

## PUBLICATIONS

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

- L. M. Spetner, "A Set of Stability Constraints on the Denominator of a Sampled-Data Filter," *IEEE Trans. Automatic Control*, **AC-11**, No. 2, April 1966, 327-328.
- W. E. McGrath (South Dakota School of Mines and Technology) and Helen Kolbe (APL), "A Simple, Mechanized, Non-Computerized System for Serials Control in Small Academic Libraries: A Primer," *Library Resources and Technical Services*, **10**, No. 3, Summer 1966, 373-382.
- E. L. Cochran, F. J. Adrian, and V. A. Bowers, "<sup>13</sup>C Hyperfine Splittings in the Electron Spin Resonance Spectra of HCO and FCO," *J. Chem. Phys.*, **44**, No. 12, June 15, 1966, 4626-4629.
- S. N. Foner and R. L. Hudson, "Mass Spectrometry of Free Radicals and Vibronically Excited Molecules Produced by Pulsed Electrical Discharges," *J. Chem. Phys.*, **45**, No. 1, July 1, 1966, 40-48.
- S. N. Foner and R. L. Hudson, "Ionization Potential of the CH<sub>2</sub> Free Radical by Mass Spectrometry," *J. Chem. Phys.*, **45**, No. 1, July 1, 1966, 49-51.
- A. A. Westenberg and W. E. Wilson, "ESR Intensity Relations and Some Gas-Phase Chemical Kinetics of the OD Radical," *J. Chem. Phys.*, **45**, No. 1, July 1, 1966, 338-342.
- E. A. Bunt, "Venting a Ramjet Missile to Prevent Buzz During Boost by Tandem Rocket," *J. Spacecraft and Rockets*, **3**, No. 7, July 1966, 1140-1141.
- C. O. Bostrom and G. H. Ludwig (Goddard Space Flight Center), "Instrumentation for Space Physics," *Physics Today*, **19**, No. 7, July 1966, 43-56.
- B. H. Buckingham, "All About Hospital Ships," *Navy Magazine*, **9**, No. 7, July 1966, 10-20.
- N. W. Bazley (Institut Battelle, Geneva) and D. W. Fox (APL), "Remarks on a Recent Method for Lower Bounds to Energy Levels," *Phys. Rev.*, **148**, No. 1, Aug. 5, 1966, 90-91.
- N. W. Bazley (Institut Battelle, Geneva) and D. W. Fox (APL), "Comparison Operators for Lower Bounds to Eigenvalues," *J. für die reine und angewandte Mathematik*, **223**, 1966, 142-149.
- R. E. Gibson, "The Strategy of Corporate Research and Development," *California Management Review*, **9**, No. 1, Fall 1966, 33-42.

## ADDRESSES

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

- R. A. Dickmann, "The Man Behind the Computer," *Fifth National Conference of the Computer Society of Canada*, Banff Springs, Alberta, Canada, May 29-June 1, 1966.
- R. A. Dickmann, "Careers in Computers," *Station WNYC Broadcast*, New York, N.Y., June 27, 1966.
- R. A. Dickmann, "A Survey of Computer Personnel Selection Methodology," *4th Computer Personnel Research Conference*, Los Angeles, Calif., June 27-28, 1966.
- W. E. Wilson and A. A. Westenberg, "Study of the Reaction of Hydroxyl Radical with Methane by Quantitative ESR," *Eleventh Symposium on Combustion*, University of California at Berkeley, Aug. 19, 1966.
- L. M. Spetner, "Mutation as a Pacemaker of Evolution," *Second International Biophysics Congress*, Vienna, Austria, Sept. 5-6, 1966.
- C. O. Bostrom and J. C. Armstrong, "The Effects of the September 20-23, 1963, Magnetic Disturbances on the Inner Zone Protons," *Sixth Western National Meeting American Geophysical Union*, Los Angeles, Calif., Sept. 7-9, 1966.
- D. S. Beall, C. O. Bostrom, and D. J. Williams, "The Artificial Electron Belt from October 1963 to December 1965," *Sixth Western National Meeting American Geophysical Union*, Los Angeles, Calif., Sept. 7-9, 1966.
- L. B. Weckesser, "Environmental Limitations of Alumina, Fused Silica and Pyroceram 9606 Radomes," *Corning Glass Works*, Corning, N.Y., Sept. 13, 1966.
- D. W. Fox, "Lower Bounds for Eigenvalues of Self-Adjoint Operators," *Mathematical Seminar, Institute of Mathematics*, University of Genoa, Genoa, Italy, Oct. 6, 1966.
- S. N. Foner, "Mass Spectrometry of Free Radicals and Metastable Molecules," *Astrophysics Branch Seminar, Goddard Space Flight Center, NASA*, Greenbelt, Md., Oct. 10, 1966.
- C. J. Swet, "Line-Scan Television for Earth Observation Satellites," *XVIIth International Astronauti-*

