

ADDRESSES

The listing below comprises the principal recent addresses made by APL staff members to groups and organizations outside the Laboratory.

- R. E. Gibson, "Cultural Implications of Scientific Research," *Catonsville Community College*, Catonsville, Md., Jan. 11, 1963.
- A. G. Carlton, "Adaptive Methods in Navigation," *Institute of Electrical and Electronic Engineers*, Baltimore, Jan. 15, 1963.
- R. E. Kemelhor, "Methods for Checking Hazardous Circuits Immediately Prior to Launch," *Institute of Aerospace Sciences*, New York, Jan. 21, 1963.
- H. L. Olsen, "Description and Capability of the Propulsion Research Laboratory," *Atlantic Research Corporation*, Alexandria, Va., Jan. 22, 1963.
- G. Veth, "High-Density Microelectronic System Realization," *Institute of Electrical and Electronic Engineers*, Los Angeles, Jan. 30-Feb. 1, 1963.
- R. T. Ellis, "APL and the Transit Satellite," *Lions Club*, Ellicott City, Md., Feb. 4, 1963.
- A. A. Westenberg, "Chemistry and Supersonic Flow," *Princeton University*, Baetjer Lecture, Department of Aeronautical Engineering, Feb. 6, 1963.
- G. F. Pieper, "Artificial Radiation Belt," *The Johns Hopkins University*, Department of Physics, Baltimore, Feb. 7, 1963.
- J. O. Artman, "Crystal Field Theory with Applications to the Ruby Problem," *Harry Diamond Laboratories*, Crystal Field Seminar, Washington, D. C., Feb. 8, 1963.
- N. H. Choksy, "Compensation Design with an Adaptive Device," *I.E.E.E.—A.S.M.E.*, Joint Automatic Control Group of Baltimore, Baltimore, Feb. 12, 1963.
- J. T. Morgenthaler, "Surface Vaporization Studies with No. 2 Fuel Oil," *American Society of Heating, Refrigerating, and Air Conditioning Engineers*, New York, Feb. 12, 1963.
- O. P. Norton, "Viewpoint of Management," *U. S. Army Intelligence School*, Ft. Holabird, Md., Feb. 12, 1963.
- G. H. Albrecht, "Some Aspects of Professional Employment in Chemistry," *Howard University*, Chemistry Department Graduate Seminar, Feb. 14, 1963.
- G. C. Weiffenbach, "The ANNA Satellite," *Baltimore Astronomical Group*, Baltimore, Feb. 18, 1963.
- G. H. Albrecht, "Soviet CBR Threat," *Naval Reserve Unit*, Navy Gun Factory, Washington, D. C., Feb. 19, 1963.
- A. F. Andrus, "War Games," *Naval Postgraduate School*, Monterey, Calif., Feb. 21, 1963.
- H. B. Riblet, "ANNA Instrumentation and Telemetry," *Institute of Electrical and Electronic Engineers*, Washington, D. C., Mar. 5, 1963.
- F. T. McClure, "Theory of Resonance in Solid Rocket Combustion," *Institute for Aerospace Sciences and National Aeronautics and Space Administration*, National Propulsion Meeting, Cleveland, Mar. 7, 1963.
- R. E. Gibson, "The Johns Hopkins University Applied Physics Laboratory and Its Work," *Illinois Alumni Association of The Johns Hopkins University*, Chicago, Mar. 13, 1963.
- J. Dassoulas, "Transit/ANNA Flight Test Operations," *American Institute of Aeronautics and Astronautics*, Cocoa Beach, Fla., Mar. 19, 1963.
- L. M. Spetner, "The Orthodox Jew Faces the Nuclear Era," *Southeast Region, Union of Orthodox Jewish Congregations of America*, Nashville, Mar. 22-24, 1963.
- A. F. Hogrefe and S. M. Warren, "The ANNA Earth Satellite Telemetry System—Space Telemetry by Hybrid Techniques," *Institute of Electrical and Electronic Engineers*, New York, Mar. 25-28, 1963.
- A. Simon and F. E. Shirk, "A Trace Identifier Unit for FM-FM Tuning," *Institute of Electrical and Electronic Engineers*, New York, Mar. 25-28, 1963.
- Jane Olmer, "Text Edit, Search or Select, and Print on 1401," *Information Retrieval Workshop*, sponsored by Douglas Aircraft Corp. and IBM Data Processing Div., San Jose, Calif., Mar. 25-27, 1963.
- R. B. Kershner, Keynote Address, *American Society of Photogrammetry and American Congress of Surveying and Mapping*, Joint Conference, Washington, D. C., Mar. 26, 1963.
- S. D. Bruck, "New Polyoxamidation Catalysts," *American Chemical Society*, Los Angeles, Mar. 31-Apr. 5, 1963.
- A. G. Schulz, "Lasers and Masers," *Enoch Pratt Free Library*, Public Lecture, Baltimore, Apr. 2, 1963.
- A. A. Westenberg, "Gas Transport Property Studies," *University of Delaware*, Chemical Engineering Seminar, Apr. 11, 1963.
- L. M. Spetner, "Natural Selection as an Information Channel for Evolution," *The Johns Hopkins University*, Department of Electrical Engineering, Baltimore, Apr. 17, 1963.

