, 1949, he gave by invitation

Professional Services

ELLIS W. D'ARCY
 Consulting Engineer

Motion-Picture Projection and
 Magnetic Recording and Reproduction

7045 N. Osceola Ave., Chicago
 Phone: Chicago — Newcastle 1-0093
 Washington — Oliver 2-2340

LAB-TV

PROFESSIONAL
 16mm Black and White
REVERSAL PROCESSING
 Processing on hourly schedules for
 TV Stations and Producers
Write for Circular
 247 W. 46th St., New York 36

HIGH-SPEED PHOTOGRAPHY

Fastax Representative
 Fastax Cameras, Accessories, Film
 Fastax Photographic Service

Photographic Analysis Company
 100 Rock Hill Rd., Clifton, N. J.
 Phone: Prescott 8-6436

WILLIAM B. SNOW

Consulting Engineer
 Acoustics — Electronics
 Stereophonic Recording
 1011 Georgina Avenue
 Santa Monica, California
 EXbrook 4-8345

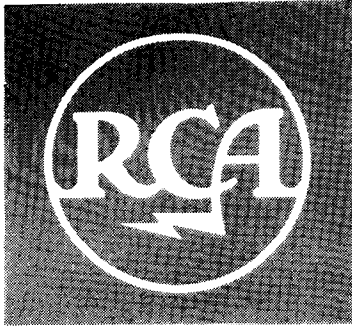
FILM PRODUCTION EQUIPMENT

From a single source, equipment for
 Production—Processing
 Recording—Editing
 Domestic and Foreign

S.O.S. Cinema Supply Corp.
 Dept. TE, 602 W. 52nd St., N.Y.C.
 Cable: SOSOUND

*Professional cards available
 to members*

12 insertions, 2 x 1 in., \$60

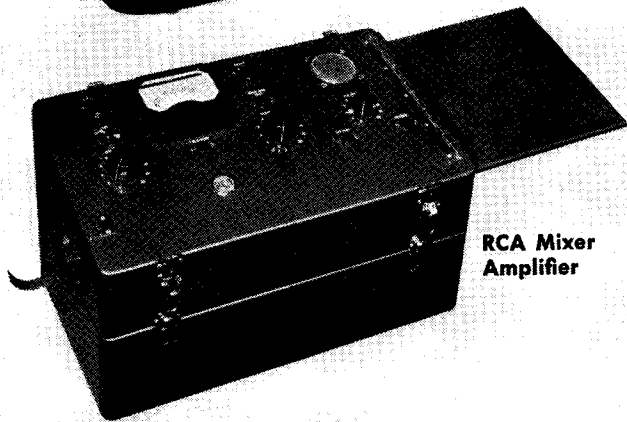
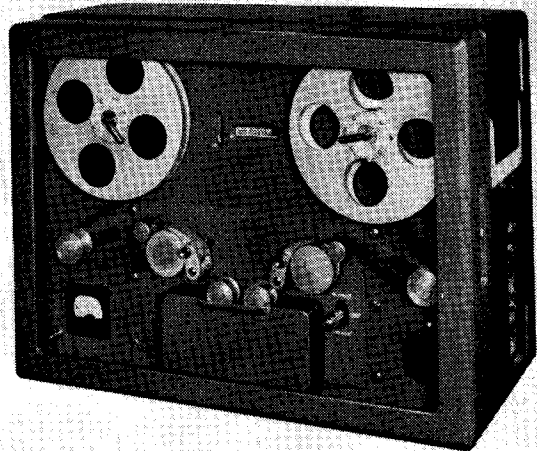


NOW—PORTABLE MAGNETIC TAPE RECORDING EQUIPMENT
Especially designed
for the film industry!



**RCA Power Supply
and Case Assembly**

**New RCA PM64A
Portable Magnetic
Recorder**



**RCA Mixer
Amplifier**

**RCA brings you all these features
in lightweight equipment!**

- 1. Tight loop operation**
- 2. Dual flywheel filtering**
- 3. Constant tension take-up**
- 4. Automatic loop setting**
- 5. Excellent film motion**
- 6. Reversible operation**
- 7. Fast re-wind**
- 8. Quick operating set up**

HERE'S EVERYTHING YOU ASKED FOR! A year ago, RCA field men started asking film sound recordists what they liked—and didn't like—about existing magnetic recording equipment. These findings were turned over to RCA engineers who eliminated frills and added new *functional* features.

The result is new RCA PM64A equipment—*synchronous* magnetic recorder-reproducer, mixing amplifier, power “package”—all of them

precision instruments—all of them portable.

Film sound men tell us this equipment is the *most practical* they have ever seen.

Here at last is equipment which *fulfills* the early promise of magnetic recording—higher volume and frequency ranges plus greater flexibility at lower cost.

For the complete story on RCA PM64A equipment, write RCA today.

