PTTI DISTINGUISHED SERVICE AWARD

Presented to
Dr. Leonard S. Cutler
Distinguished Contributor
Technical Staff
Hewlett-Packard Laboratories

by
Dr. Richard L. Sydnor
NASA Jet Propulsion Laboratory
(Retired)

BIOGRAPHY

Leonard S. Cutler was born in Los Angeles, California on January 10, 1928. He received the B.S., M.S., and Ph.D. degrees in Physics from Stanford University in 1958, 1960, and 1966 respectively. His thesis work was in two areas: Theory of High Energy Inelastic Electron Scattering off Nuclei, and Theory of Noise in Masers.

From 1949 to 1957, he was Vice President, Engineering at Gertsch Products, Inc., in Los Angeles, California. Since 1957, he has been with the Hewlett-Packard Company and is presently Distinguished Contributor to the technical staff at Hewlett-Packard Laboratories. Prior to his current role at Hewlett-Packard, he served as Director of the Superconductivity Laboratory, Director of the Instruments and Photonics Laboratory, Director of the Physical Research Laboratory, Manager of the Frequency and Time Division East, Director of Quantum Electronics, and member of the technical staff.

Dr. Cutler has been active in the areas of precision ratio transformers, frequency meters, quartz and atomic frequency standards, including passive cesium, rubidium, and mercury ion standards, and active hydrogen masers. He has also been involved with frequency stability theory, special and general relativity, laser interferometry for precision distance measurement, magnetic bubble memories, disc memories, superconductivity, photonics, and precision time synchronization. He was responsible for the design of the first all solid-state cesium-beam frequency standard and has been deeply involved ever since with the theory and design of cesium atomic beam tubes and the electronics for atomic and quartz frequency standards.

He is serving as a member of the Editorial Review Committee for the IEEE Transactions on Instrumentation and Measurement. He was a member of the IEEE Santa Clara Valley Section Fellow Nominating Committee and the IEEE Field Awards Committee. He served on the Electorate Nominating Committee for the American Association for the Advancement of Science. He is serving as a member of the Advisory Panel to the Physics Laboratory of the National Institute of Standards and Technology. He was the Technical Program Committee

Chairman for the Annual Frequency Control Symposium, 1986-1987. He was a member of the External Advisory Panel to the Center for Particle Astrophysics at the University of California, Berkeley.

He was elected to fellow grade in the IEEE in 1974 for his work in atomic frequency standards and frequency stability and is presently a Life Fellow. He is a member of the American Association for the Advancement of Science and the Sigma Xi Society. He received the 1984 Morris E. Leeds award from the IEEE, as well as the IEEE Centennial Award in the same year. In 1987, he was elected to the National Academy of Engineering. In 1989, he received the Rabi award from the IEEE Ultrasonics, Ferroelectrics, and Frequency Control Group for work in atomic frequency standards. In 1991, he received the Industrial Research Institute Achievement Award for work in atomic frequency standards and laser interferometry for precision distance measurement. In 1993, he shared the American Institute of Physics Award for Industrial Applications of Physics for application of a wide range of physics and electronics to the design of an atomic cesium clock that is the most precise and stable commercial timekeeping device available presently in the world. In 1996, he was elected a fellow of the American Physical Society for his work on atomic frequency standards and laser interferometers for precision distance measurement.

Dr. Cutler is married and has four grown sons. His outside interests include mathematics, computers and computer programming, electronics, photography, classical music, and wood-working.

INCIDENTS

One time Len and his wife, Dottie, visited Williamsburg. It was in the summer and rather warm. They checked into the hotel and hoped to have a cooled room but this was not the case. There was supposed to be air conditioning but when the thermostat was turned down, the heat came on! Unfortunately, when the thermostat was turned up, there was no cooling, as one might have hoped. Len usually carries a small digital volt-ohmeter with him and went to work and found that the wiring inside the room heat exchanger had been installed improperly. He figured out what needed to be done and just happened to have a soldering iron with him. He was able to correct the wiring and then the system worked just fine, so he and Dottie were able to have a comfortable stay. Len thought it might be fun to charge the hotel for his work, but reason prevailed and he said nothing.

Another time Len had just gotten a fairly new Porsche and he and Dottie had driven down to Los Angeles from Palo Alto. On the last evening of the visit, Len took his sister for a short ride. After stopping at a stop sign, the throttle ceased working completely. The engine would only idle. A quick look in the engine compartment showed that the problem had to lie in the linkage under the car (the Porsche has its engine in the rear). He was able to get the car going at idle speed and got back to his sister's house after a fairly long time. It was Saturday night and there were no places open to get help. A look under the car with a flashlight showed that the problem was a broken ball joint in the linkage. Len and Dottie had to be back in Palo Alto Sunday night, so something had to be done. A large rubber band was found and used to hold the broken parts together. The throttle now worked, but would it last? Armed with a few spare rubber bands, Len and Dottie left Sunday morning and made it back to Palo Alto without having to change a single rubber band.