

Fig. 5—Typical time-history plot made with the DIDAP multistylus plotter. This particular run was on a typical FM/FM input signal which had been digitized for processing.

second time to spot-check data accuracy.) With the new equipment, there are automatic parity checking devices, memory-error checks, visual diagnostics for the incoming data, and the data's calibrations can be displayed during the processing run so that the operator can be sure the DIDAP is operating as expected.

## ADDRESSES

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

- T. A. McCarty, "Location of Loran Grids by Aerial Photogrammetry," *Geodetic-Cartographic Air Target Material Conference, Sponsored by the Defense Intelligence Agency, Alexandria, Va., Oct. 18-27, 1967.*
- I. Katz, "Clear Air Turbulence," *Mechanics Department Colloquium, The Johns Hopkins University, Baltimore, Md., Mar. 1, 1968.*

- W. E. Buchanan and J. Dassoulas, "DODGE - Public Relations and the Technical Program," *Baltimore Public Relations Council, Baltimore, Md., Mar. 12, 1968.*
- R. W. Hart and R. A. Farrell, "Medical Radioisotope Scanning I. Optimum Data Processing Considerations in Two Dimensions," *Symposium on Processing of Scanning Information, Central Chapter, Society of Nuclear Medicine, Chicago, Ill., Mar. 15, 1968.*
- E. L. Cochran, B. C. Weatherley, V. A. Bowers, and F. J. Adrian, "ESR Spectrum and Structure of HCN at 4.2°K," *American Physical Society, Berkeley, Calif., Mar. 18, 1968.*
- R. M. Fristrom, "Present Status of Chemical Kinetic Programs," *Thermo-*

*chemical Panel Meeting, Douglas Aircraft Co., Huntington Beach, Calif. Mar. 25, 1968.*

- R. E. Gibson, "Elements of Modern Culture," *Joint General Session, Association for the Education of Teachers in Science and National Science Supervisors Association, at the National Science Teachers Association Sixteenth Annual Convention, Washington, D.C., Mar. 29, 1968.*

The following two addresses were given at the *Second Communications Satellite Systems Conference, San Francisco, Calif., Apr. 8-10, 1968:*

- F. F. Mobley, "Gravity-Gradient Stabilization Results from the DODGE Satellite;"

## Conclusions

The development of the new Digital Data Processor represents a significant milestone in APL's continuing effort to improve the capability and efficiency of its data-processing center. The new DIDAP is probably one of the most versatile general purpose processors currently available for the large-volume conversion of a wide range of raw input data into a form which can be accepted by an IBM computer.

Since the new DIDAP was placed in operation, it has been programmed to process input data both from major Laboratory programs such as the space, missile, and Polaris programs and also for the analog-to-digital conversion of research data from the National Institutes of Health, The University of Texas, the Air Force's Cambridge Research Center, and a number of smaller APL programs. The DIDAP is in almost constant operation and has a relatively low maintenance and checkout down-time of about three percent. Because of its flexibility and reliability, the usefulness of the DIDAP will expand as more programs develop that require such data-processing services. It is already clear that it will take several years to exploit the full potentialities of this powerful equipment.

## Acknowledgements

I wish to express my appreciation to W. A. Becraft, G. C. Day, R. O. Funkhouser, P. Klose, J. L. Machamer, J. Tower, R. D. Wagner, and G. D. Wilson for the important roles they played in the design and fabrication of the new DIDAP. I also wish to thank M. E. Hosea, J. P. Randolph, and C. W. Weatherford for supplying background material for this paper and A. E. Naccarato and V. M. Root for their valuable editorial assistance.

## ADDRESSES

(continued)

- J. M. Whisnant, V. L. Pisacane, and P. P. Pardoe, "Attitude Stabilization Analysis and Performance of the DODGE Spacecraft with Time-Lag Magnetic Damping."
- G. R. Valenzuela, "Scattering of Electromagnetic Waves from a Slightly Rough Surface Moving with Uniform Velocity," *International*

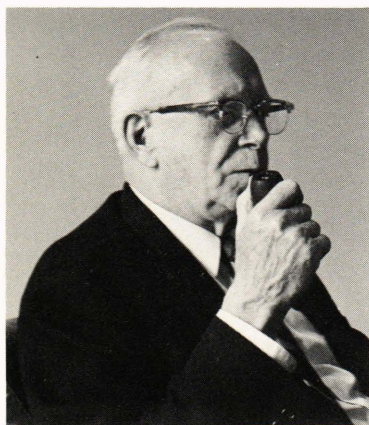
*Scientific Radio Union*, Washington, D.C., Apr. 9-12, 1968.

