

Project Pioneer: Robert "Bob" Haynes

When Robert "Bob" Haynes graduated from the University of Maine in 1952, he had no idea what he wanted to do with his future. One thing he knew for sure was that he was going to be drafted into the United States Army because of the Korean War, so everything else was put on hold.

Instead of going to Korea, in January 1953, he found himself at Redstone Arsenal in Huntsville, Ala., training at the U.S. Army Ordinance Guidance Missile School as an instructor. From this point on he was intrigued by missiles and rockets.

"At this point I knew I was hooked," he commented as he explains his excitement about his future career. "I had become a rocket engine guy."

After a couple years of instructing students, Mr. Haynes left Redstone Arsenal and moved to Los Angeles in 1956 where he worked with the Corporal missile system at the Firestone Tire and Rubber Company, guided missile division. From there he was assigned, as field engineer, to White Sands Missile Range and Fort Bliss where he performed launch operations for the Corporal missile and static testing of the Corporal motor.

"At the time, the Corporal was the nation's longest range ballistic missile with a maximum range of 90 miles," he explained. "I thought it was the most beautiful thing I had ever seen and still do to this day."

When the Corporal missile system began to phase out he began to seek other employment. His mother-in-law sent him a picture from AEDC of a man in an asbestos uniform working in the propulsion wind tunnel and as the word "rocket" was used, Mr. Haynes quickly sent in an application and was hired.

"ARO (Arnold Research Organization), the prime contractor for AEDC at the time, had just started working with rocket motors," he said, "and there were very few people in the industry who were experienced in rocket engines so I took the job." Mr. Haynes only expected to be at AEDC for a few years, but when he retired from AEDC in 1985 and finally, last month from work in his field, he could not have imagined all the wonderful years he would spend working with rocket engines and living in Tennessee.

"I only expected to be at AEDC for five or six years and then I would move on to something else and that was in 1959," he explained. "Here it is 2006 and I haven't left the field yet and don't plan on it."

When he was hired in August 1959, AEDC was just beginning to conduct, in T-1 cell, base recirculation studies on scale models of the Atlas and Titan missiles, with test conditions from subsonic to Mach 3, at altitudes from near sea level to 45,000 feet. He moved from there to J-3, which was just shaking down.

Work in J-3 involved testing of the Titan I and Titan II second stage engines and development and acceptance testing of the Service Propulsion Engine for the Apollo

Service Module (see pages 8-9). Work on J-2 test cell, which was a rocket cell at this time, included test of the second and third stages of the Minuteman ICBM and various other research solids.

"Boy, were we learning," he reminisced. "None of us really knew the intricacies of liquid propellant rocket engines, but we learned. We had many engines malfunction, sometimes caused by engine operating error sometimes by plant operational problems, and sometimes by personnel errors. It was a totally different environment. Everyone was trying to figure out how both the engines worked and how to operate a plant designed for turbine type engine testing. Now, Arnold is leaning more toward a totally success-oriented operation with an available wealth of knowledge accumulated over the years and success is both expected and achieved."

He agrees it is a good approach to have now, but during the 1960s and 70s this knowledge was not available resulting in the necessity to learn from their mistakes and the advice of the engine manufacturers.

"It was wonderful at the time because few had ever done this type of testing before so no one could seriously find fault if we did something wrong," He further commented. "It was a totally different world and probably the most fun I have ever had."

Mr. Haynes made it clear he is not criticizing how AEDC functions today, but he wants people to understand that there is a tremendous amount of history and knowledge related to altitude testing now leading to a higher test success rate.

Moving onto J-4, Mr. Haynes worked on upgrading tests for the Pratt & Whitney RL10, LH2/LO2 rocket engine and initial testing of the solid propellant second stage Peacekeeper ICBM motor and others.

"Those were great years," he remembered. "We were young and anxious. We were anxious to win the national effort to beat the Russians to space and we were really all gung-ho about it."

He expresses his opinion saying "Although it was a good thing when we went to the moon and beat the Russians, but when Neil Armstrong stepped his foot on the moon he pretty well ended the space program at that time because after that, Congress said 'okay we did it,' and cut funding and further rocket testing in the 70s was very meager."

"Even though work had died down significantly, a few of us were able to stay in the rocket business by switching to solid propellant work," he said. "AEDC was still going strong because turbine engine testing was starting up and there was some rocket testing, but not with the emphasis like there was in the 60s."

During the 80s, the pace had picked up some, but a tragic accident involving four deaths in the J-4 test cell convinced Mr. Haynes to re-evaluate his hands-on involvement with rocket engines.

"I was the lead mechanical engineer on that project," he reflected. "Those were bad days. Those were hard days."

In 1985, he went to work for Sverdrup downtown Tullahoma designing test facilities for Pratt & Whitney, NASA and other rocket test organizations until his first retirement in 1991. He continued working for Sverdrup at Stennis Space Center in Southern Mississippi until his second retirement in 1993. He has continued part-time work for Sverdrup and Ares Corp. until last year.

In his retirement, Mr. Haynes still enjoys hearing the latest news about rocket engines and space exploration, and often remembers the great times he had helping defend the nation and making the U.S. the best in the world by working at AEDC.



Bob Haynes, far right, stands with fellow colleagues in the Rocket Test Cell J-4. Mr. Haynes worked with liquid propellant rocket engines in the 1960s and 70s. In the 1980s when J-4 was designed, Mr. Haynes began work on solid propellant rocket engines.