



Executive Vice-President Ethan M. Stifle and luncheon speaker, Gen. George W. Goddard (USAF, ret.).



President Ray and Dr. Henry N. Kozanowski, winner of David Sarnoff Gold Medal Award.

able to see history in action — flickering, jittery action to be sure, but it was still a big step toward public participation in the motion of the moment.

"In 1913 Dr. C. Francis Jenkins and a group of fellow motion-picture enthusiasts were actively organizing a professional association that would become, in 1916, the Society of Motion Picture and Television Engineers.

"Coincidentally, that same year, a young man named George Goddard went down to Hammondsport, N.Y., and watched Glenn Curtiss load a bulky Pathe movie camera aboard a biplane. Curtiss took the plane up and made a series of aerial motion pictures. And right then and there, watching that wooden flying contraption make film "takes" back and forth across the flight field, George Goddard got the motion-picture bug. I'm glad to say he never lost it.

"Those were the real Woolly West days of motion pictures. The movie cameraman was a genuine pioneer who often risked his life with the same courage . . . that typified the settlers of the 1800's.

"But one thing was certain that year: motion pictures were here to stay.

"When I entered the First World War, I didn't envision how the motion-picture industry would grow from gun-camera photography at 80 miles an hour to high-speed movies in space at 17,500 miles per hour, around the world in a matter of 80 minutes. Within one's active life span, this is progress that even exceeds the dreams of Jules Verne. I hope to live to see television and motion pictures of some of our planets; at the rate of speed the Air Force and NASA are progressing, this could well be within the next decade . . .

"So much has happened in five short decades. Somebody has said that the only thing constant about life is change. And change means action, just as action implies motion. Clearly, *moving* pictures — whether on film or on a television signal — will continue to keep pace with our social and technological acceleration in the coming years.

"If you think the last half-century has been exciting — just wait around a while."

## Society Awards

Formal presentation of awards and honors took place Tuesday evening, October 15. President Reid H. Ray presided over the session, and Alexis E. Ushakoff, Jr., was responsible for arrangements.

### Fellows

Thirteen members were elevated to the grade of Fellow of the Society and were presented certificates by Past President John W. Servies, Chairman of the Fellow Membership Committee. The new Fellows are:

V. D. Armstrong  
Walter Bach  
Jack Behrend  
John W. Ditamore  
William E. Evans  
F. Alton Everest  
Robert C. Lovick  
Norman R. Olding  
William A. Palmer  
William H. Smith  
Robert W. Wagner  
John M. Waner  
William R. Weller

*V. D. (Vic) Armstrong* is manager of the photographic laboratory at the Radio Corp. of America's Missile Test Project, Patrick Air Force Base, Fla. A member of SMPTE since 1936, Mr. Armstrong has supervised film processing operations for a number of years. He attended the University of Rochester and Rochester Institute of Technology, and is a member of the Society of Photographic Instrumentation Engineers (SPIE) and the Society of Photographic Scientists and Engineers (SPSE), among other organizations.

*Walter Bach* is president of Bach Auricon, Inc., Hollywood, Calif. Mr. Bach, who joined the Society in 1936, holds many patents in the field of sound motion-picture equipment. One of his technical papers, "Magnetic-Striping 'Azimuth-Plateau' Effect on Frequency Response of 16mm and 8mm Film: An Engineering Survey," won honorable mention in SMPTE's Journal Award judging this year. Among his many organizational affiliations are the Academy of Television Arts and Sciences, SPIE and SPSE.

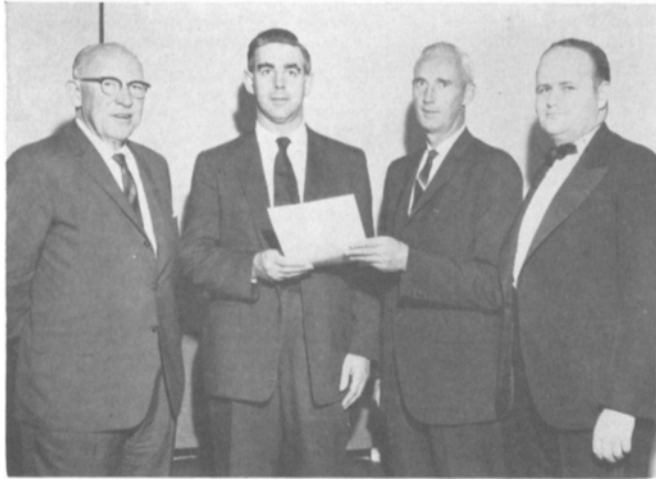
*Jack Behrend* is president of Behrend's, Inc., motion-picture and sound equipment supply firm in Chicago. He has served most recently as secretary-treasurer of the Chicago Section. Mr. Behrend holds a bachelor's degree in mechanical engineering from Illinois Institute of Technology.

*John W. Ditamore* is director of the Edward C. Elliott Hall of Music and the 1,052-seat Loeb Playhouse at Purdue University. He is also a consultant for specifications in the fields of stage design, general physical theater arrangements, projection, public address and intercommunication systems, and stage lighting. Mr. Ditamore was graduated from Purdue's School of Electrical Engineering. He has been a member of SMPTE since 1949.