“Marcas Registradas”



RCA INTERNATIONAL DIVISION

RADIO CORPORATION of AMERICA

RCA BUILDING

30 ROCKEFELLER PLAZA, NEW YORK, N.Y., U.S.A.

RCA ENGINEERING PRODUCTS DIVISION

411 Fifth Avenue, New York 16, N. Y.

1560 North Vine Street, Hollywood 38, California

the 16th Hurter and Driffeld Memorial Lecture for which he received the Hurter and Driffeld Medal of the Royal Photographic Society. In July 1949 he was honored again by that Society when its Council conferred upon him an Honorary Fellowship.

The Photographic Society of America conferred their Honorary Fellowship on Dr. Jones in 1949. In 1950 they awarded him their Progress Medal "for outstanding contributions to photographic science and practice, especially in the field of sensitometry." In 1953 he received the PSA Journal Award for 1952 for his paper "The Psychophysical Evaluation of the Quality of Photographic Reproductions."

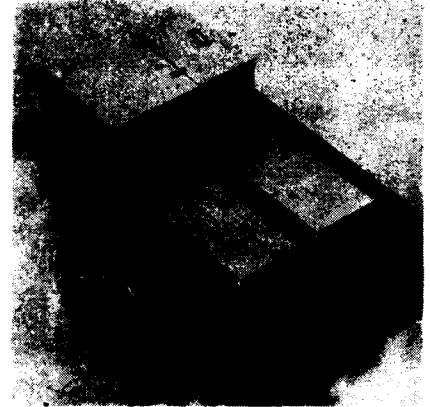
On May 4, 1954, Dr. Jones was one of 26 members of the Society of Motion Picture and Television Engineers who were

awarded Service Certificates in recognition of their services for more than 30 years to that Society and to the motion-picture industry.

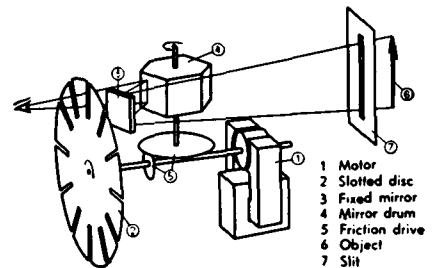
Dr. Jones was always characterized by the great energy with which he attacked the problems of scientific research. He had a calm, orderly, and searching mind, and an insatiable desire for learning the truth about every subject he studied. The knowledge of the physics of photography was advanced significantly by the work of Loyd Ancile Jones throughout the more than forty years that he labored in this important field. The field of motion-picture engineering has sustained a great loss by his passing, but his published researches will long provide a valuable reference in this and allied fields.—*Glenn E. Matthews*

New Products

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.



A 1 1/2-kw lighting set fitted into a 1/2-ton, 2-wheeled standard Army cargo trailer has been developed by the Electrical Engineering Dept. of the Engineer Research and Development Laboratories, Fort Belvoir, Va. Also, there are 3-kw and 5-kw sets which fit into a 3/4-ton trailer. Interchangeability of components and containers between sets, lightness and compactness of packing and ease of assembly and disassembly were the bases for design. It is reported that the largest set can be assembled by two untrained men in 75 min. and disassembled in 65 min, compared with 5 and 10 hr required for previous equipment. Splicing and pole climbing have been eliminated. Where possible, sockets, plugs and receptacles have been made part of the cables and lamp cords.



The Kern Swiss Super-Stroboscope is a new precision tool for the observation and photography of rapidly occurring phenomena of periodic as well as aperiodic natures. The light placed behind the object is limited by a slit. It first hits a fixed mirror which reflects it to a rotating drum of six mirrors driven by a motor and is finally directed through a revolving disk with from two to 100 slots coupled to the same motor. A special regulator changes the motor speeds from 500 to 2500 rpm, while the transmission ratio between disk and mirror drum can be adjusted from 1:45 to 1:90. Up to 100 images/sec are visible through the consecutive slots which are laid side by side at regular intervals. An analysis of almost any type of movement can be made by changing the width of the slit, the speed of the motor, the transmission ratio and the number of slots. By stopping the mirror drum the instrument can be converted into a simple stroboscope. The new instrument, made by Kern & Co. of Switzerland, is distributed here by Karl Heitz, Inc., 150 W. 54 St., New York, and priced at \$995.

**Largest exclusive manufacturers
of Photographic and
Graphic Arts Chemicals
in the
United States!**

HUNT PLANTS BRANCHES
AND OFFICES

**Hunt Chemicals for both
color and black and white motion picture processing
conform to the photographic specifications
of the American Standards Association.**

FOR RESEARCH ASSISTANCE WRITE TO:
THOMAS T. HILL, *Director Photographic Research*

FOR TECHNICAL SERVICE WRITE TO:
CHARLES F. LO BALBO, *Motion Picture Technical Advisor*

Established 1909

PHILIP A. HUNT COMPANY

Manufacturing Chemists

PALISADES PARK, N. J.

Brooklyn, N. Y. • Cambridge, Mass. • Chicago, Ill.

Cleveland, Ohio • Dallas, Tex. • Los Angeles, Calif.