

Remembering 'The Bowl'

Making history come alive at Santa Susana,
the former federal rocket engine test site

By Kamara Sams

Bill Vietinghoff played an important but unseen role in America's space program: testing rocket engines that propelled Mercury, Gemini, Apollo and shuttle astronauts into orbit.

Nearly 60 years later and now in retirement, Vietinghoff is helping make the unique history of the Santa Susana Field Laboratory come alive for visitors to the Southern California site, which is undergoing cleanup by Boeing and others for soil and groundwater contamination.

"When the countdown started, an incredible tension would float in the air. The engine would roar, the ground would erupt and my body would shake from the pressure," Vietinghoff recalled of his job with North American Aviation at Vertical Test Stand-1, the first test stand erected at Santa Susana.

He started working at the historic test stand in 1953, monitoring pressure gauges in rocket engine combustion chambers.

"When something was wrong, an engine would scream. It was my job to study the pressure fluctuations to find out why," noted Vietinghoff, who was trained as a chemical engineer and supported numerous rocket engine programs before retiring in 1998.

"No amount of education prepared us for those jobs," he said. "There were no textbooks to guide us. We were creating the technology and writing our own textbooks."

A federal rocket engine and energy research site, Santa Susana started operations in 1950 as post-World War II America began its national space program. Rocket engine testing at Santa Susana supported nearly every major U.S. space program, from the earliest unmanned

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satellites through the space shuttle. Similar to other Cold War-era government laboratories, rocket engine testing and nuclear energy research resulted in environmental contamination of soil and groundwater at Santa Susana.

Perched on a picturesque mountaintop, Santa Susana's 2,850 acres (1,150 hectares) is home to riparian woodlands, pre-historic Native American pictographs, and rare plant and animal species. Wildlife thrives at the former government laboratory where Boeing, NASA and the U.S. Energy Department are cleaning up the site.

Since Boeing acquired its land at Santa Susana in 1996, the company, along with NASA and the Energy Department, has made significant cleanup progress, including the removal of more than 69,000 cubic yards (52,800 cubic meters) of contaminated soil and the installation of more than 400 wells—some going down to a depth of 1,400 feet (430 meters)—to monitor groundwater quality.

That first test stand where Vietinghoff worked at Santa Susana was built with support from German rocket engine scientists and was modeled after a similar structure built at the German Lehesten rock quarries during World War II. Soon after, two more vertical test stands were constructed, creating what was called "The Bowl," one of the first test complexes of its kind in the country.

Until the mid-1960s, "The Bowl" supported rocket engine testing for the government's programs. The second and third test stands were demolished in 1996, and Vertical Test Stand-1 was partially dismantled. The remainder of the stand was taken down in late 2010 as part of the environmental cleanup.

Remnants of Vertical Test Stand-1 were not eligible for listing in the National Register of Historic Places or in the California Register of Historic Resources. But Boeing is preparing a Historic American Engineering Record to ensure that the engineering efforts that produced the test stand are preserved. In addition, parts of the test stand are on display in the Smithsonian Aerospace Museum.

Boeing, NASA and the U.S. Energy Department offer regular tours for persons interested in following the cleanup progress. Vietinghoff, who has been retired for 12 years, is one of the tour guides.

"I have very fond memories of my time working at that test stand," Vietinghoff said. "I was amazed by its size, its complexity and how it buzzed with activity."

The Bowl is quiet now. But Vietinghoff can make the site come alive when he shares his memories during the tours. ■

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PHOTO: Retiree Bill Vietinghoff visits the Alfa test stand, situated on federal property at Santa Susana. He worked on the Alfa test stand in 1955, gathering performance data for the Atlas rocket engine. PAUL PINNER/BOEING