*William E. Evans* is manager of the data systems department of Granger Associates, Palo Alto, Calif. He holds bachelor's and master's degrees in electrical engineering from the University of Louisville and Stanford University, respectively. A former officer of SMPTE's San Francisco Section and a senior member of the Institute of Electrical and Electronics Engineers (IEEE), Mr. Evans won a technical "Oscar" of the Academy of the Motion Picture Arts and Sciences in 1960 and, in 1963, received the V. K. Zworykin Television Award of the Institute of Radio Engineers.

*F. Alton Everest* is director of the Science and Production Department of Moody Institute of Science, Los Angeles. A noted producer of science films, he holds a bachelor's degree from Oregon State University and a degree in electrical engineering from Stanford. Before joining Moody Institute, Mr. Everest was an assistant professor of electrical engineering at Oregon State and a section chief in underwater sound research for the U.S. Navy. A member of SMPTE since 1950, he is also a member of the Acoustical Society of America and is a senior member of IEEE.

*Robert C. Lovick* is supervisor of sound reproduction development in the Photographic Technology Division of Eastman Kodak Co., Rochester, N.Y. A graduate in electrical engineering from the Uni-



Convention Vice-President Geo. W. Colburn, Dr. J. S. Courtney-Pratt, H. Theodore Harding, Alexis E. Ushakoff, Jr.



John J. Kowalak, Kalmus Award Winner Alex Quiroga and Editorial Vice-President Herbert E. Farmer.

versity of Nebraska, Mr. Lovick holds several patents in motion-picture sound reproduction. He has been a member of SMPTE for the past 15 years and is the author of a number of papers in the *Journal*. Mr. Lovick was topic chairman for sound recording for the 94th Technical Conference.

*Norman R. Olding* is operations engineer for the Canadian Broadcasting Corp. in Montreal, and is responsible for technical operating and maintenance standards, for planning and supervision of major special events broadcasts, and for training of technicians. Mr. Olding is also active in the Canadian Standards Association.

*William A. Palmer* is president of W. A. Palmer Films, Inc., San Francisco. He is an engineering graduate of Stanford University and has developed a number of devices in the field of motion pictures. In 1953, he received an award from the Northern California Academy of Television for kinescope recording progress. Mr. Palmer has been a member of SMPTE since 1936 and is the author of papers in the *Journal*. He is also a Fellow of the Audio Engineering Society.

*William H. Smith* is president and general manager of Allied Film Laboratory, Inc., Detroit. A graduate of the University of Colorado, he has been a member of SMPTE for the past 10 years and is a former chairman of the Society's Detroit Section.

*Robert W. Wagner* is Professor of Photography and director of the motion-picture division at Ohio State University's College of Engineering. Dr. Wagner has won an Encyclopedia Britannica Fellowship and the President's Award of the University Film Producers Association. He is the author of *Journal* papers on cinema education.

*John M. Waner* is chief color consultant for Eastman Kodak Co. in Hollywood. A graduate of Union College, he joined SMPTE in 1951. Mr. Waner is program chairman for the Society's 95th Semiannual Technical Conference next spring in Los Angeles.

*William R. Weller* is a technical associate in Kodak's Photographic Technology Division in Rochester. He holds patents for a process for controlling grain and con-

trast in color photography and for a photographic processing machine. He has co-authored several papers on color processing for the *Journal*. Mr. Weller has been a member of the Society for the past 10 years and is a former chairman of the Rochester Section. He is a graduate of the University of Rochester.

### Journal Award

*Robert L. Lamberts*, research associate with Kodak Research Laboratories, Rochester, received the 1963 Journal Award for his paper, "Application of Sine-Wave Techniques to Image Forming Systems." The paper, which appeared in the September, 1962, issue of the *Journal*, discusses the derivation of spatial frequency — more properly called modulation transfer function — and illustrates the usefulness of modulation transfer function in evaluating optical and photographic systems.

Mr. Lamberts holds a bachelor's degree in mathematics from Calvin College and a master's degree in physics from the University of Michigan. He is a member of the Optical Society of America and of the Society of Photographic Scientists and Engineers.

The Journal Award Committee, headed by H. Theodore Harding, also named two honorable mention winners: Walter Bach of Bach Auricon, Inc., and Dr. J. S. Courtney-Pratt, research physicist at Bell Telephone Laboratories, Murray Hill, N.J.

Mr. Bach's paper, "Magnetic-Striping 'Azimuth-Plateau' Effect on Frequency-Response of 16mm and 8mm Film: An Engineering Survey," was published in the March, 1962, issue. The winning paper of Dr. Courtney-Pratt, "Image Converter Tube Photography," appeared in the April, 1962, issue.

### Herbert T. Kalmus Gold Medal Award

The Herbert T. Kalmus Gold Medal Award, recognizing outstanding technical achievement in color motion pictures for theater or television use, was presented to *Alex Quiroga*. Mr. Quiroga is color and technical coordinator in Hollywood for National Broadcasting Co.

