

PUBLICATIONS

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

- H. B. Munson, Jr., "Frequency Control of Pulsed GaAs Gunn Effect Diodes by Injection Locking," *Proc. I.E.E.E.*, **53**, No. 11, Nov. 1965, 1781-1782.
- R. R. Newton, "An Observation of the Satellite Perturbation Produced by the Solar Tide," *J. Geophys. Res.*, **70**, Dec. 15, 1965, 5983-5989.
- S. M. Yionoulis, "A Study of the Resonance Effects Due to the Earth's Potential Function," *J. Geophys. Res.*, **70**, Dec. 15, 1965, 5991-5996.
- J. G. Parker and R. H. Swope, "Vibrational Relaxation in Methane-Oxygen Mixtures," *J. Chem. Phys.*, **43**, Dec. 15, 1965, 4427-4434.
- A. I. Mahan, "Absorption, Spontaneous Emission, Stimulated Emission, and Maxwell's Equations," *J. Opt. Soc. Am.*, **55**, Dec. 1965, 1611-1616.
- J. F. Bird, R. W. Hart, and F. T. McClure, "Finite Acoustic Oscillations and Erosive Burning in Solid Fuel Rockets," *A.I.A.A. J.*, **3**, Dec. 1965, 2248-2256.
- E. A. Bunt, "Similarity Considerations Applied to the Transition from Normal Rising Flow to Full Flow in Bellmouthed Intakes," (Synopsis,) *Proc. Inst. Civil Engrs.*, **32**, Dec. 1965, 600.
- B. F. Hochheimer, "Spectrum of a Fabry-Perot Resonant Cavity Containing an Active Medium," *Appl. Optics*, **5**, Jan. 1966, 113-120.
- F. T. McClure, R. H. Cantrell, and R. W. Hart, "Theoretical Considerations Relating to the Effect of Injector Design on Unstable Burning of Liquid Propellant Rocket Motors," *A.I.A.A. J.*, **4**, Jan. 1966, 84-91.
- A. J. Zmuda, C. R. Haave, and B. W. Shaw, "VLF Phase Perturbations Produced by the Soviet High-Altitude Nuclear Explosion of November 1, 1962," *J. Geophys. Res.*, **71**, Feb. 1, 1966, 899-910.

COLLOQUIA

Feb. 4—"Oscillating Instabilities in Diffusing Gases," by E. A. Mason, University of Maryland.

Feb. 11—"Computerized Animation for Educational Films," by W. H. Huggins, The Johns Hopkins University.

Feb. 18—"On the Origin of Our Local System of Galaxies," by O. Klein, University of Stockholm and Brandeis University.

Feb. 25—"Astrophysical Evidence for the Direct Electron-Neutrino Interaction," by Hong-Yee Chiu, Goddard Institute of Space Studies.

Mar. 4—"Blocks to Creativity," by L. S. Kubie, Sheppard-Pratt Hospital.

Mar. 11—"Seismic Arrays," by R. A. Frosch, Advanced Research Projects Administration.

Mar. 25—"Noise in Laser Oscillators," by M. Lax, Bell Telephone Laboratories.

HONORS AND APPOINTMENTS

R. E. Gibson, Director of the Applied Physics Laboratory, has been elected a Corresponding Member of Section 2 of the International Academy of Astronautics of the International Astronautical Federation.

R. E. Walker, Project Supervisor in the Hypersonic Propulsion Group, received the 1965 Washington Academy of Sciences Award for Scientific Achievement in the Engineering Sci-

ences. Dr. Walker was given this award for "major improvements in rocket design, analysis, and performance."

A. G. Schulz, Co-Supervisor of the Excitation Mechanisms Group in the Research Center, has been appointed Associate Professor in the Department of Radiological Science, School of Hygiene and Public Health, The Johns Hopkins University.

C. K. Jen, Vice Chairman of the Research Center, has been named by Dr. Milton S. Eisenhower, President of The Johns Hopkins University, as the first recipient of the William S. Parsons Professorship.

W. G. Spohn, a member of the Bumblebee Dynamics Group, has been selected by the Parsons Fellowship Committee as the William S. Parsons Fellow for 1966-67.

ADDRESSES

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

R. T. Ellis, "Satellites and Scientists," *Joint Meeting of Washington and Baltimore Chapters*, American Institute of Chemists, Nov. 9, 1965.

V. W. Pidgeon, "An Introduction to Radar and Some of Its Applications," *Physics Department, Uni-*

versity of Alabama, Tuscaloosa, Ala., Dec. 14, 1965.

F. B. Proctor, "APL and the Community," *Chillum Lions Club*, Hyattsville, Md., Jan. 5, 1966.

F. T. McClure, "Laws—Scientific, Moral, and Political," *Washington*

Academy of Sciences, Washington, D.C., Jan. 20, 1966.