APL COLLOQUIA

Feb. 14—"Results from the Mariner II Spacecraft," a special lecture by C. W. Snyder, Jet Propulsion Laboratory.

Feb. 15—"Use of Digital Computers for Circuit Design," by G. Leichner, University of Illinois.

Mar. 1—"New Events in the Physics of Polymers," by H. Mark, Brooklyn Polytechnic Institute.

Mar. 8—"Sampled Data Systems," by J. Ragazzini, New York University.

Mar. 15—"Ultrasonic Spectroscopy in Liquids," by T. Litovitz, Catholic University.

Mar. 22—"Design Studies for 300 to 1000 Bev Accelerators and the Future of Large Accelerators," by J. Blewett, Brookhaven National Laboratory.

Apr. 5—"Recent Work on Nuclear Structures," by M. Baranger, Carnegie Institute of Technology.

Apr. 12—"Magnetoelectric Effects in Antiferromagnets," by G. Rado, Naval Research Laboratory.

JOURNAL PUBLICATIONS

The following list is a compilation of recently published books and technical articles written by APL staff members.

- R. G. Bartlett, Jr., "Pulmonary Function Evaluation in Air and Space Flight," *Ind. Med. and Surg.*, **32**, Jan. 1963, 2-8.
- R. G. Bartlett, Jr., "'Subclinical' Respiratory Disease and Altitude Tolerance in the Rat," *Aerospace Med.*, **34**, Jan. 1963, 18-21.
- R. G. Bartlett, Jr., "A Study of CO₂ Buildup with the Neck Seal Substituted for the Face Seal in the Full Pressure-Suit Helmet," *Aerospace Med.*, **34**, Jan. 1963, 30-34.
- R. E. Gibson, "A Systems Approach to Research Management—Part 3. The Operation and Management of Research and Development Organizations," *Research Management*, **VI**, Jan. 1963, 15-27.
- H. J. Riblet, "The Coupling Coefficients of an Unsymmetrical High-Q Lossy Waveguide Resonator," *I.E.E.E. Trans. on Microwave Theory and Techniques*, **MTT-11**, Jan. 1963, 78-83.
- B. H. Nall, "Acoustic Attenuation in a Solid Propellant," *J. Am. Inst. of Aeronautics and Astronautics*, **1**, Jan. 1963, 76-79.
- G. F. Pieper, "A Second Radiation Belt from the July 9, 1962 Nuclear Detonation," *J. Geophys. Res.*, **68**, Feb. 1, 1963, 651-656.
- G. F. Pieper and D. J. Williams (APL) and L. A. Frank (State University of Iowa), "TRAAC Observations of the Artificial Radiation Belt," *J. Geophys. Res.*, **68**, Feb. 1, 1963, 635-640.
- A. J. Zmuda, B. W. Shaw, and C. R. Haave, "VLF Disturbances and the High-Altitude Nuclear Explosion of July 9, 1962," *J. Geophys. Res.*, **68**, Feb. 1, 1963, 745-758.
- A. J. Zmuda, G. F. Pieper, and C. O. Bostrom, "Solar Protons and Magnetic Storms in February 1962," *J. Geophys. Res.*, **68**, Feb. 15, 1963, 1160-1165.