A graduate of Realgymnasium "Meerster" in Switzerland and of Filmakademie Berlin-Ufastadt, Mr. Quiroga is a pioneer in the field of color television. In 1954 he was awarded the Johns Hopkins Television Fellowship and, since 1957, he has established a close relationship between film manufacturers, studios, processing laboratories and the NBC television network. Mr. Quiroga has been concerned most recently with such problems as the objective balancing of TV color monitors.

Among his many inventions are the Quirogascope (an optical attachment for television cameras to permit the tilting of scenes), a gyrostabilized camera mount, a three-dimensional TV system, a videotape editor and instrumentation in color film reproduction. Mr. Quiroga is a member of SMPTE, the Optical Society of America, the American Institute of Physics and the International Color Council.

Dr. C. J. Staud, vice-president in charge of research for Eastman Kodak Co., was chairman of the award committee. The medal was presented by John J. Kowalak.

### E. I. du Pont Gold Medal Award

*Morton Sultanoff*, physicist at Aberdeen Proving Ground, Md., was presented with the E. I. du Pont Gold Medal Award, which recognizes outstanding contributions to the engineering phases of instrumentation and high-speed photography.

Chairman of the award committee was Carlos H. Elmer. The presentation was made by Charles W. Wyckoff.

Since 1946, Mr. Sultanoff has been engaged in basic study of explosives, using photo-instrumentation techniques. In 1950, he designed a high-speed camera capable of making exposures at the rate of 100 million per second.

Mr. Sultanoff, who is chief of the detonation section at Aberdeen's Ballistics Research Laboratories, studied at Drexel Institute in Philadelphia, the University of Delaware, and at Johns Hopkins University. He is a Fellow of SMPTE and of the Society of Photographic Instrumentation Engineers, and in 1961 received SPIE's Robert Gordon Memorial Award.

Among his many activities in the field,



**Program Chairman Morton H. Read, du Pont Gold Medal Award Winner Morton Sultanoff and Charles W. Wyckoff.**



**Society Governor Edward H. Reichard, Progress Medal Award Winner Dr. Arthur C. Hardy and President Ray.**

Mr. Sultanoff was Associate Program Chairman for sessions of the Fifth International Congress on High-Speed Photography (sponsored by SMPTE in 1960) and is actively associated with the Committee for the International Congresses on High-Speed Photography.

### David Sarnoff Gold Medal Award

Henry N. Kozanowski, manager of television advanced development for Radio Corp. of America in Camden, N.J., received this year's David Sarnoff Gold Medal Award on the recommendation of a committee headed by Dr. Pierre Mertz. The presentation was made by SMPTE Governor Richard E. Putman.

The citation with the award notes Dr. Kozanowski's "sustained drive to improve the quality and practical operation of television studio and film camera equipment."

Dr. Kozanowski received bachelor's and master's degrees in physics at the University of Buffalo in 1927 and 1928. He earned a doctorate in physics in 1930 at the University of Michigan and, for the next five years, was employed in the Westinghouse research laboratories, where he was involved in engineering work on high-power vacuum tubes.

Upon joining RCA in 1935, he participated in the development of camera equipment and military television. Dr. Kozanowski played a major role in design projects for air borne TV cameras for experimental work in surveillance and missile guidance in World War II. Among other accomplishments in TV engineering, he is credited with many of the developments that transformed color television cameras from laboratory instruments into practical tools for broadcasters. He received the RCA-Victor Award of Merit in 1956.

Dr. Kozanowski is a Fellow of SMPTE, and of the Institute of Electrical and Electronics Engineers. He is an Associate of the Franklin Institute and is a member of the American Physical Society, Phi Beta Kappa and Sigma Xi.

### Progress Medal Award

The premier award of the Society — the Progress Medal Award — was presented to Arthur C. Hardy, Emeritus Professor of Optics and Photography at the Massachusetts Institute of Technology.

Dr. Hardy, who completed a 41-year teaching career at MIT on his retirement in 1961, is probably best known for his pioneer work in motion-picture sound recording during the mid-1920's and his later work on the theory of color reproduction in the fields of photography, television and the graphic arts. With F. H. Perrin, he is the author of *The Principles of Optics*, a standard reference in the field.

After completing undergraduate studies at the University of California in 1917, Dr. Hardy enlisted in the Photographic Branch of the Signal Corps. He was later transferred to the newly formed Air Service and served in France as the commanding officer of the 23rd Photographic Section.

Dr. Hardy returned to the University of California after the war and took his master's degree. He was an instructor at MIT until 1920, when he accepted a position in the Research Laboratories of Eastman Kodak Co. Dr. Hardy returned to MIT as an assistant professor in 1922, and was made Professor of Optics and Photography in 1933.

During World War II, Dr. Hardy was a Section Chief in the Office of Scientific Research and Development. In recognition of the work he did in directing numerous research activities, he was awarded a Certificate of Merit by the President of the United States.

In 1938, the St. Lawrence University conferred upon him the honorary degree of Doctor of Science. The following year he received the Longstreth Medal of the Franklin Institute, which cited his invention of the recording spectrophotometer. Dr. Hardy won the Modern Pioneer Award of the National Association of Manufacturers in 1940, and the Frederic Ives Medal of the Optical Society of America in 1957. He was president of the OSA from 1935 to 1937, and was secretary of that society from 1939 to 1957.

