



Edsel W. Sanford

EDSEL D. DUNFORD

1935–2008

Elected in 1989

“For eminent leadership in the development and integration of satellites, electronic payloads, and advanced technology for space.”

BY GEORGE J. GLEGHORN

EDSEL DELANO (ED) DUNFORD, former president and chief operating officer of TRW, Inc., a major aerospace and systems engineering company, died October 3, 2008, at his home in Rolling Hills, California, from kidney cancer. He was 73.

Ed Dunford was born May 7, 1935, in Langdon, North Dakota, about 20 miles south of the Canadian border. Growing up poor on a subsistence farm, he was one of the younger children in a large family. He was educated in the public schools of Osnabrock, North Dakota. Soon after graduation in the early 1950s he joined the armed services, serving for three years in the U.S. Army. Upon leaving the Army he attended the University of Washington, graduating with a B.S. in electrical engineering in 1960. In 1973 the University of California at Los Angeles (UCLA) awarded him a master of engineering degree, and he completed the Executive Program at Stanford University in 1982.

Ed began his professional career at the Aeronutronic Division of Ford Motor Company. He spent nearly four years there as a designer of communications equipment: receivers, demodulators, digital circuitry, and similar signal processing equipment. He was proud of his responsibility for development

of a detection system that was installed in American embassies to detect and locate hidden eavesdropping devices.

In 1964, Ed joined Space Technology Laboratories, the part of TRW that produced satellites and space-related hardware, to participate in the exciting and innovative technological activities that were the order of the day. His experience led to his being assigned to the design and construction of spacecraft command receivers using phase-locked loop techniques to achieve the extreme sensitivity needed for interplanetary communications. He was responsible for the *Pioneer 10* command receiver. *Pioneer 10* was a National Aeronautics and Space Administration (NASA) spacecraft launched in 1972 on a mission to study the asteroid belt and fly by Jupiter. In 1983 it became the first man-made object to leave the solar system.

Another of Ed's projects in the late 1960s with which he was particularly intrigued was the design and construction of a system involving a small satellite that relayed signals from friendly covert receivers deployed in denied areas in the Far East to a nearby island. As the project manager, Ed spent several months installing the ground station and later personally installed the satellite on its launch rocket. Some projects in the early days involved a great deal of personal service!

During the next 11 years Dunford was deeply involved in the design and development of increasingly complex electronic equipment and systems. All involved interlinked communication systems and intricate data processing equipment for both classified and civilian projects. This was a period when mass and power requirements were stringent, leading to an increased emphasis on miniaturization and eventual development of very large scale integrated circuit technology. Typical of these systems was NASA's Tracking and Data Relay Satellite System, for which Ed was the payload manager. The system involved three geosynchronous relay satellites and a ground station, all interlinked so as to simultaneously track a number of scientific satellites and relay their data and command links to the ground.

Over this 20-year period Ed held various positions of technical and project management within TRW's Electronic Systems Group, becoming vice president and group general manager in 1984. Ed had a top security clearance, and many of his accomplishments are classified and may never be disclosed. Under his guidance the company won the contract for the payload of the military's Milstar communications satellite teamed with Hughes Aircraft.

Dunford became vice president and general manager of the Space and Technology Group in 1985 and of the Space and Defense Sector in 1987 and thus was head of all military and civilian space, intelligence, and systems engineering work for the corporation. His tenure there was marked by a period of remarkable success in contractual and financial performance.

In 1991 he was selected to be president and chief operating officer of the parent company, TRW, Inc., and turned his attention to expanding the old-line auto parts business with a major new product line. To this end over 100 employees were transferred from the space and defense group to enhance product design and create modern manufacturing and test facilities. These practices—applied to more than 100 plants of the company's automotive parts business—enhanced the quality and performance of these product lines also. Ed retired in late 1994, having presided over a period of unusual corporate growth, with the company's stock price more than doubling.

Ed served as chairman of the Aerospace Industries Association in 1991 and was on the board of directors of several corporations—TRW, National Steel Corporation, and Cordant Technologies among them.

In 1989 he was elected to the National Academy of Engineering "for eminent leadership in the development and integration of satellites, electronic payloads, and advanced technology for space." He served as chairman of the National Research Council's Committee on the National Aerospace Initiative in 2003. He was a fellow of the American Institute of Aeronautics and Astronautics and received outstanding

alumnus awards from the University of Washington and UCLA. In 1990 the Southern California Minority Business Development Council awarded him its annual leadership award.

In his career Ed had longtime direct and indirect contact with the Cold War. It became a major interest of his, and in 2004 he coauthored and coproduced a two-hour documentary entitled "The Cold War and Beyond." This was shown on Public Broadcasting System stations and later modified to a form suitable for college and high school history instruction.

Ed Dunford had a management style that emphasized teamwork and an ability to solve challenging problems that were at the forefront of technology. He will be remembered for his directness and integrity, his warmth, and his sense of humor. These traits made it a pleasure to work with him both as a colleague and as a subordinate. He will be missed.

His son Wyman wrote:

Ed loved to golf and belonged to several clubs, including Palos Verdes Country Club in California where he played for over 35 years with longtime friends, colleagues, and family. Over the years he enjoyed golfing in Europe, Africa, and Asia as well as the U.S. Another passion was hiking from his early years and he took pride in summiting many peaks, including Mt. Whitney, the highest peak in the continental United States. Ed also enjoyed running and, consistent with his competitive nature, always tried to improve his race times.

In the 1970s Ed decided he wanted to fly airplanes, so he became a licensed pilot. For many years he enjoyed taking family and friends for rides.

Ed was a voracious reader and huge history buff. He loved to travel and would always read about the locations he was about to visit. His memory was incredible and he could dazzle people with facts about any country or era in time.

Ed was actively involved with his family and quietly created a level of expectation that has provided

inspiration for generations of success and caring. He led by example with humility, respect for others, and a passion to do well.

Ed was UCLA Engineering Alumnus of the Year in 1987. Ed's son, Wyman, and his granddaughter, Alyssa, were given special recognition shortly after Ed's death at UCLA's engineering alumnus of the year ceremony for three generations of graduates from the UCLA program. His grandson, Mark, is attending the University of Washington, where his grandfather earned a bachelor's degree.

Ed's family has so much love and respect for him that his sons Stan and Phil and grandson Bradley climbed the same mountain that Ed climbed years earlier and spread his ashes on the peak. It is fitting that Ed has become a permanent part of the grandeur of this great country he served and loved.

Survivors include his wife, Lorie Dunford; his sons, Wyman Dunford (and wife Marianne); Stanley Dunford (and wife Helen); Philip Dunford; and daughter Marlo Garrett (and husband Tim); stepchildren Matthew Henning and Abbey Greene; and his grandchildren, Carina Dunford, Laurel Dunford, Alyssa Dunford, Bradley Dunford, Amy Dunford, Mark Dunford, Michele Dunford, Katie Dunford, Jessica Garrett, and Jason Garrett.