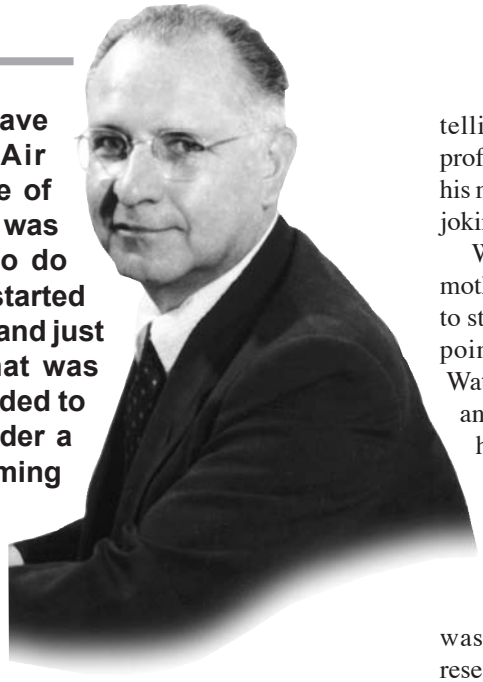
Dr. Frank Wattendorf



"I returned on emergency leave aboard a MATS (Materiel Air Transport Service) plane; one of those old bucket seat C-54s. I was on this plane with nothing to do for a long period of time so I started putting my thoughts together and just started writing them out. That was on June 19, 1945. I recommended to the Air Force that they consider a new center geared to the coming jet age."

Considered one of AEDC's "founding fathers," Dr. Frank Wattendorf was born May 23, 1906, in Boston, Massachusetts.

In 1926, he received his bachelor's degree from Harvard University. As a 20-year-old math major, uninterested in teaching but with a keen interest in aerodynamics, he enrolled in the Massachusetts Institute of Technology's (MIT) new graduate curriculum in aeronautical engineering. There he met Dr. Theodore von Kármán, at that time, the western world's leading aerodynamicist, who was a visiting lecturer from the Aachen Institute of Technology, in Germany.

In his book, *The Wind and Beyond*, von Kármán recalls that it was after his opening lecture that a young Wattendorf introduced himself. He told von Kármán that he was interested in his approach to the subject of aerodynamics. He said there was a limited opportunity to learn basic aerodynamic theory in America and asked von Kármán to recommend a school abroad.

Von Kármán recommended Gottingen and Aachen and told him they had no American students at that time.

On a lark, Wattendorf went to the head of MIT's aeronautics department, telling him that he had found the professor he wanted to work for on his master's thesis. Although he said it jokingly, the department head agreed.

Wattendorf, accompanied by his mother, traveled to Aachen in 1927 to study with von Kármán. From that point on, von Kármán considered Wattendorf a member of his family and the young Wattendorf became his most trusted and reliable assistant.

Wattendorf accompanied von Kármán to the California Institute of Technology (Caltech) as his assistant, where Wattendorf was in charge of fluid mechanics research. He also earned his doctorate degree in 1933 from Caltech. Among his contributions to aerodynamics is his work with von Kármán on the 20-foot, 40,000-horsepower wind tunnel at Wright Field in the late 1930s.

During World War II, Wattendorf was appointed a founding member of

Dr. Wattendorf (right) talks with Arnold Research Organization (ARO) President Bob Williams during a visit to the center in September 1974, on the eve of his departure for Paris, where he was to be awarded the von Kármán Medal, an award presented by NATO's Advisory Group for Aeronautical Research and Development (AGARD).

the Scientific Advisory Group (SAG), formed to study America's needs in the aerodynamic field. He was to report on German advances in gas turbine propulsion, wind tunnels and propulsion facilities.

In 1945, while detailed to postwar Germany to study its advancements in aeronautical and aerodynamic research, Wattendorf was notified of his father's death. He crossed the Atlantic in a combat-painted C-54 transport plane, where he poured through highly-classified notes and papers that lead him to pen the now famous *Trans-Atlantic Memo* to Brig. Gen. Franklin O. Carroll, chief of the Army Air Forces Engineering Division at Wright Field, Ohio, and later AEDC's first commander.

"I returned on emergency leave aboard a MATS (Materiel Air Transport Service) plane; one of those old bucket seat C-54s," Wattendorf said. "I was on this plane with nothing to do for a long period of time so I started putting my thoughts together and just started writing them out. That was on June 19, 1945. I recommended to the Air Force that they consider a new center geared to the coming jet age."

His memo became the first recommendation for AEDC, stating the need for facilities to develop and test supersonic aircraft and missiles. It later became a large part of von Kármán's *Toward New Horizons*, the blueprint for Air Force research and development.

Wattendorf was appointed civilian chairman of the AEDC Planning Group and was awarded the Medal of Freedom in 1946 for his overseas surveys and his recommendation for the new testing complex. Among his recommendations was shipping parts of large German facilities to the U.S. for eventual use in the new test center.

Approval was quickly and easily obtained through the Allied Command in Europe; shipping began in 1945. He was a founding member of the NATO Advisory Group for Aeronautical Research and Development (AGARD), the von Kármán Institute for Fluid Dynamics, and the International Council for the Aeronautical Sciences. Dr. Wattendorf retired in 1968 and was awarded the U. S. Air Force (USAF) Medal for Exceptional Civilian Service.

Gen. Carroll, R. M. Williams, Dr. Wattendorf, Gen. Schriever and Gen. Gossick pause in front of the supersonic wind tunnel during a tour in 1965.

General Carl Spaatz, Chief of Staff of the Air Force, presents Dr. Frank Wattendorf an award while Dr. Theodore von Kármán (center) looks on.

For nearly 15 years, he assisted in the strategic planning and development of new test facilities and in the improvement of existing facilities.

In 1980, the American Institute of Aeronautics and Astronautics (AIAA) presented him with the Ground Testing Award for achievements in the development and operation of advanced aerodynamic and propulsion test facilities.

Frank Wattendorf died in 1986.

In 1987, his widow, Glenn, and son, Roger, attended ceremonies that named the base access highway in his memory.

In 2006, Wattendorf was recognized for his contributions to the center as an Honorary AEDC Fellow.

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www.arnold.af.mil/shared/media/document/AFD-100323-069.pdf