

COMMISSION V

SPECIAL APPLICATIONS AND MEASUREMENTS

EIGHTH INTERNATIONAL CONGRESS
AND
EXPOSITION OF PHOTOGRAMMETRY
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Introduction

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"IT is believed that a greater utilization of photographic instrumentation will develop in proportion to the integration of metrics and scientific photography and the time required to make known the availability of such a system to organizations that will be most economically or professionally benefited." The quotation was the concluding remark in this reporter's paper presented at the Seventh International Congress and Exposition of Photogrammetry at Washington, D. C., September, 1952. The definition of photographic instrumentation has been defined by Shaftan as: "The use of the photosensitive medium for the detection, recording and/or measurement of scientific and engineering phenomena."

Armed with this concept as an initial approach, contact has been made with scientific, technical, and administrative personnel representing a diversified field of special applications and measurements. The diversification is of such a wide range that only two of the ten authors contributing to this report are members of the American Society of Photogrammetry.

One of the most effective means of selling photogrammetry on a solid and permanent basis is through scientists and engineers inasmuch as scientists and engineers are the next potential users. The science of photogrammetry will mature comprehensively only after it serves a professional or economic need. First; the scientists and engineers must be introduced to the science and art of photogrammetry. Second; methods, techniques, and instrumentation must be made available that are compatible with accuracy, cost, and operational requirements. This evolution will come to pass through word and example, however the process will be accelerated through example.

Fully realizing that prognostications are always dangerous, it is predicted, nevertheless, that the national gross product in the United States of *specialized applications and measurements* will exceed that of *aerial topographic mapping* within the next generation.

Short biographical sketches of the authors of the Commission V Report for the United States are presented as introductory material and to demonstrate

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the comprehensive experience and educational background supporting the technical papers.

Mr. Everett L. Merritt attended Mt. Union College, San Diego College and George Washington University. During World War II he was in charge of a Marine combat mapping unit in enemy-held Pacific Ocean Islands. He was awarded the Bronze Star for heroic mapping work during the assault on Saipan and Tinian. After the war, Mr. Merritt was in charge of photogrammetric research at the U. S. Naval Photographic Interpretation Center. He participated in the 1947-48 U. S. Naval Antarctic Expedition. Mr. Merritt was Technical Director of Photogrammetry, Inc., from 1952 to 1954, during which time the MM-101 Surveying Camera and the Collimating Camera Calibrator were completed under his direction. Also, during this period he received the Talbert Abrams Award of the American Society of Photogrammetry. Presently, Mr. Merritt is a photogrammetric consultant, with emphasis on development and analysis of photo-metrical systems. He is the author of numerous research reports, technical bulletins, and technical papers; currently he is authoring a book entitled "Analytical Photogrammetry." He is a member of the American Society of Photogrammetry, Optical Society of America, the Society of American Military Engineers, and the Society of Photographic Engineers.

Dr. Peter van de Kamp is Director of Sproul Observatory and Professor of Astronomy at Swarthmore College. He holds doctors degrees from the University of California and Groningen University. He has taught astronomy at the University of Virginia, Harvard University, the New School for Social Research and Swarthmore College. He was a Fulbright professor in France and has given lectures at the Universities of Utrecht, Leiden, Paris, Hamburg, Kiel, and others. His early research was mostly in statistical astronomy. Since 1937 he has concentrated on a precision positional study of nearby stars, with particular emphasis on the masses of double stars and the discovery of faint unseen companions to stars through their gravitational disturbing effect. His book "Basic Astronomy" was written for the serious layman. He recently served as Program Director for Astronomy with the National Science Foundation. He is a Vice President of the American Association for the Advancement of Science and Chairman of the Astronomy Section of that association.

Mr. David B. Scott is Chief of the Laboratory of Histology and Pathology of the National Institute of Dental Research. He holds degrees from Brown University, the University of Maryland and the University of Rochester, and has been a commissioned dental officer on active duty with the Public Health Service for the past twelve years. The investigations of the dental tissues with the electron microscope carried on in his laboratory have received wide recognition; in addition to being the author or co-author of many publications, he has lectured extensively on the subject throughout this country and abroad. Dr. Scott was recently the recipient of one of the Arthur S. Flemming awards presented by the Washington Junior Chamber of Commerce to the ten outstanding young men in the Federal Government for 1955.