- G. E. Friedman and A. W. Nagy, "Iron Sapphire Maser with No Magnetic Field," *Proc. I.E.E.E.*, **51**, Feb. 1963, 361-362.
- R. W. Hart and R. H. Cantrell, "Amplification and Attenuation of Sound by Burning Propellants," *J. Am. Inst. of Aeronautics and Astronautics*, **1**, Feb. 1963, 398-404.
- R. E. Walker, A. R. Stone, and M. Shandor, "Secondary Gas Injection in a Conical Rocket Nozzle," *J. Am. Inst. of Aeronautics and Astronautics*, **1**, Feb. 1963, 334-338.
- F. J. Adrian, "Electric Field Gradient Asymmetry in Solid Chlorine," *J. Chem. Phys.*, **38**, Mar. 1, 1963, 1258.
- E. J. Blau, B. F. Hockheimer, J. T. Massey, and A. G. Schulz, "Identification of Lasing Energy Levels by Spectroscopic Techniques," *J. App. Phys.*, **34**, Mar. 1963, 703.
- R. G. Bartlett, Jr., "Design Concepts for Dome-Type Helmet Improvements," *Aerospace Med.*, **34**, Mar. 1963, 213-217.
- F. T. McClure, R. W. Hart, and R. H. Cantrell, "Interaction Between Sound and Flow: Stability of T-Burners," *J. Am. Inst. of Aeronautics and Astronautics*, **1**, Mar. 1963, 586-590.
- N. H. Choksy, "Time Lag Systems," in *Progress in Control Engineering*—1, Heywood and Co. Ltd., London, 1962.

PATENTS

- U. S. Government patents recently issued to Laboratory staff members for inventions produced in support of APL objectives.
- C. W. Brown, I. J. Shepperd, and F. B. Werner—*Automatic Radio Navigation*, Patent No. 3,076,192.
- W. F. Williams—*G-Actuated Air Controlled Time Delay*, Patent No. 3,077,160.
- C. M. Blackburn—*Pressure Switch*, Patent No. 3,077,524.
- S. Kongelbeck—*Mercury Actuated G-Triggered Time Delay*, Patent No. 3,078,722.

HONORS AND APPOINTMENTS

Robert E. Fischell, supervisor of the Power System and Attitude Control Project of the Satellite System Engineering Group, was a recent recipient of a 1963 National Capital Award from the Council of Engineering and Architectural Societies and the Washington Academy of Sciences.

Isadore Katz, a member of the Preliminary Design Group staff, has been named an American delegate to the triannual meeting of the International Scientific Radio Union (U.R.S.I.). This meeting will be held in Tokyo, Japan, in September 1963. Mr. Katz is Secretary of the Tropospheric Propagation Commission of the National Committee of the U.R.S.I.

Arthur A. Westenberg, supervisor of the High Temperature Physics and Chemistry Project of the Bumblebee Flight Research Group, was recently elected to fellowship in the Washington Academy of Sciences.

