

# Project Pioneer: Robert “Bob” Dietz

When Robert Dietz came to AEDC in 1952 much of the center’s 4,000 acres looked more like a massive construction site than a flight simulation testing complex.

Looking back, he acknowledges AEDC’s transformation has been dramatic, and he is proud to have been a part of that process.

For more than 28 years, he played a major role in the planning, growth, operation and accomplishments of the center.

Now at 83, Mr. Dietz is still amazed at how the road he traveled has led to a life full of memorable experiences and marked by significant professional and personal achievements.

Some people might attribute such successes in life to good fortune – being the right person in the right place at the right time. He sees things a little differently. He credits it to a higher power.

Born at home and raised in St. Louis during the height of the Great Depression, Mr. Dietz was eager to learn from a young age and blessed with the potential to make the best of superb schools and excellent teachers. It wasn’t long before he realized engineering lay in his future.

“I remember one teacher in particular, her name was Mrs. Shapiro,” he said. “She didn’t put up with any nonsense, she expected you to do your work.”

An aptitude for drafting and mathematics during high school provided skills that would serve him well throughout his college years and professional life. His engineering expertise and an instinctive sense of knowing when to be “a meddler” enabled him to make lasting contributions during a career that began with some unexpected twists and turns.

Upon graduating near the top of his class at the University of Missouri-Rolla, Mr. Dietz initially accepted a job with an oil firm, but he found it impossible to resist a better offer when it came along. He interviewed for a coveted research engineering position at the National Advisory Committee for Aeronautics (NACA), and was shocked he was hired. He soon found himself burning the midnight oil in a control room at the agency’s Lewis Propulsion Lab in Cleveland, Ohio.

During the final months of World War II, Mr. Dietz and other young engineers at Lewis had been working late into the night and early morning to solve a frustrating problem, which was hampering the mission to force Japan to submit to an unconditional surrender. They were in the midst of trying to figure out why the engine powering the B-29 Superfortress was coming apart during takeoffs with a full load of ordnance. Pilots had been forced to ditch some of the planes at sea with the loss of all on board - events which haunted the young engineer’s dreams.

It was at this time when Mr. Dietz learned a lot about taking a hands-on, but diplomatic, approach to a challenge from a man who had a reputation for getting things done. That individual was General of the Air Force Henry H. Hap Arnold.

At 2 a.m., General Arnold walked into where the team was working the problem and after a brief introduction, addressed the men, saying, “Boys, we need this airplane in the Pacific. Let’s make it work.”

Those words had a profound effect on the team. They succeeded in solving the problem with the plane’s engines. The planes were able to make their bombing runs, completing the flight from the Marianas Islands to Tokyo and back. The dreaded invasion of the Japanese mainland never materialized, and the war soon ended.

His experience at Lewis left a powerful impression on the young college graduate. Mr. Dietz acknowledged the excellent mentoring he received throughout his career from his peers and the vital role played by competent supervisors.

“Even as a junior engineer when I took the first job at NACA, I was working with geniuses,” he said. “They were teaching me all the time.”

In 1950, AEDC and the Engine Test Facility (ETF) were no more than preliminary blueprints and an idea in the heads of scientists, engineers and senior planners. Mr. Dietz was in St. Louis and working for Arnold Research Organization (ARO), the first support contractor for AEDC. He was already busy tackling the challenge of taking ETF from a concept to a fully functional facility for testing propulsion systems, including turbojet and turbofan air breathing engines and ramjets.

From the beginning, serious challenges kept the team working on ETF very busy. He took the lead in helping the team to overcome a major problem early on with airflow instability in the facility.

“I assigned a junior-level engineer and suggested to him that by applying the Reynolds number at sea level to a model built from quarter-inch plastic would be just right for studying the air flow in those chambers that the designer had put in ETF,” he said.

Mr. Dietz moved up to become a manager on the chief engineer’s staff. He was responsible for the technical direction of approximately 400 engineers and support personnel. He also managed the team’s administrative, labor and grievance issues. In 1957, he moved from ARO to become AEDC’s government chief of the advanced study group. That same year Dr. Theodore von Kármán spent a few weeks at AEDC and personally delivered a series of lectures on gas dynamics. Mr. Dietz attended every class, and he encouraged every one of his team’s subordinates and peers to attend as well.

“He was able to teach in a way that was interesting as hell,” he said. “And you didn’t need to ask him many questions, you just needed to listen carefully. He was really a good teacher, no question about it.”

From 1966 to 1970, Mr. Dietz made significant contributions to the future of aeronautical and aerospace engineering during his five years as director of the von Kármán Institute (VKI) for Fluid Dynamics in Belgium. His work at VKI earned him the Decoration for Exceptional Civilian Service.

Mr. Dietz returned to AEDC in 1970 and became the director of technology. His efforts resulted in improved management of research within the operating contract, and they significantly upgraded the response to Air Force requirements.

Then, as the center’s deputy of planning, he participated in the successful drive to plan, design, develop, promote and help find funding for what became the Aeropropulsion Systems Test Facility (ASTF).

Throughout his career, Mr. Dietz made a significant impact both nationally and internationally as a participant in a number of important organizations. From 1971 to 1980, he was a U.S. representative to the NATO Advisory Group on Aeronautical Research and Development’s Fluid Dynamics Panel and later served as chairman for the organization’s wind tunnel working group.

He also served as the U.S. project officer for the DoD data exchange agreements with West Germany and France. Mr. Dietz has authored more than 34 technical reports on a wide variety of topics, including one on the performance requirements for the basic design of the Mark I Space Chamber.

He played a key role in developing and advocating the country’s needs for an advanced transonic aerodynamics testing capability. This effort culminated in construction of the National Transonic Facility at NASA’s Langley Research Center.

Mr. Dietz was among the first of those inducted as AEDC Fellows in June 1989.



From left, Andy Lennert, an ARO research group manager under the managing director; Arthur Hinnert, VKF engineer; Philip Rubens, with the ETF research branch and Robert Dietz, AEDC chief of technology branch, examine a photo of a liquid-fueled vernier rocket motor used to help steer the Atlas during its launch trajectory. The vernier was used as a model in the center's T-1 and T-2 test cells to determine why recirculation of hot gases was damaging the base of the Atlas.