



Pete Handhamer

PETER STAUDHAMMER

1934–2008

Elected in 1996

*“For engineering achievements in space systems,
plasma and microwave processes, remote sensing, instrumentation,
and their application to commercial systems.”*

BY GERARD W. ELVERUM

PETER STAUDHAMMER, whose scientific and engineering accomplishments in an astonishing variety of science and engineering fields, both commercial and academic, died of cancer on January 14, 2008, at his home in La Quinta, California, at the age of 73. He began his career as a rocket scientist, became vice president and chief technical officer of TRW, and ended his career as director of the Alfred E. Mann Institute for Biomedical Engineering at the University of Southern California (USC).

During Peter’s 42-year career with TRW, he held a variety of technical and management positions. He was chief engineer and a principal architect of the Apollo lunar descent engine that soft-landed U.S. astronauts on the Moon. The engine, an entirely new design (10:1 throttling with storable liquid propellant), performed perfectly in seven manned missions, including the first Moon landing and the rescue of Apollo 13. Peter also pioneered hydrazine-fueled rocket engines, now a standard of spacecraft propulsion, and developed space instruments for the exploration of Venus, Mars, Jupiter, and Saturn. The most notable of these was the Viking Biology Experiment, the first such instrument to search for life on Mars.

Under Peter’s leadership, TRW’s Central Research Laboratories created a plasma-based isotope-separation process and applied it to separating uranium and several transition-metal isotopes, including palladium, which is now used for prostate cancer therapy. He directed a broad range of research

in space science, solid-state devices, plasma physics, optics and lasers, and programs in thermonuclear fusion, isotope separation, fossil-fuel combustion, and energy storage. This research established new TRW product lines in GaAs (Gallium Arsenide) microelectronics, SAW (Surface Acoustic Waves) devices, and high-energy lasers.

In 1986, Peter was named vice president and general manager of TRW's Defense Projects Division, where his responsibilities included managing classified programs of great national importance involving systems with both space and ground segments. He was also the first leader of the TRW Center for Automotive Technology, which applied space and defense capabilities to advancing automotive product development. The results were a wide range of performance-, safety-, and efficiency-enhancing projects that led to new billion-dollar automotive product lines for electrically assisted steering and integrated vehicle-stability controls.

In 1993, he was appointed chief technical officer for TRW Inc., a position that required leadership of strategic technology planning for TRW's worldwide force of more than 17,000 engineers and scientists in a huge range of technical disciplines in space, electronics, information, and automotive systems. Few people would even have attempted to meet the mental, physical, and leadership demands of the job. Peter excelled.

During this period, Peter also actively promoted the study of system engineering and leadership principles in engineering education. He served on university engineering review committees at UCLA, UC Riverside, USC, University of Michigan, and Case Western Reserve University. In 1992, he was named Alumnus of the Year by the UCLA School of Engineering.

From 2003 to 2007, as director and chief operating officer of the USC Mann Institute, Peter provided technical and managerial leadership for the research, development, and commercialization of biomedical devices and other technologies. He was also a member of the USC Viterbi School of Engineering Board of Councilors and a research professor in the Department of Biomedical Engineering. At the same time, he was a consultant

to Northrop Grumman and the U.S. Department of Energy and a member of the General Motors Corporate Technical Advisory Board.

Peter was born in Budapest, Hungary, on March 4, 1934, to John and Josephine Staudhammer, the second of five children. The Central European world into which Peter was born became progressively darker throughout the 1930s and finally erupted in World War II. His father, a survivor of seven years in a Siberian prisoner of war camp during World War I, knew firsthand the consequences of "liberation" by the Red Army. Therefore, as the Russian army approached Hungary in 1944, the family left, amid tanks and bombs, for the relative safety of Austria. Along with hordes of other displaced persons flooding Western Europe, the Staudhammers moved on to Stuttgart, Germany, where they placed their names on the roll of the International Relief Organization. In 1949, Margaret Zerovean and the Hungarian Catholic Church in Los Angeles sponsored their entry to America.

In Los Angeles, Peter finished high school and entered UCLA in 1952 as a freshman in engineering. He was a research assistant to Dr. Sam Yuster and Dr. William Seyer, who later became his Ph.D. advisor. Peter received his Ph.D. in 1957, just five and a half years after leaving high school, a remarkable achievement considering the difficult conditions of his pre-university life and education.

Upon receiving his Ph.D., Peter applied for a position in the Rocket Motor Injection and Combustion Group, which I headed at the Cal Tech Jet Propulsion Laboratory (JPL). How fortunate I was that he accepted the position! In those days, work on rocket technology at JPL was still pretty primitive. Slide rules and Freidan calculators were the tools of the trade. Rocket motor tests were observed through a window in a block wall, and sometimes propellant flows were controlled with hand valves. Peter's experiences at JPL working directly with hardware at the cutting edge of rocket-motor technology resulted in his lifelong desire for hands-on participation in projects. That desire, combined with his outstanding technical capabilities, led to the brilliant achievements that characterized his career.

With the planned transfer of the Cal Tech JPL management contract from the Army Missile Command to NASA at the end of 1958, the future of rocket technology and development at JPL was uncertain. In October 1958, Space Technology Laboratories (STL) had become an independent subsidiary of the newly formed Thompson Ramo Wooldridge, Inc., with Dr. Louis Dunn, a former director of JPL, as president. Dr. Dunn encouraged several of us at JPL with expertise in rocket engines to join STL (which later became TRW), which Peter and I both did in early 1959. That was the beginning of our career together at TRW.

After Peter became an NAE member in 1996, he was appointed to the NAE Program Committee, which oversees the planning and execution of NAE programs; he was committee chair from 1998 to 2003. He also served on the NAE Section 12 Peer Committee in 2000 and was chair for the 2003 election cycle. Section peer committees evaluate and make candidate recommendations to the NAE Committee on Membership. Peter's leadership led to an appointment on the NAE Membership Policy Committee from 2003 to 2005, and subsequently to his becoming a member of the Committee on Membership from 2004 to 2007. Peter also contributed to many NRC studies sponsored by the U.S. Air Force, U.S. Department of Defense, U.S. Department of Energy, and NASA. In 2002, he received the Distinguished Public Service Medal from NASA for a lifetime of distinguished service to the United States.

"Pete Staudhammer was an engineer's engineer—a broadly competent engineer both highly analytical and innovative," said Simon Ramo, co-founder of TRW. "He was such a nice man. Everyone—young engineers and senior experts—would come to consult him, as did all of the top executives. He will be greatly missed. The essence of Peter was his deep caring for people. In his own words, 'It's people that you want to bet on, actually much more than talent and much more than inventions.'"

Peter's wide range of interests was reflected in his personal life. He was a devoted follower and supporter of the opera and symphony. At his home in Lake Arrowhead, he enjoyed boating, water skiing, and working in his woodshop. A devoted family man, he took pride in helping his six children achieve success, and he strove to instill in his grandchildren imagination and the quest for knowledge.

Peter is survived by his wife, the former Marie Gilman; three daughters, Debra, Julia, and Christina from his first marriage to June Fochler; two stepdaughters, Jennifer and Hilary; a stepson, Stephen; and seven grandchildren. He is also survived by three brothers, John, Karl, and Fred; and a sister, Josephine Laue.

Peter is also survived by the inspiration he left in the memories of hundreds of colleagues, students, and friends. It was my great privilege to work closely with Peter during his professional career starting in 1957. What a brilliant mind, and what a pleasure to be with! He was a supportive friend who energized my career beyond measure. I will always miss him and remember him with great respect and fondness.