Project Pioneer: William T. “Bill” Strike

William T. “Bill” Strike’s technical role in the von Karman facility has left a lasting mark on the way AEDC conducts hypersonic testing. A recognized industry leader in understanding hypersonic boundary layer characteristics and the wind tunnel simulation of the various boundary layers, he developed a computer program – which is still used today – for determining the location of boundary layer transition for various models tested in the hypersonic wind tunnels.

Mr. Strike developed the miniaturized Mach-Flow-Angularity and total temperature probes needed to make flow field measurements in hypersonic boundary layers along with the various on-board and overhead probing mechanisms needed to position the probes in the flow field area of the interest. He was recognized as a blockage analysis expert and had many accomplishments in this area, including detecting and correcting deficiencies in the WICS test blockage analysis in Tunnel A, conducting profitable testing on a large National Aerospace Program (NASP) blockage model in Tunnels B and C, and developing and documenting the model-tunnel blockage technique and the criteria currently used in the von Karman facility.

He planned and directed the first hypersonic inlet test programs for the NASP. A leader in the development of instrumentation used in hypersonic testing, his instrumentation aided in the interpretation of laser holography, shadowgraph and Schlieren optical measurements of the flow field structure around a body in hypersonic flow.

Inducted as an AEDC Fellow in 1995, he was praised for his role and contributions to advancing hypersonic testing at the center. “AEDC is known as the premier hypersonic ground test facility of the world, due to Mr. Strike’s significant contribution and accomplishments,” wrote then Deputy Director of Operations Navy Captain Stephen J. Himes. “He is known throughout the nation for his work associated with hypersonic boundary layer transition.”

Additionally, his contributions lead to an understanding of the calibration of Tunnels A, B and C and the quality of flow produced by these tunnels; calibration of all tunnels using real gas effects and assessing air liquefaction effects; and examined the need and the technical requirements for converting Tunnel B into a “quiet” tunnel to produce laminar flow conditions on a model in the tunnel.

Mr. Strike began his career at AEDC as project engineer and was responsible for testing in the von Karman Gas Dynamics Facility. His responsibilities included planning, conducting, analyzing and documenting results of wind tunnel tests. He came to work for AEDC after receiving his bachelor’s degree in Mechanical Engineering from the Massachusetts Institute of Technology in 1954.

During his AEDC career, he reviewed and conducted all technical analyses work in his section, and wrote and presented technical papers on his findings. Mr. Strike also had overall responsibility for coordinating NASP testing in the von Karman facility.

Furthermore, he reviewed test design, model blockage analyses, boundary layer simulation requirements and techniques, tunnel flow calibration and flow quality issues, and he also advised von Karman Facility test project engineers.

Mr. Strike performed work for AEDC that did not pertain to the wind tunnels. He developed a computer code for estimating pressure drops and mass flow distribution in the H-1 arc heater and provided spectral analysis that led to an alternate technique for detecting the rotational motion of the arc in the heater.

He was also able to devote his knowledge to G-Range. He was involved in changing the data acquisition technique that provided a more up-to-date record of the range test data and assisted in the acoustical and vibrational analysis of the modifications of the APTU burner arms that had failed structurally during the initial inspection of the facility.

While working for AEDC, Mr. Strike authored and co-authored more than 90 publications, papers and presentations pertaining to his test findings. Some of his topics included effects of liquefaction of air, investigation of suction controlled boundary layer on models, research of stability and transition of laminar boundary layers, and a review of lateral jet augmentation effects.

Mr. Strike passed away on May 18, 1994. At the time of his death, he had 40 years of service with AEDC and was still employed as a project engineer.