Mr. Karl Joseph Fairbanks has been active in the aviation field since 1924. He has served as one of the early research engineers with the N.A.C.A. Langley Memorial Laboratories and later as an aeronautical engineer with many leading U. S. aircraft firms. He has been associated with the Fairchild Aviation Interests for the past thirteen years in an executive capacity and was previously associated with them in 1928-1930. In addition to being active head of Sherman Fairchild & Associates, Inc., he is a personal assistant to Mr. Sherman M. Fairchild. He is an Associate Fellow in the Institute of Aeronautical Sciences, is a Licensed Professional Engineer and has B.S. and M.S. degrees in Aeronautical Engineering from the University of Michigan and New York University, respectively. He was a member of the Faculty of New York University for nine years. Mr. Fairbanks is listed in "Who's Who in the East," "Who's Who in Aviation," and "Who's Who in Engineering."

Mr. John H. Waddell studied chemistry at Penn State College. He has been associated with the Dupont Film Manufacturing Corporation, Bell Telephone Laboratories for 21 years, Manager of Industrial and Technical Photographic Division of the Wollensak Optical Company for 4½ years, and Marketing Manager of Photographic Instrumentation, Fairchild Camera and Instrument Corporation, for the past year. Mr. Waddell has been a consultant on photographic instrumentation to a number of military and industrial organizations and is the author of many articles and co-author with his wife of "Photographic Motion Analysis." Mr. Waddell is a Fellow, Royal Photographic Society and Fellow, Society of Motion Picture and Television Engineers.

Mr. T. Erwin Blesh is Associate Professor of Physical Education at Yale University and has been on the faculty there for 11 years. For the preceding 12 years, he was on the faculty at San

José State College, San José, California. He holds degrees from Springfield College, Springfield, Mass. (B.S.); San José State College (B.A.); Stanford University (M.A.); and Yale University (Ph.D.). Since 1947 Dr. Blesh has taught summer sessions for graduate students in physical education at the University of Alabama, Springfield College, University of Pittsburgh, Rhode Island College of Education, and Northwestern University. His work at Yale is in connection with the Teacher Education program in Physical Education and with the Posture program for Freshman students.

Mr. Theodore Yonkler is President of The PhotoMetric Corporation and co-inventor of some of the PhotoMetric patents. He has been President of The Hugh Davis Corporation, which was the first tailoring company to employ PhotoMetric. He was instrumental in developing ways and means of employing PhotoMetric in tailoring. Just recently he has published his Posture and Size Graph to be used in connection with the PhotoMetric screen.

Mr. Wm. F. Engelmann acquired practical training as an optical instrument maker and pursued the study of engineering in Berlin. He searched for a method that would quickly record and reproduce surfaces that were difficult to measure and duplicate, for example: streamlined surfaces on automobiles and aircraft, or odd shaped anatomical surfaces. He then had the idea of utilizing photography for this purpose. His engineering training, and practical experience in optical instrument making, and interest in photography gave him a sound background to devise the method and design the equipment described in his paper. Mr. Engelmann is now designing and making the necessary equipment for a more automatic process as described in U. S. Patent Number 1,594,607.

Mr. Julius Halsman is Chief of the Photography Division, Armed Forces Institute of Pathology. He is a charter member of the Society of Photographic Engineers and a member of the Biological Photographic Association. Mr. Halsman is also a member of the Sub-Committee on Oncology of the Committee on Pathology of the National Research Council and the Faculty Department of the Agriculture Graduate School. Mr. Halsman serves as medical photographic consultant to various agencies of the United States Government and is a technical supervisor for the Surgeon General of the Army under the Director, Armed Forces Institute of Pathology of the Medical Illustration Section for named Army hospitals. Mr. Halsman is an author and lecturer on medical photography.

Mr. Gomer T. McNeil studied Civil Engineering and Photogrammetry at Syracuse University and received a BCE degree in 1939. He has been employed by the Tennessee Valley Authority, Army Ordnance Department, Army Air Corps, and Bell Aircraft Corporation. During World War II, he served as a Naval Photographic Interpretation Officer in the Pacific theater. He was employed by the U. S. Naval Photographic Interpretation Center as Head of the Photogrammetry Department for 3 years. In 1952, Mr. McNeil organized Photogrammetry, Inc. He is the author of "ABC's of Photogrammetry" and "Photographic Measurements." He has been active in the American Society of Photogrammetry, serving as Chairman of the Publications Committee, United States Correspondent for *Photogrammetria*, Exhibits Chairman, Chairman of the Research Committee for 2 years, Board of Directors for 3 years, and Executive Committee for 2 years. Mr. McNeil was the Navy representative at the Seventh International Congress and Exposition of Photogrammetry at The Hague in 1948. He is also a Registered Professional Engineer in the State of Maryland and the District of Columbia.