WITH THE AUTHORS

M. Shandor, a co-author of "Secondary Gas Injection Thrust Vector Control," is a native of St. Clair, Pa.



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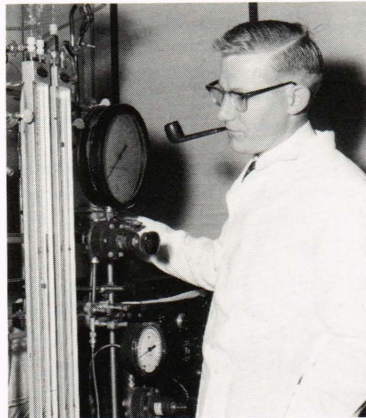
and, in 1946, his M.S. degree in physics from De Paul University, Chicago. Mr. Shandor was employed at the University of Chicago Metallurgical Laboratory (Manhattan District Project) from 1944-1947 and attended the first Bikini Atoll A-Bomb tests in 1946. After two years as a teaching assistant in physics at Pennsylvania State University, he came to APL in 1950 as a physicist. He is a member of the Jet Control Project of the Controls Group. Mr. Shandor is a member of the American Institute of Aeronautics and Astronautics.

A. R. Stone, a co-author of "Secondary Gas Injection Thrust Vector Control," is a native of New York



City. He received an honorary degree in mechanical engineering from Stevens Institute of Technology in 1958. Mr. Stone has been owner-manager of small engineering companies and was later employed in various capacities by Aberdeen Proving Ground, Gerotor May Corp., Progress Engineering and Development Corp., Maryland Electronic Manufacturing Corp., and Vitro Laboratories. He came to APL in 1954 as a specialist in design and development of electro-mechanical and hydraulic control components and systems, holding eighteen patents in this field. He is a member of the Jet Control Project of the Controls Group. Mr. Stone is a registered professional engineer in the State of Maryland and is a member of the American Institute of Aeronautics and Astronautics.

R. E. Walker, a co-author of "Secondary Gas Injection Thrust Vector Control," was born in Avon, So. Dakota. He received his B.S. degree in physics from the South Dakota School of Mines and Technology, his M.S. in physics and, in 1958, his Ph.D. in physics from the University



of Maryland. Dr. Walker came to APL in 1951 as a specialist in gas physics. He is currently engaged in applied research on thrust vector control systems for solid-propellant rocket motors. He is supervisor of the Jet Control Project of the Controls Group. Dr. Walker is a member of the American Physical Society, the American Institute of Aeronautics and Astronautics, and the National Rifle Association.

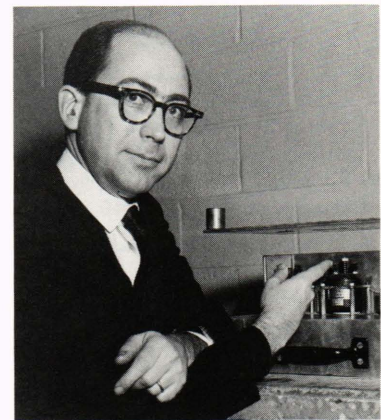
T. C. Cheston, co-author of "Constant-K Lenses," was the author of "Criteria for Conically-Scanned Tracking Antennas" in the May-June 1962 issue of the *Digest*.

E. J. Luoma, co-author of "Constant-K Lenses," was born in Eben, Mich. He received his B.A. degree in mathematics from Northern Michigan College and continued at Ohio State University with graduate work in physics. From 1942-1958, he was employed as an electronics scientist at Wright-Patterson Air Force Base, Ohio, in which capacity he was concerned with such electronic components as transmission lines and radomes. His next position was with Corning Glass Works where, as an



applications engineer, he worked on the development of ceramic radomes. Mr. Luoma is currently employed as a physicist by Emerson and Cuming, Inc., Canton, Mass., where electrical design of spherical lenses is his major work.

J. P. Kearns, author of "Missile-Wing Flutter Simulation," is a native of Beavertown, Pa., and received his B.S. degree in mechanical engineering from Pennsylvania State University in 1942. He was employed by Chance Vought Aircraft as a flutter and vibration analyst and test engineer from 1943-1950, and joined APL in 1951. As an engineer in the Bumblebee Engineering Group and later as a



project supervisor in that group, Mr. Kearns has been concerned with vibration research and flutter analysis relative to the APL missile programs. He is a member of the American Institute of Aeronautics and Astronautics.