- T. G. Konrad, "Radar as a Tool in Meteorology, Entomology, and Ornithology," *Fifth Symposium on Remote Sensing of Environment*, University of Michigan Willow Run Laboratories, Ann Arbor, Apr. 17, 1968.
- T. G. Konrad, "Probing the Clear Air with Radar," *Aerospace Engineering Department Seminar*, University of Maryland, College Park, Apr. 29.

## HONORS

*Dr. R. H. Morgan*, a member of the Laboratory's Principal Professional Staff, received the highest honor of his medical colleagues, the Gold Medal of the American College of Radiology, at their annual meeting in Chicago, Ill. on January 9, 1968.

## WITH THE AUTHORS



*R. E. Gibson*, author of "Elements of Modern Culture: Science in the New Humanism," is the Director of the Applied Physics Laboratory. Dr. Gibson was born in King's Lynn, Norfolk, England. At the University of Edinburgh he majored in chemistry and received the B. Sc., *summa cum laude*, in 1922 and the Ph.D. in 1924.

In the summer of 1924, Dr. Gibson came to the United States to join the staff of the Geophysical Laboratory at the Carnegie Institution of Washington. There he served as a Physical Chemist until 1946, except for a five-year period (1941-46) when he was on leave of absence while engaged in wartime research and development with the N.D.R.C., and later as the first Director of Research, Allegany Ballistics Laboratory, Cumberland, Maryland. Concurrently he was on the staff of The George Washington University, first as Lecturer in Chemistry (1929-32), later as Adjunct Professor in Chemistry (1932-45), and as Member of the Graduate Council (1935-45). He joined the staff of the Applied Physics Labora-

tory of The Johns Hopkins University in 1946, was appointed Acting Director in July 1947, and became Director in April 1948.

Dr. Gibson has published numerous articles on physical chemistry, high pressure chemistry, rockets, guided missiles, and the systems approach to the administration of research and development.

Among the many honors bestowed on Dr. Gibson are: Hillebrand Prize of the Chemical Society of Washington (1939); President's Certificate of Merit, World War II (1948); Navy Distinguished Public Service Award (1958); Captain Robert Dexter Conrad Award (1960); and Honorary Commander of the Most Excellent Order of the British Empire (C.B.E.) (1966).

Dr. Gibson is a member of the Academy of Medicine of Washington, American Chemical Society, American Geophysical Union, American Physical Society, American Institute of Aeronautics and Astronautics, Armed Forces Chemical Association, Chemical Society of Washington (President 1930), Cosmos Club (President 1956), Philosophical Society of Washington (President 1940), Washington Academy of Sciences (President 1956), and International Academy of Astronautics.

*T. G. Calhoun*, author of "A New Digital Data Processor," was born in western Kentucky. He received a B.S. degree, in electrical engineering, from Purdue University in 1949 and has done graduate work in electrical engineering and mathematics at Polytechnic Institute of Brooklyn. He served in the Navy from 1940 to 1946. Before coming to



APL, he was a development engineer at Hazeltine Electronics Corporation (1949-1952) and was responsible for the development of an airborne pulse telemetry system and for work in the general areas of radar IFF and radio direction finders. He joined the Jacobs Instrument Company (1952-1953) and assisted in the development of a close support bombing system for the Navy. From 1953 to 1955 he was an engineer with Melpar, Inc., where he helped develop the MSQ-1A Radar Ground Guidance System. Since joining APL in 1955, he has been responsible for experimental studies related to radar guidance, radar acquisition, and data processing. He was project manager for the development of the Satellite Pulse Data Processor and for the re-design and fabrication of the new Digital Data Processor. At present he is Assistant Project Supervisor of Electronic Development in the Bumblebee Instrumentation Development Group. He is a member of the American Ordnance Association and the Institute of Electrical and Electronic Engineers.