While It's Running

Strolling Through a Tunnel

by Kathy Gattis

"Their first reaction was, `it's impossible'... you can't go in a wind tunnel while it's running," recalls Travis Binion.

It was 10 years ago, the afternoon of May 18, 1981 when Travis Binion, then 16T/16S Branch Manager, and Bill Carleton, then a project engineer, got inside the 16-foot transonic tunnel, 16T, with the airflow going. They are the only two people who have ever been allowed to perform such a test at AEDC.

But this was a special project. It was a situation where machine could not match man or more specifically, man-made technology couldn't match the human eye.

"We were having problems understanding the flow patterns of the stilling chamber in 16T. The TV monitors we were looking at only showed a tuft grid (used to indicate air flow direction) at an angle, so you couldn't really discern what it was doing," says Carleton. "There were unexplained air disturbances and we needed to correct the flow because it was causing problems with some tests. That's when I decided I needed to see first-hand what was really going on inside the tunnel."

Carleton approached Binion with the idea. For safety reasons one person could not enter the tunnel... there had to be two people in there together. Binion thought this was a good idea and he quickly volunteered to be the second person in the tunnel. "I thought this would be fun!" laughs Binion.

"What was the big moment like? "It was like standing up in a pickup truck going 35 miles per hour," says Binion. Carleton describes it this way. "We had a really strong breeze going in there. The temperature was pleasant, but very noisy."

"Everyone was just amazed that we were able to sell the commander and Air Force Safety Board on the idea. There were many people there," Binion says. These people weren't spectators in the traditional sense. Some were there in case anything went wrong, the fire department and survival crews, just to name a few.

No special clothes or equipment were required for this stroll through the tunnel. Both men did wear headsets, though, so that they could communicate with each other while the crew in the control room listened and videotaped them.

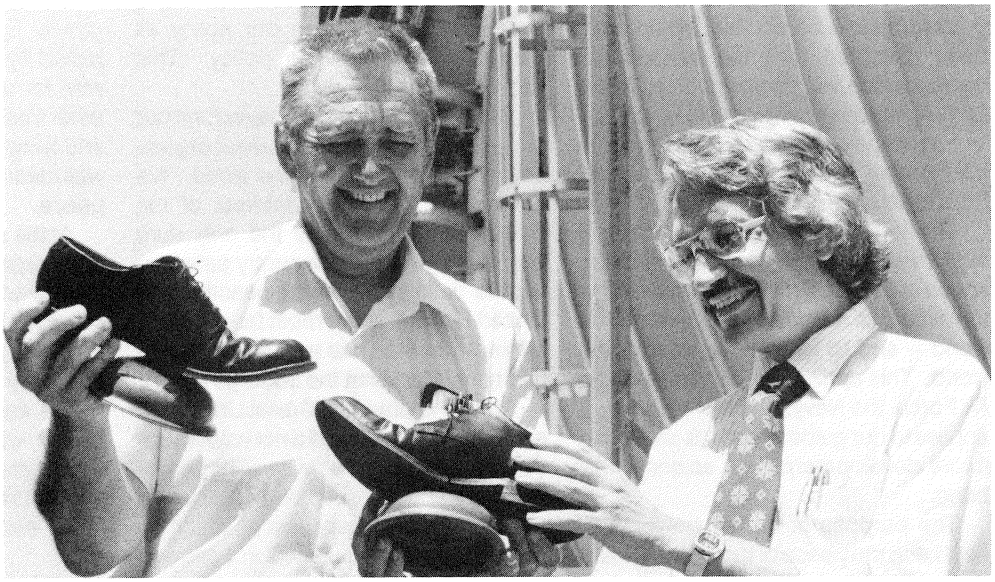
They walked around in the tunnel for about 45 minutes. In that time Carleton used a special pole to determine where the airflow wasn't uniform. The information gathered and the new insight made it possible for the team to eventually solve the mystery. The turning vanes were the primary problem. They had been installed incorrectly and were largely responsible for the airflow problems which had been experienced during previous tests. (Turning vanes are on each corner of all of the tunnels at the 90-degree turns to efficiently direct the air around the corners.)

The findings from the tunnel walk led to the straightening of those vanes and eventually to the honeycomb and screens the tunnel has now.

"Would they do this for another test? "Sure," says Carleton. "If it were necessary, absolutely," says Binion.

All in a day's work??

Binion and Carleton were never in any danger because it was a planned test and the airflow, at 35 miles per hour, was never strong enough to harm them.



Bill Carleton (left) and Travis Binion (right)... 10 years ago. After their wind tunnel test, they were each given one shoe with a suction cup on the bottom.