

DOCUMENTS OF THE GENERAL FACULTY

**REPORT OF THE MEMORIAL RESOLUTION COMMITTEE FOR
HUDSON MATLOCK**

The special committee of the General Faculty to prepare a memorial resolution for Hudson Matlock, professor emeritus, civil, architectural and environmental engineering, has filed with the secretary of the General Faculty the following report.



Hillary Hart, Secretary
General Faculty and Faculty Council

**IN MEMORIAM
HUDSON MATLOCK**

Lee Hudson Matlock Jr., known by all as Hudson Matlock, former University of Texas at Austin professor, but also a husband, father, grandfather, great-grandfather, engineer, pilot, U.S. Army Air Corps veteran, and a friend and mentor to many passed away October 8, 2015, at the age of ninety-five.

Hudson was born on December 9, 1919, to Lee and Charlie Matlock in Floresville, Texas, a small farming community southeast of San Antonio. He was the oldest of five children. After finishing high school in Floresville (1936), he attended Texas A&I College in Kingsville, Texas (1936-1939). He was a cheerleader at Texas A&I. As an undergraduate student, during summers he worked for the Texas Highway Department (1936 and 1938) and as a member of a survey crew at the Sacramento Air Depot (1937). He launched his career in civil engineering in 1939 as a soils laboratory assistant in the materials and test division of the Texas Highway Department. In 1941, he became an inspector of construction in the San Antonio office of the U.S. Engineering Department.

As World War II began, he joined the U.S. Army Air Corps (1942-45), learned to fly, which became a passion later in his life, and served as a first lieutenant unit flight instructor at Goodfellow Field in San Angelo, Texas. Toward the end of his military career, he was transferred to Hobbs, New Mexico, where he became a B-17 pilot and was preparing to head to the Pacific when the war ended. It was during his flight training that he began to hone his teaching skills.

While in the U.S. Army Air Corps, on November 25, 1942, he married Harriett Nadine Kidder of Mercedes, Texas. They ultimately enjoyed fifty-three years together. Hudson and Harriett had two sons, John Hudson Matlock and David Kidder Matlock. Both had successful careers in engineering after completing advanced degrees: John a Ph.D. in materials science at The University of Texas at Austin and David a Ph.D. in materials science and engineering at Stanford University. David was elected to the National Academy of Engineering in 2003, making a unique father/son pair in the select Academy.

After the war, he moved to Austin to complete his B.S. (1947) and M.S. (1950) degrees in civil engineering at The University of Texas at Austin. He joined the College of Engineering as an instructor in 1948 and progressed through the ranks becoming professor in 1965. In 1972, he became chairman of the Department of Civil Engineering and served in that capacity until his retirement from the University in 1976.

As with many engineering faculty during his initial era, Hudson did not have a Ph.D. Indeed, his college math courses included only advanced calculus and differential equations. And yet he was a pioneer in developing analysis techniques for advanced structural systems and complex structure-soil interaction systems. He was a leader in developing experimental testing and data analysis methods.

A workaholic, Hudson kept an air mattress in his home office, allowing him to work long hours, including all night and to take short naps to keep energized. He was a stickler for precision and thoroughness, and that characterized his reputation for reliability as his career progressed.

Hudson supervised twenty master's theses and fifteen doctoral dissertations. Several of his doctoral students became named professors at universities, including two at The University of Texas at Austin. He authored or co-authored over one hundred and twenty reports and journal articles, and gave a comparable number of invited lectures. A dozen of his co-authors were faculty colleagues, but over thirty of his former students also were co-authors. He co-authored two laboratory manuals for concrete and materials testing. He introduced graduate courses in structure-soil interaction and ocean engineering later in his career.

Hudson's teaching and research career were intertwined and consistent with the evolution of technology during the past few decades. His early involvement was with engineering materials. A normal expansion of his materials interest was a series of studies of cushioning materials for airdrops sponsored by the Quartermaster Corps of the United States Army. The studies involved experimental drops from a tall tower at Balcones Research Center and included faculty colleagues Neils Thompson and Eugene Ripperger. Development of instrumentation and testing techniques was a necessary element of the studies. A parallel activity involved Lymon Reese, who had conducted experimental studies on friction piles at UC Berkeley prior to joining the UT Austin faculty.