Dr. Hardy is a Fellow of SMPTE and

a former member of the Society's Board of Governors and Board of Editors. He is now actively engaged as a private consultant.

Chairman of the Award Committee was Sidney P. Solow. Society Governor Edward H. Reichard made the presentation.

At the request of President Ray, Professor Hardy addressed the audience informally, promising at the outset that he would not attempt a technical dissertation and that he would conclude his remarks before the already announced time of adjournment. These remarks were personal reminiscences, as he recalled incidents, experiences, and anecdotes relating to his connection with the motion-picture industry since before World War I.

In 1919, he was a motion-picture "producer." With the aid of a colleague in the Department of Biology at MIT, he had undertaken to make photomicrographs of living organisms through a microscope. A motion-picture company had heard about the work that was being done at MIT, had seen some of the films, and offered to purchase the developed negatives for inclusion in their so-called screen magazine, which was usually a fifteen-minute compilation of film sequences of general interest interspersed between the newsreel and the feature picture.

During the middle twenties, Professor Hardy worked part-time in Schenectady, as a consultant to the General Electric Company, in connection with the recording of sound on film. He was careful to avoid the phrase "talking movies" because it was not expected at that time that movie actors would ever talk. After all, he said, the industry had a huge investment in the art of pantomime that might be sacrificed if the actors were to talk or sing. Indeed, it was often predicted that talking pictures would send the public back to the legitimate theater.

Professor Hardy ended his remarks on a whimsical note, after pointing out that, since his "retirement" two years ago, his principal concern had been with the optical and photographic problems of the Apollo project. Although confessing that much of the work is classified, he indicated that he

was at liberty to release the following statement: "If we succeed in sending Americans to the moon and bringing them safely back again, the time of their triumphal return to earth has never been closer than it is at this very moment."

## Conference Arrangements

As noted in the luncheon remarks of President Ray, local arrangements for the 94th Technical Conference were under the direction of the Boston Section Chairman, Charles W. Wyckoff of Edgerton, Germeshausen & Grier. In coordinating the many details necessary for a successful conference, Mr. Wyckoff was assisted by Vice-Chairman Allan C. Johnson, also of EG&G. General supervision of the arrangements was by Convention Vice-President Geo. W. Colburn.

Many of the usual pre-conference snarls were cut through by these able men: Entertainment and Hospitality Chairman Edward Kornstein of Radio Corp. of America, Banquet Chairman Robert W. Parmenter of du Pont, Sunday Buffet Chairman George A. Howard of Raytheon Corp. Joseph Rothberg of Dekko Film Productions was Hotel Arrangements Chairman.

The success of the technical sessions was in a large part due to the efforts of Projection Chairman David D. Doyle of Bay State Film Productions and Albert Goldman, Boston projectionist, and those of Public Address and Recording Chairman Joseph Dephoure of D4 Studios, who was assisted by Don Berman and Charles Carbonaro.

Projection at the Somerset Hotel had the advantages of a large ballroom with good light control, sound system and acoustics, and all necessary controls at the projection platform. Control signals were installed between the projector and the podium. The projection throw was about 75 ft, with all seats in good position, and a 12-ft screen was used. The requirements requested before the Conference were met as to equipment. But it was found that almost all possible types of equipment were required even though no advance request was made for some units — including a CinemaScope screen, overhead projection and 8mm sound, along with special projection speeds such as 8 frames per second, special light levels and color temperatures on the screen. All types of slides were accommodated as well as 8mm, 16mm, 35mm optical and magnetic sound film. Tape machines were made available both for recording and playback. A closed-circuit TV chain was hastily assembled and set up to demonstrate a new portable TV recorder. Chairman Doyle has emphasized that future projection chairmen will be well advised to prepare for all types of projection regardless of advance requests.

E. L. Scott of The Mead Corporation prepared for the SMPTE Membership Information Booth fine exhibits of members' high-speed photographs blown up and handsomely mounted. Mr. Scott's efforts were appreciated by the membership and were fruitful as a point of interest for prospective members.



Membership Chairman E. L. Scott.



New membership booth.

Commendable service also was turned in by Registration Chairman Stan Feigenbaum of EG&G, and Transportation and Ladies Program Chairman Edward H. Rideout, also of EG&G. Three other EG&G men made behind-the-scenes contributions to the conference: Auditor Thomas M. Devlin and Administrative Assistants Israel Chanock and John R. Mackey. Publicity Chairman Howard J. Hall of Itek Corp., assisted by Anthony Lloyd and Paul Donnelly, both also of Itek, performed an excellent job of promotion before and during the conference.

## Engineering Committees

The long established tradition of holding Engineering Committee meetings during the Conference was again reflected through the scheduling of nine meetings during the first four days. Although much of the engineering work on standards is actually accomplished through correspondence, the engineers take the scheduled conference as an opportunity to thrash out difficult problems, and find accord on areas of disagreement.

A more complete account of engineering activity will be published later. It should be noted, however, that at the meeting of the Ad Hoc Committee on Small Format Motion-Picture Films, Dr. White, SMPTE Engineering Vice-President, received a formal recommendation that this Committee be dissolved, as no further useful accomplishment was visualized under the charge as originally given. In accord with this motion, the Engineering Vice-President discharged the Committee with thanks for the effort which had been made (November *Journal*, p. 888).