## ADDRESSES (continued)

- cal Congress, Madrid, Spain, Oct. 10-15, 1966.
- R. E. Fischell and R. B. Kershner, "Attitude Stabilization Experiments with the DODGE Satellite," *XVIIth International Astronautical Congress*, Madrid, Spain, Oct. 10-15, 1966.
- A. A. Westenberg, "Applications of ESR Spectroscopy to Gas Phase Chemical Kinetics," *746th Meeting of the Chemical Society of Washington*, Applied Physics Laboratory, Howard County, Md., Oct. 13, 1966.
- R. R. Newton, "The U.S. Navy Doppler Tracking System and Its Observational Accuracy," *Royal Society Discussion Meeting on Orbital Analysis*, London, England, Oct. 17-18, 1966.
- W. H. Guier, "Data and Orbit Analysis in Support of the U.S. Navy Doppler Tracking System," *Royal Society Discussion Meeting on Orbital Analysis*, London, England, Oct. 17-18, 1966.
- R. W. Hart, R. A. Farrell, and R. H. Cantrell, "Combustion Instability in a Solid Propellant with a Heterogeneous Surface Reaction," *3rd ICPRG Conference, John F. Kennedy Space Center*, Cocoa Beach, Fla., Oct. 19, 1966.
- C. T. Holliday, "The Purpose of Optical Radar Boresighting," *Optical Boresighting Roundtable*, Eastman House, Rochester, N.Y., Oct. 24-25, 1966.
- The following seven addresses were presented to the *Twelfth Conference on Radar Meteorology*, American Meteorological Society, University of Oklahoma, Norman, Oklahoma, Oct. 17-20, 1966.
- D. Atlas (University of Chicago), K. R. Hardy (Air Force Cambridge Research Laboratories), and T. G. Konrad (APL), "Radar Detection of the Tropopause and Clear Air Turbulence."
- T. G. Konrad (APL) and D. Randall (Naval Research Laboratory), "Simultaneous Probing of the Atmosphere by Radar and Meteorological Sensors."
- T. G. Konrad and J. J. Hicks, "Tracking of Known Bird Species by Radar."
- I. Katz, "A Polychromatic Radar for Radar Weather."
- M. T. Miyasaki, "An Airborne Meteorological Laboratory for Microscale Measurements."
- R. A. Kropfli, "A Photographic Method for Measuring the Probability Density Function of Atmosphere Echoes."
- K. M. Glover, K. R. Hardy, C. R. Landry (Air Force Cambridge Research Laboratories) and T. G. Konrad (APL), "Radar Characteristics of Known Insects in Free Flight."

## PATENTS

Listed below are U. S. Government patents recently issued to Laboratory staff members for inventions produced in support of APL objectives.

- S. Kongelbeck—*Self-Erecting Folding Fin*, Patent No. 3,273,500.
- E. A. Bunt, L. O. Kauffman, S. D. Raezer, and H. L. Olsen—*Discontinuous Electrode Plasma Generator*, Patent No. 3,274,424.
- W. W. Hagner—*Shut-off Valve*, Patent No. 3,276,471.
- J. G. Chubbuck and H. R. Bittner—*Neuron Simulation Circuit with Wide Frequency Range Astable Multivibrator*, Patent No. 3,277,315.

## APL COLLOQUIA

*Oct. 7*—"Molecular Beam—A Tool for Chemical Research," by R. M. Fristrom, Applied Physics Laboratory.

*Oct. 14*—"Gun-Launched Satellites," by G. V. Bull, McGill University.

*Oct. 21*—"Ultrahigh Resolution Laser Techniques," by H. Z. Cummins, The Johns Hopkins University.

*Oct. 28*—"Newton's 'Laws'—Laws or Definitions?," by K. F. Herzfeld, Catholic University.