The engineering research funding from government sources and also from industry was limited in the 1950s. However, the offshore drilling industry was in its infancy, and much activity was projected in the Gulf of Mexico. Professors Matlock, Reese, Ripperger and Thompson formed a private company, Engineering-Science Consultants, Inc., as a channel for privately funded research activities, although continuing to use graduate students and to transition consulting activities into university projects. Engineering-Science Consultants was headquartered in a small shop and office behind the Matlock home. With the sponsors' encouragement, many of the projects involved graduate students and resulted in professional society publications. Government funding followed, and more than fifty journal publications resulted in the period between 1950 and 1980. Matlock and Reese were selected to perform an analysis of the structural damage from a tsunami that struck Hilo, Hawaii, in 1960. The study was sponsored by the Defense Atomic Support Agency and the Matlock/Reese selection was a result of their research on wind and wave forces on offshore structures. He later led major analytical and experimental studies of mobile rotating piping swivel joints, instrumentation of jack-up mobile offshore drilling units and ice-structure interaction for Arctic sites.

Hudson and Lymon were recognized at the 1985 Offshore Technology Conference— involving about one hundred thousand attendees— with a Distinguished Achievement Award for their “impact on offshore technology worldwide of their collective research and training efforts.” Hudson also shared the J. James R. Croes Medal from the American Society of Civil Engineers (ASCE) and was included in the ASCE Hall of Fame Awards in his latter academic years. He was elected to the National Academy of Engineering in 1982. He was active in ASCE and many technical societies, including the Society for Experimental Stress Analysis. He was recognized by UT Austin as a Distinguished Engineering Graduate in 1986 and was named a charter member of the Academy of Distinguished Graduates by the University's Department of Civil, Architectural, and Environmental Engineering in 2003. Hudson's grateful students have generously endowed a professorship in his name.

The latter stages of Hudson Matlock's UT career occurred during the expansion of the digital computer era. He was an early leader in development of finite-element analysis techniques, particularly for beam-columns, grid-beams, slabs and other structure-soil applications. More than thirty of his publications came during the period of 1960-77.

In part as recognition of the diversity of his accomplishments, Hudson was selected as chairman of the UT Austin civil engineering department in 1972. He served as chair until his retirement from the University in 1976. He then joined Fugro, later Earth Tech Corporation, as vice president of research and development and was located in California until returning to the Texas Hill Country in 1985.

In 1965, he decided to take up flying again (something he had missed since leaving the Army Air Corp) and joined the UT Austin Flying Club. Participation in the club only lasted about one year until his desire to fly more led him to purchase his first airplane as well as convincing Harriett to also learn to fly. Together they flew all over the United States, into Mexico to Uruapan where he took a sabbatical semester and eventually on a trip through Central America, Venezuela, and back to Florida by island hopping through the Caribbean.

In 1985, Hudson and Harriett moved back to the Texas Hill Country they loved. They retired to Kerrville in a home on the airstrip at Tierra Linda Ranch (TLR), a former 2,900 acre ranch about seventy miles west of San Antonio that had been sub-divided into a multi-home community. Harriett passed away in 1996. At the age of ninety he had to quit flying and sold his airplane (now his third) in the spring of 2011. Hudson lived on the ranch until relocating to Colorado in December 2014 to be near family.

In summary, Hudson Matlock was a unique contributor to The University of Texas at Austin, its components, the engineering profession, his family, his students and the international community. The diversity of his achievements is enormous, particularly for one with modest formal training. However, his most endearing feature was his diligence in striving for thoroughness and precision and imparting that characteristic to his students and professional colleagues. He also made his professional colleagues into personal friends. He will be long remembered as a model for engineering and academia.

This memorial resolution was prepared by a special committee consisting of Professors Richard L. Tucker (chair), Ronald Hudson, David Fowler, and Ken Stokoe.

Distributed to the dean of Cockrell School of Engineering on May 27, 2016, and posted under "Memorial Resolutions" at <https://wikis.utexas.edu/display/facultycouncil/Wiki+Home>.

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