## Ladies Program

Highlighting the ladies program chairmanned by Edward H. Rideout were an all-day visit on Wednesday, October 16, to Old Sturbridge Village, a New England country town of 150 years ago, and an all-day tour the next day of points of historical, literary and cultural interest, such as Harvard University, the Revolutionary battleground at Lexington, and the homes of Emerson and Louisa May Alcott in Concord.

The gracious hostesses were Mesdames Bernd, Wyckoff and Rideout.

Besides his helpfulness in many areas of planning and management of the Conference, Mr. Rideout was responsible for soliciting contributions from a number of sponsoring companies whose generosity made it possible for the ladies to enjoy the various tours and meals at no extra charge.

Sponsoring the ladies program were these firms: Birns & Sawyer Cine Equipment, Inc.; Claus Gelotte, Inc.; E. I. du Pont de Nemours & Co.; Eastman Kodak Co.; Edna-Jite, Inc.; Ehrenreich Photo-Optical Industries, Inc.; Giannini Scientific Corp., Flight Research Division; Gordon Enterprises, Inc.; Itek Corporation; Keystone Camera Co.; Mitchell Camera Corp.; Photo-Sonics, Inc.; and Polaroid Corp.

## Equipment Exhibit

The display of the latest equipment in motion pictures, television, instrumentation and high-speed photography — always a center of interest at the Society's Technical Conferences — was in the capable hands of Exhibit Chairman Lester E. Bernd of Cine Service Laboratories.

The 24 exhibitors, some of whom had double booths, were:

Allen Products, Inc.  
Arriflex Corp. of America  
Camera Equipment Co.  
Cine 60 Motion Picture Equipment  
Edgerton, Germeshausen & Grier, Inc.  
Elgeet Optical Co.  
Florman & Babb, Inc.  
Claus Gelotte, Inc.  
Heico, Inc.  
Hi-Speed Equipment, Inc.  
Hollywood Film Co.  
Lipsner-Smith Corp.  
L-W Photo Products, Inc.  
Oxberry Corp.  
Photo-Kinetics, Inc.  
Precision Laboratories Div.  
Quick-Set, Inc.  
S.O.S. Photo-Cine-Optics, Inc.  
Smith's Photographics  
Sylvania Electric Products, Inc.  
Traid Corporation  
U.S. Wav Corp.  
Zoomar, Inc.  
*U.S. Government:*  
U.S. Naval Ordnance Laboratory, White Oak, Md.

Again at this exhibit, a special selection committee picked one of the displays as outstanding for general interest, imagination and effectiveness. The winner this time was Traid Corporation's exhibit of equipment in the fields of instrumentation and high-speed photography.



Exhibit Award winner.



One of the Exhibit rooms.

## Short Film Subjects

Adorning the conference program again was a group of outstanding short films. Those excellent examples of cinematography, shown before the technical sessions and the Tuesday evening awards program, were selected under the chairmanship of John C. Mahon, Jr., of New York University. They were:

*Chuting Stars*, 28 min, 16mm color. Produced by the U.S. Naval Photographic Center. Shows the techniques employed in free fall and landing, featuring the U.S. Navy's Parachute Exhibition Team, and photographed by a free falling cameraman.

*City of the Bees*, 16mm color. Produced by the Moody Institute of Science. Exploration in depth of a beehive, using cinematomacrophography and unusual pulsed lighting techniques to reveal the complex life of the inhabitants.

*The Cliche Family*, 7 min, 16mm black and white. Made by MPO Productions, Inc., New York, for the National Association

of Broadcasters. A humorous catalog of stereotyped situations in television commercials.

*Danze Cromatiche (Color Choreography)*, 16mm color. An impressive abstract film made by Dr. Ugo E. Torricelli of 239 Central Park West, New York City, showing colored forms moving to music.

*At the Crossroads of Life*, 10 min, 16mm black and white. *The New York Hat*, 10 min, 16mm black and white. *Upbeat in Music*, 17min, 16mm black and white. This group of films, shown at the Tuesday evening awards session, is from the Museum of Modern Art Film Library. The first, produced in 1908, was directed by Wallace McCutcheon with D. W. Griffith. *The New York Hat*, directed by Griffith and produced in 1912, features Mary Pickford and Lionel Barrymore. The last film, *Upbeat in Music*, was produced in 1943 in the *March of Time* series.

*Eruption of Kilauea, 1959-1960*, 27½ min, 16mm color. Winner of several international awards, this film, produced by

the U.S. Geological Survey, includes views of lava fountains that reached up to 1,900 feet—the highest ever recorded in Hawaii.

*Goblin on the Doorstep*, 28 min, 16mm color. Produced by Grumman Aircraft Engineering Corporation, with the cooperation of the United States Navy. Using exceptionally beautiful aerial and underwater photography, this film shows the measures taken by the Navy to detect unidentified submarines.

*Human Kidney Transplant*, 20 min, 16mm color. Filmed and edited by Leo Goodman, Mallory Institute of Pathology, Boston City Hospital, and released as a Warren Sturgis Production. Photographed at Peter Bent Brigham Hospital, Boston, the film shows surgery performed by a team headed by Drs. Joseph E. Murray and Hartwell J. Harrison.

