he did research in ultra-high vacuum technology, surface chemistry and lubrication and had more than 70 technical publications and one book to his credit. His managerial talents became evident early in his career as he progressed through appointments of increasing responsibility until he became research and development manager of materials science and engineering in 1968.

In February 1973, Roberts left General Electric to become the seventh director of the National Bureau of Standards and the first chemist ever to head it. Then in June 1975 he moved to the newly formed Energy Research and Development Administration as assistant administrator for nuclear energy.

He rejoined the General Electric Company in February 1977 at its home offices in Fairfield, Connecticut where he was carrying out a comprehensive study of technology in the company at the time of his death.

Dick Roberts's achievements as a manager and leader grew out of his ability to motivate others to do their best and to find gratification in their efforts. He displayed extraordinary talents for communicating effectively with all types of people, and for finding his way through complex issues, bureaucratic intricacies and human diversity to reach important goals. He had toughness tempered by graceful cordiality, ambitious drive tempered by empathy with others, and impatience tempered by realism. The scientific community has few young leaders of his quality; in this light, his death appears all the more tragic.

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John R. Pellam

The death on 23 July 1977 of John R. Pellam, professor of physics at the Irvine campus of the University of California, was a great loss to the community of low-temperature physicists. Pellam had long been a leader in the field of liquid-helium physics, and had contributed significantly in many areas of physics.

John Pellam was well known and respected in the international community of low-temperature physicists, especially through his work on helium three-four mixtures and his use of the Andronikashvili disk technique.

Pellam had a varied career. He received his undergraduate degree from MIT just before the start of World War II, and began immediately to work with Philip Morse on operations research problems for the US Navy, where he contributed to the founding of this new field. After the war he returned to MIT to work on his doctorate.

At that time Samuel Collins was completing the first model of his famous helium liquifier, which later became the mainstay of most low-temperature physics laboratories. Pellam enjoyed recounting the story that the first successful run of his thesis experiment was carried out inside Collins's first liquifier—on the day of its first successful run.

Pellam was a supreme example of the intuitive physicist. His understanding of how helium "thinks" was rivalled only by that of his colleague Richard Feynman. He enjoyed designing conceptually simple experiments to illustrate complex phenomena. Much of his career was devoted to exploring hydrodynamic forces exerted by superfluid helium II. He invented a way to use the thermal Rayleigh disk to demonstrate in a clear and unequivocal way that the two-fluid model for helium II could explain extremely complex forces operating in a second sound field. Another example was his invention of the "superfluid wind tunnel," a device that allowed the superfluid component to move, while constraining the normal fluid component. He used this device in a successful experimental verification (known as "Pellam's Fly Wing Experiment") that the lift on an airfoil immersed in a viscosity-free fluid vanished.

Following completion of his doctorate at MIT, Pellam served as chief of the low-temperature physics program at the National Bureau of Standards. In 1954 he accepted a Professorship at Caltech, where he spent a highly productive decade. Following a brief period in private industry, he moved to Newport Beach as professor of physics at the Irvine campus of the University of California.

John Pellam was an extraordinarily powerful man. His physical strength and his intolerance of bureaucracy are illustrated by a story told of him when he was at the National Bureau of Standards. He had placed a request to have some cylinders of helium gas moved. After a typically long bureaucratic delay a team of riggers showed up and began to debate among themselves how to proceed. Pellam, growing increasingly impatient and wanting to get on with his research, finally stepped in and picked up one cylinder under each arm. As he walked down the stairs with them the riggers stared after him in disbelief.

John Pellam maintained his good humor and actively contributed to the very end to an experimental test of the inverse square law of gravitation at short distances. He was a warm, dynamic individual whose loss will be felt by his friends in many walks of life in the US and throughout the world.

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