## APPOINTMENTS

A recent announcement by Dr. Milton S. Eisenhower, President of The Johns Hopkins University has named Dr. A. Kossiakoff to the new position of Deputy Director of the Applied Physics Laboratory. Dr. Kossiakoff has been Associate Director; this position will now be filled by Dr. F. T. McClure, Chairman of the Laboratory's Research Center.

Dr. Eisenhower explained that

both he and the University Trustees had given careful consideration to the ultimate retirement of Dr. R. E. Gibson as Director of the Applied Physics Laboratory and to the appointment of his successor. In compliance with Dr. Gibson's desire that the Laboratory's close relationship with various government agencies, especially the Navy, be continued and that the planning and manage-

ment of the complex internal operations of the Laboratory not be disrupted, provisions are being made for the inevitable change in the Laboratory's administration. Therefore, upon his retirement, Dr. Gibson will become Director Emeritus, Dr. Kossiakoff will become Director, and Dr. McClure will become Deputy Director of the Laboratory. At that time a decision will be made as

## APPOINTMENTS *(continued)*

to whether the post of Associate Director will be continued.

Both Dr. Kossiakoff and Dr. McClure are veteran staff members, having joined the Laboratory in 1946.

Dr. Kossiakoff received his Ph.D. degree in chemistry from The Johns Hopkins University in 1938. Prior to joining APL Dr. Kossiakoff was Deputy Director of Research at the

Allegheny Ballistics Laboratory, Cumberland, Maryland. A pioneer in the field of solid propellant rockets, Dr. Kossiakoff has played an important role in the development of guided missiles for defense of the Fleet. His honors include the Presidential Certificate of Merit in 1948 and the Navy's Distinguished Public Service Award in 1959.

Dr. McClure received his Ph.D. degree in physical chemistry from

the University of Wisconsin in 1942. Inventor of the Navy's satellite navigation system, he was cited by the Department of Defense in 1964 for coordinating and contributing to a four-year study that led to significant advances in understanding combustion instability in solid fuel rockets. Other honors include the Presidential Certificate of Merit and the Hillebrand Prize of the Chemical Society of Washington.

## WITH THE AUTHORS



I. Katz, author of "Probing the Clear Atmosphere with Radar," is an earlier contributor to the *Digest*. He authored "Radar Reflectivity of the Earth's Surface" in the January-February 1963 issue and "Ocean Wave Measurements" in September-October 1964. Mr. Katz was born in Philadelphia, Pennsylvania, and attended Temple University where he received a B.S. degree in physics and mathematics. A specialist in radio wave propagation, radar meteorology, and atmospheric turbulence, Mr. Katz joined the Laboratory in 1952. He has been engaged in experimental and theoretical studies of missile guidance with emphasis on low-angle capture and guidance problems. He also has

made studies of forward scattering of radio waves off rough ocean surfaces and theoretical analysis of turbulent diffusion in the lower atmosphere. Mr. Katz has done research in basic physics connected with radar map matching, investigated the nature of back scattering of radar energy off sea and land surfaces, and has researched the fundamental causes for land and sea clutter for monostatic and bistatic radars. Mr. Katz is a Project Supervisor in the Preliminary Design Group. He is a member of the International Scientific Radio Union, the American Geophysical Union, the Institute of Electrical and Electronics Engineers, and a Senior Member of the American Astronautical Society.

A. A. Westenberg, author of "Applications of ESR to the Chemical Kinetics of Gases," is also an earlier contributor to the pages of the *Digest*, having co-authored "Fundamental Processes and Laminar Flame Structure" in the January-February 1962 number and "High-Temperature Gas Transport Property Measurements by the Source-in-Flow Method" in March-April 1962. A native of Menomonie, Wisconsin, Dr. Westenberg received M.A. and Ph.D. degrees in chemistry from Harvard University in 1948 and



1950. He is a specialist in high-temperature physical chemistry of gases, reaction kinetics, transport properties, and combustion, and has conducted basic studies related to behavior of materials at high temperatures. Dr. Westenberg has been a member of the Working Group of the Director's Committee on Space Evaluation. He is presently Supervisor of the Chemical Physics Group in the Research Center. Dr. Westenberg was recipient of the Professional Achievement Award of the Washington, D.C. Engineering Council in 1956; he is a Fellow of the Washington Academy of Sciences; and a member of the American Chemical Society, the American Physical Society, and the Combustion Institute.

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