*Innovations in Transfusion Therapy*, 28 min, 16mm color. Produced by Churchill Films and sponsored by the American College of Surgeons through a grant from



Elected: Dr. Deane R. White, Joseph T. Dougherty, Wilton R. Holm, Byron Roudabush.




Past President John W. Servies, Mrs. Servies, President Ray, Mrs. Ray, Mrs. Ethan M. Stifle, Executive Vice-President Stifle.

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Leo Goodman films kidney transplant.

Fenwal Laboratories. Beginning with a re-enactment of the first successful blood transfusion (1837), the film uses animation to describe blood components.

*The Laser*, 8 min, 16mm color. Produced for AFSC by the Electronic Systems Division/Mitre Corp. Shows some of the striking properties of coherent light and reviews the development of lasers in relation to aerospace applications.

*Photography in the USAF: Optical Instrumentation at Vandenberg AFB*, 17 min, 16mm color. Produced by the Air Photographic and Charting Service, Military Air Transport Service, United States Air Force. Shows how optical instrumentation during missile launchings is achieved through engineering sequential photography.

*Polacolor*, 30 min, 16mm color. Produced by Bay State Film Productions, Inc., for the Polaroid Corporation. The new Polaroid color process and its applications are described by Dr. Jonathan Karas.

## The Papers Program

The Boston conference was organized into a format of eleven sessions of technical papers and one session of equipment papers and demonstrations. Chairman of the papers program was Morton H. Read of Bay State Film Productions, Springfield, Mass. Mr. Read served under the direction of the Papers Committee Chairman, C. Loren Graham of Eastman Kodak Co., and SMPTE's Editorial Vice-President, Herbert E. Farmer of the University of Southern California.

In organizing the 75 papers into an interesting and significant program, Mr. Read was assisted by Lowell Wentworth, also of Bay State Film Productions. Rodger J. Ross of Canadian Broadcasting Corp., Toronto, served again as Associate Chairman for papers from abroad.

Mr. Read had the support of SMPTE's worldwide Papers Committee and especially that of the Topic Chairmen: Mr.

Wentworth; William D. Hedden of Calvin Productions; Charles W. Wyckoff of Edgerton, Germeshausen & Grier; John J. Kowalak of Movielab, Inc.; Hartford W. Gunn, Jr., WGBH-FM and TV; Robert C. Lovick, Eastman Kodak Co.; Edward W. Palmer, New England Telephone & Telegraph Co.; and Willard H. Hauser, WBZ-TV.

The printed program was carried out with no cancellations, but with two additional papers and some papers transposed within the program.

The first three technical sessions were devoted to "Photography in Medicine," and were chaired by Mr. Wentworth, Leo Goodman and Malcolm Ferguson. The program opened with a paper entitled "Contrast and Detail Perception in Television and Cine Systems for Medical Fluoroscopy," by E. W. Webster and R. Wipfelder of Massachusetts General Hospital. Three papers were presented by Dr. George Berci of the University of Washington School of Medicine: "The Potentials and the Application Possibilities of a Television X-Ray Image Storage Apparatus," "The Technical Problems in Endoscopic Cinematography" and "A Miniature Television Camera for Endoscopic Purposes."

A paper on "Cinemicriophotography of Blood Flow in Man" was given by Dr. R. E. Wells of Peter Bent Brigham Hospital, Drs. E. R. Schildkraut and S. Teicher of Harvard Medical School, and H. E. Edgerton of Massachusetts Institute of Technology. A companion paper, "Use of a Double-Flash Strobe for Estimating Capillary Flow Rates in the Bulbar Conjunctiva of Man," by Dr. Searle Rees of Harvard Medical School and Dr. Edgerton, David Saunders and David La Forge of MIT also was presented.

Other papers in the sessions on "Photography in Medicine" and their authors were: "A Television X-Ray Image Amplifier," Dr. R. Brian Holmes, Toronto General Hospital, and Roy Liggins, X-Ray and Radium Ltd., Don Mills, Ont., Canada; "Research Documents for Psychotherapy," Jacques D. Van Vlack, Eastern Pennsylvania Psychiatric Institute; "Cinegastroscopy With the Fiberscope," Dr. Henry Colcher, Columbia University; "Stereo-cineradiography," Dr. Majic S. Potsaid, Massachusetts General Hospital.

Also: "Endoscopic Photography Through the Fiberscope," Dr. Basil I. Hirschowitz, University of Alabama Medical Center; "Time-Lapse Motion-Picture Studies of Living Cells in Division" and "Advances in Polarized Light Microscopy," by Shinya Inoue of Dartmouth Medical School; "Image Amplification and Television for Medical Education," Dr. Henry P. Pendergrass, Harvard Medical School; "X-Ray Time-Lapse Studies of Living Bone," Dr. Howard J. Barnhard, University of Arkansas; "Microelectrophoresis: The Fabrication and Use of the Five-Barrel Microelectrode," Malcolm Ferguson, National Institutes of Health; and "Organizing a Cinematographic Unit for Research Study of Neuropsychiatric Patients," F. D. Wallace, Veterans Administration Hospital, Lexington, Ky.