R. M. Fristrom, "Molecular Beams and Chemical Kinetics," *Joint Physics-Chemistry Seminar, Chemistry Department, Reed College*, Portland, Ore., Jan. 26, 1966.

ADDRESSES

(continued)

- F. T. McClure, "The Navy Navigation Satellite System," *The Johns Hopkins Review*, Station WJZ-TV, Baltimore, Md., Feb. 6, 1966.
- S. I. Solomon, "Seminar in Computer Sciences," *University of Pittsburgh*, Pittsburgh, Pa., Feb. 15, 1966.
- R. B. Kershner, "Status of the Navy Navigation Satellite System," *American Astronautical Society*, National Meeting on Practical Space Applications, San Diego, Calif., Feb. 21, 1966.
- F. A. Droms, Jr., "Survey of APL Satellite Programs," *2391st U.S. Army Reserve Unit*, U.S. Army Reserve Center, Alexandria, Va., Feb. 21, 1966.
- V. M. Root, "Technical Writing in the United States Today," *First Convention of the Society of Technical Publications Contractors*, London, England, Feb. 22, 1966.
- H. H. Porter, "Military Tactics and Countertactics," *The Johns Hopkins Review*, Station WJZ-TV, Baltimore, Md., Feb. 27, 1966.

- G. E. Moul, Jr. and R. W. Fowler—*Radar Antenna Positioning Device*, Patent No. 3,202,015.
- E. Byron—*Mask Changer Means for Vacuum Deposition Device*, Patent No. 3,207,126.
- R. W. Larson—*Ramjet Vent*, Patent No. 3,208,383.
- T. Wyatt—*Hyperbolic Position Determination*, Patent No. 3,209,357.
- J. J. Zelinski—*Fuel Cooled Combustor Assembly*, Patent No. 3,210,928.
- W. Seamone — *Pressure Control Switching Valve*, Patent No. 3,211,063.
- J. B. Garrison—*System for Simultaneously Displaying a Plurality of Radar Images in More Than One Dimension*, Patent No. 3,212,084.
- D. D. Scott—*Tiltable Disc-Type Drive Wheels for Vehicles*, Patent No. 3,212,594.
- R. H. Lapp—*Harmonic Drive*, Patent No. 3,214,999.
- C. J. Swet, J. Dassoulas, and T. Wyatt—*Spacecraft Propulsion Concept*, Patent No. 3,215,365.

- J. W. Follin, Jr. and G. C. Munro—*Direction Cosine Linkage*, Patent No. 3,215,368.
- W. W. Hagner—*Fuel Pressurization System*, Patent No. 3,217,649.
- F. F. Hiltz—*Artificial Neuron*, Patent No. 3,218,475.
- E. L. Nooker—*Multi-Projectile Warhead*, Patent No. 3,218,976.
- W. Seamone and L. A. Wenrich—*Power Matched Hydraulic Servo-System*, Patent No. 3,221,501.
- R. Anspach—*Double-Layer Warhead*, Patent No. 3,223,036.
- E. L. Nooker, C. R. Brown, V. J. Dietz, and H. S. Morton—*Innerbody Continuous Rod Warhead*, Patent No. 3,223,037.
- M. L. Kempton and E. L. Nooker—*Warhead for Missiles*, Patent No. 3,224,371.
- E. L. Nooker—*Multi-Projectile Continuous Rod Warhead*, Patent No. 3,224,372.
- E. L. Nooker and G. W. Galloway—*Resistance Welding Process*, Patent No. 3,225,172.

PATENTS

WITH THE AUTHORS



C. F. Noyes, author of "Ministick Packaging," is a native of China, Maine. He received a B.S. degree in electrical engineering from the University of Maine in 1934. A specialist in electro-mechanical packaging, Mr. Noyes came to APL in 1950 as a Project Supervisor in the Bumblebee Controls Group where he was responsible for instrument specifications, procure-

ment, evaluation, and electronic packaging. Later, as Project Supervisor in the Space Division, he organized a microelectronic subproject that resulted in a thin film laboratory capable of producing simple passive components and operating digital circuits. Currently, Mr. Noyes is supervising an advanced techniques project, in the Space Division, which is concerned with the development of packaging techniques and their application to missiles and spacecraft.



L. Monchick, author of "Quantum Effects in Molecular Scattering," was co-author of "Relaxation Phenomena in the Kinetic Theory of Gases," in the July-August 1962 *Digest*. A native of Boston, Massachusetts, he received a Ph.D. degree in chemistry from Boston University in 1954. Dr. Monchick joined APL in 1957 as a specialist in liquid ammonia calo-



rimetry, evaporation from liquid surfaces, radiation chemistry, diffusion controlled reactions, and calculations of gas transport properties. He is presently a chemist in the Chemical Physics Group of the Research Center. Dr. Monchick is a member of the American Chemical Society, the American Physical Society, and the Washington Academy of Sciences.