

OBITUARY: Lloyd Z. Maudlin - February 20, 1924 - January 20, 2005

Noted physicist, beloved husband, father, and friend.

"He had a very, very great soul and he made the world bigger everywhere he went"

Mike Glyer, Hugo Award winner, upon hearing of Lloyd Maudlin's unexpected death.

Lloyd was born in Miles City, Montana. His mother had homesteaded in northern Montana and Lloyd was raised in a log cabin near Rosebud, not far from Maudlin, Montana, which was named after his father Loyd. Every winter the Yellowstone River would freeze and the spring thaw brought massive ice floes that burst up onto the land, flattening everything -even buildings- in their path; the family would retreat to higher ground across the railway embankment and Lloyd had a vivid memory of riding the back of the buckboard, horses racing, while a block of ice ten feet tall gained on them.

The family moved to a farm in Iowa in 1932 but three years later Lloyd's father died and, as the oldest son, Lloyd became the farmer at the age of 11. Despite the hard demands of running a farm through the Depression years, he graduated valedictorian of Ladora High School and then served 30 months in the U.S. Army Air Corps from 1943-46, primarily as the Lead Crew radio operator on a B-24 bomber ("the Liberator") flying missions out of Norwich, England.

In 1946, in fulfillment of his ardent hopes and dreams since first dating her in 1941, Lloyd married his beloved Lauralee Rose and they moved to Los Angeles where Lloyd earned his Bachelor's degree in physics from UCLA in 1949 and his MS in physics from USC in 1952, often studying with his young son on his lap. His thesis on the absorption of thin plastic film in the vacuum ultraviolet resulted in a new discovery and was presented before the American Physical Society in 1955. Lloyd did additional graduate work in physics and engineering at MIT in 1954.

Lloyd's career roughly paralleled the development of the computer: his professional life started in 1951 as a civilian working for the Navy at the Pasadena Annex of the U.S. Naval Ordnance Test Station, China Lake, California, and for the next 30 years he worked for the Navy through various iterations of the name (Naval Oceans System Center, Naval Undersea Center, Naval Undersea Warfare Center, etc.). Lloyd was a pioneer in the use of computers, working with such early computing luminaries as Grace Hopper (co-inventor of COBOL). When he started, "automatic computers" (to differentiate the machines from the men and women whose job title was "computer") filled huge rooms, used vacuum tubes, and were in constant danger of overheating - but a day before his death Lloyd was editing on a PC some of the World War II era love letters he had exchanged with Lauralee.

Lloyd shepherded the development of real-time torpedo simulation (the hydrodynamic simulator), which began as a flight table made from a surplus gun mount controlled by an early analog computer but thirty years later was a highly complex system utilizing a UNIVAC 1110, numerous array processors, ancillary support computers, and versatile graphics terminals. Their expertise in real-time simulation enabled his team to accurately

predict outcomes of underwater torpedo performance tests and solve many problems in advance, at a tremendous cost savings to tax payers. He was instrumental in the development of the Polaris missile.

Lloyd was passionate about protecting America and influenced the development of anti-submarine warfare technologies, regularly traveling to Washington D.C. for meetings with elected officials, Naval personnel, and the President's Scientific Advisory Council.

When his meetings with other Navy labs were scheduled in the summer, Lloyd would load up the whole family, now numbering six, and drive cross-country for a month at a time, pulling a 21-foot travel-trailer, stopping to visit relatives still in Iowa. For all his brilliance as a physicist, Lloyd always laughed about his errant sense of direction and on the long road trips he taught all his children to read maps and navigate.

He was awarded a patent in 1964 for a three-dimensional means of describing underwater acoustics. In 1973 the Pasadena lab moved to Point Loma and Lloyd and Lauralee moved to San Diego. In 1979 he led a team of physicists in conducting a study of the Three Mile Island nuclear power plant accident (March, 1979); the committee's recommendations were included in the last Congressional Act signed by President Jimmy Carter.

After retiring from the Navy Lab, Lloyd worked for several small technology companies and his work covered such diverse areas as: the Arctic, including studies of Arctic ice and survival in Arctic weather conditions; the ability of oil platform rescue boats to withstand a drop from the platform into Arctic waters, which might be at zero degrees Fahrenheit; undersea surveillance systems using advanced acoustic techniques; and utilization of desk-top computers on board ships for various command and control problems. He performed systems analysis to predict damage areas associated with explosive/radiation hazards and was responsible for the design of a computer based system to predict surf conditions in selected coastal regions; anti-submarine warfare (ASW) aspects of homeland security; and later conducted a study for the Department of Energy on the practicality of using methane gas recovered from pig farms.

In 2000 the Institute of Electrical and Electronic Engineers (IEEE) awarded him a Millennium Award and in 1984 Lloyd was one of 1,984 recipients of the Centennial Award out of 300,000 members. The morning after September 11, 2001, he received a phone call from Washington D.C. asking what he knew about al-Qaeda.

In the last decade, although Lloyd's professional focus was on counter-terrorism and global warming, he was most proud of his 58 year marriage to Lauralee, his "beautiful redhead," and within the last few years spent much of his time writing his memoirs and transcribing hundreds of pages of their World War II love letters. He delighted greatly in his four children, eight grandchildren, and two great-grandchildren, as well as his church family. He continued to have reunions with his WWII flight crew.

Lloyd always generously served his community, both Los Angeles and San Diego, through involvement with the Boy Scouts of America, the YMCA, and as a founding

member and president of the Gifted Children's Association, to name a few. He was a particularly gifted grandfather and, though he could not carry a tune, he could nonetheless sing any fussy grandchild to sleep. His commitment to the United Methodist Church was steadfast, serving the church at the local and District levels, both in Los Angeles and San Diego, in dozens of different ways over his lifetime. He found no conflict between his orthodox Christian beliefs and his observations as a scientist. He noted, "At the high school physics level we understand things and have laws - at the graduate and post-graduate levels there is a real understanding that we really don't know anything; there really are no ultimate 'laws' that we know or understand." One of his favorite quotes came from Sir Isaac Newton (1642-1727): "I do not know what I may appear to the world, but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me."

Lloyd's son Craig Maudlin is president of a software firm in Cardiff-by-the-Sea. Lloyd's daughter Lynn Maudlin is a singer/songwriter in Altadena; his daughter Alicia Cross is a dressage rider, teacher, and judge in Poway; and his daughter Dawn Reitz is a labor and delivery nurse in Healdsburg, California.