John J. Kowalak was Chairman for the Tuesday morning session on "Laboratory Practice," with Edgar A. Schuller as

Vice-Chairman. The opening paper, "Some Aspects in the Design of a 16mm Editing Machine and a Combined 35mm/-16mm Film Cleaner/Waxer," was presented by John J. Rigby of Robert Rigby, Ltd.

Other papers, with authors, in this session were "Rapid Processing of a Panchromatic Negative Film by the Application of a Viscous Monobath," G. J. Johnston, W. H. Bahler and J. C. Barnes, Eastman Kodak Co.; "A Method for Converting Subtractive Timing and Color Balance Printing Data to Additive Printer Settings," Frederick F. H. Dobbs, National Film Board, Montreal; "Metro-Kalvar Motion-Picture and Television Film," Noel R. Bacon, Metro-Kalvar; "Gevacolor Positive T953," Louis A. Meeussen, Gevaert Co.; "Techniscope," Wadsworth E. Pohl, Technicolor Corp.; "Comparison of Projected Images," Haven Falconer, Metro-Goldwyn-Mayer, Inc.; "A Thin Splice for 35mm Motion-Picture Film" Lester P. Freer, Eastman Kodak Co.; "Matting Techniques Used in Motion-Picture Production," Robert D. Pittluck, Cineffects, Inc., and "Optical Effects," Maurice Levy, Eastern Effects, Inc.

The well-attended Tuesday afternoon session on "8mm/Small-Format Film" was under the chairmanship of William D. Hedden, with Allen F. Hilliard as Vice-Chairman. The opening paper, "8mm Test Film Story," was presented by Geo. W. Colburn of Geo. W. Colburn Laboratory, Inc., and was followed by "The Challenge Offered and the Responsibility Imposed Upon Motion-Picture Professionals by Mass Utilization of 8mm Sound Film" by F. Borden Mace of Heath de-Rochemont Corp.

Other papers in this session were "8mm Sound—A Review of Progress," R. G. Hennessey, Fairchild Camera and Instrument Corp.; "Magnetic and/or Optical Sound for 8mm Films," Hans F. Napfel, Fairchild; "8mm Sound—The Film in Education," Nat C. Myers, Jr., Fairchild; "A Technical Program for 8mm Educational Sound Film," John A. Maurer, JM Developments, Inc.; "Photographic Variable-Area Sound Recording for 8mm Film," J. J. Kuehn, J. J. Kuehn Sound Film Laboratory, and "8mm Variable-Area Sound: Key to an Audio-Visual Revolution," Joel Willard, Joel Willard Productions.

The Wednesday morning equipment papers and demonstrations featured a number of the devices on display in the conference's Equipment Exhibit. Chairman for this session was Lester E. Bernd; Simeon Braunstein was Vice-Chairman. The papers:

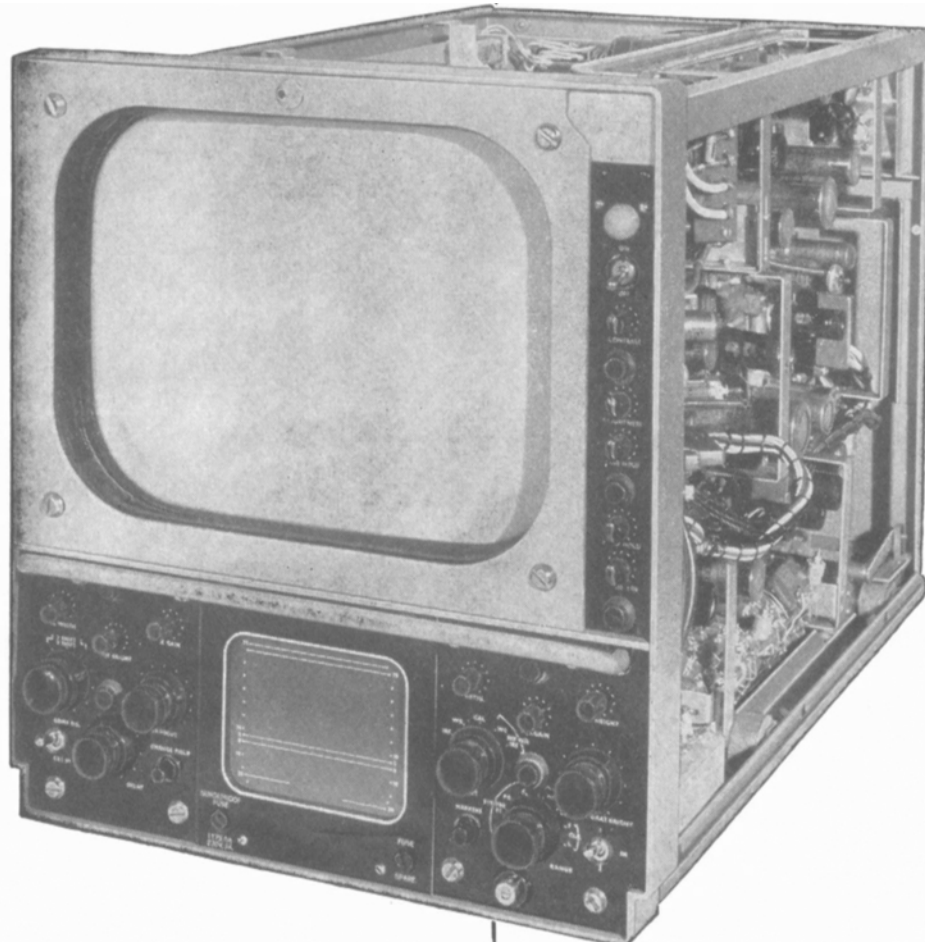
"New XR Film," Charles W. Wyckoff, Edgerton, Germeshausen & Grier; "Vanguard Motion Analyzer," Dick Freeberg, Traid Corp.; "Hycam High-Speed Camera," Hy Shaffer, Smith's Photographics; "Professional Sun Gun Lighting Equipment," Edward C. Gilchrist, Sylvania Electric Products, Inc.; "New Arri Fiberglass Blimp for Use Interchangeably With Arri 16 and Arri 16M," Victor James, Arriflex Corp. of America; "Angenieux 10:1 Zoom Lenses for 16 & 35 Motion-Picture Photography," Authur Dorman, Zoomar, Inc.; "Laminar Flow Clean Work Stations," Boyd Agnew, Hollywood

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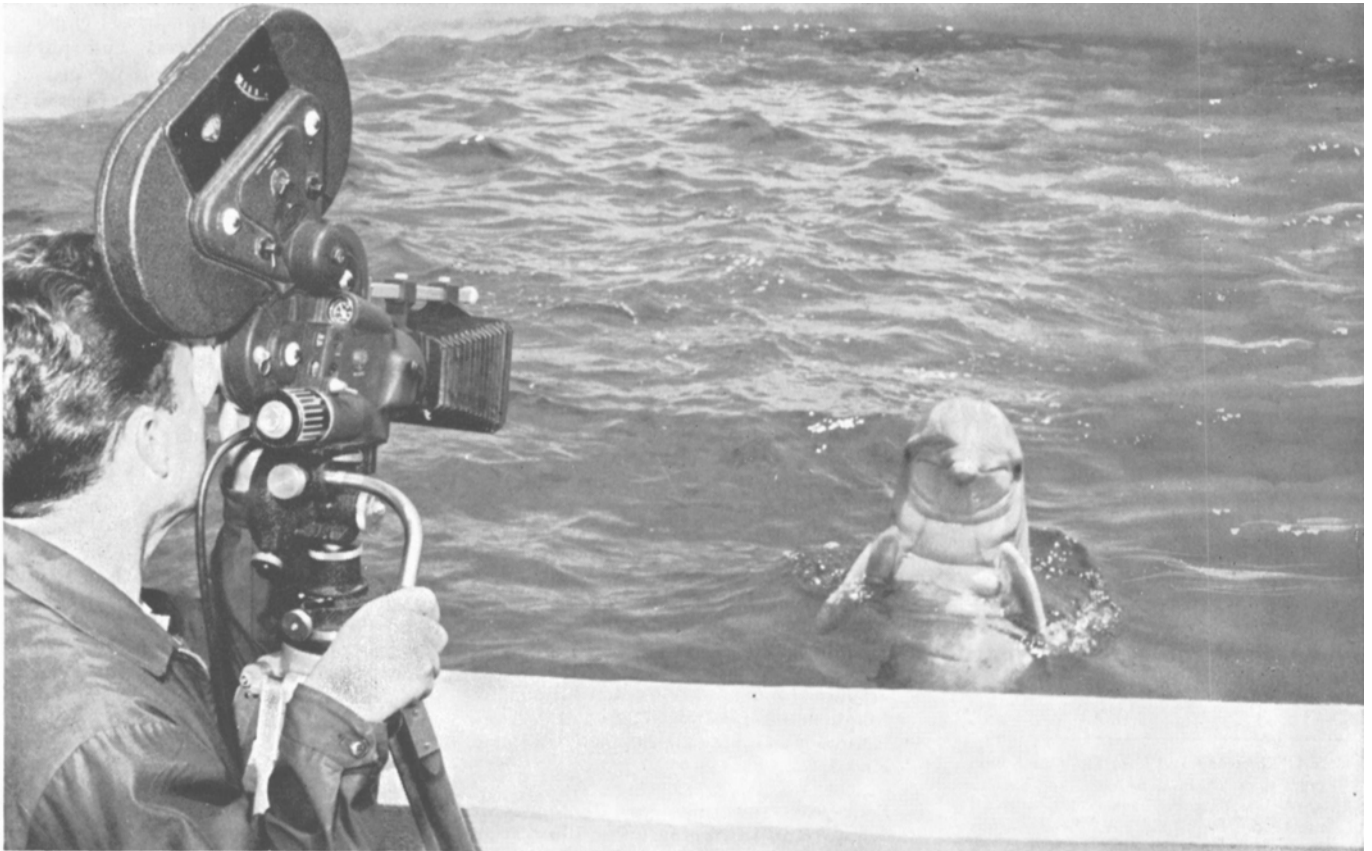
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