

A Dream Realized: German Student Works at TBE

Coming back to Huntsville has given Heinz Reichert a chance to realize a three-fold dream:

- Getting a first-hand look at the city of his birth 25 years ago,
- Temporarily trading the university grind for a taste of "real world" engineering, and
- Learning under the tutelage of German scientist Ernst Stuhlinger, a one-time colleague of Heinz's father.

Since October, Heinz has been at Teledyne Brown, putting his textbook mechanical engineering skills into practice on the design and build of a thermal sensing system for a "drop tube" development sponsored by the Vanderbilt Center for the Commercial Development of Space. The system will provide an accurate measurement of the temperature-time history of a free-falling sample as it travels down the drop tube.

A fourth-year student at Stuttgart Technical University, he had grown weary of his studies and asked his father "to do something different." Knowing of his son's longing to see America, Rudi Reichert arranged for him to stay with friends in Huntsville while getting his hands on some real hardware at TBE's Space Programs Division.

With guidance from Dr. Stuhlinger, Heinz produced design drawings of the thermal sensing system and a 20 percent scale mockup of the drop tube. These elements were subsequently built by TBE and other machine shops and put together in the

Hardware Integration Department.

"Dr. Stuhlinger made the work very interesting, and so it was fun," Heinz said. "It was the first time I had heard of a drop tube, and I wasn't sure what it was, although I have heard of free-fall experiments. But now I am very interested in precision engineering and materials science, especially in micro-gravity experiments."

The drop tube, according to Ric Rice (Strategic Systems Engineering), enables scientists to study the thermal energy of a heated

sample as it transitions from liquid to solid under conditions of free-fall -- essentially a temperature-versus-time study. The integrated thermal sensing system and 20 percent drop tube mockup, currently located in TBE's Assembly and Integration facility, is the final product that Heinz helped to design.

The Space Shuttle makes an enormous contribution to zero-gravity materials research by providing a near-zero-acceleration environment in orbit and up to seven days of experimentation time. The drop tube also makes an important contribution to this field of research, albeit in a more modest fashion, by accommodating a large number of materials experiments that require only a few seconds of low acceleration time (achieved during the period of sample free-fall).

"It's taken eight or nine months of hard work to get the ironmongering done," Rice said. "Now it's going to start being fun. We've been working with a lot of young engineers like Heinz and Mike Mandeville (TBE merit student)."

Heinz has been impressed by the



"Here you have to build something": Reichert contrasts school and real world.

experience.

"I feel I have learned very much," he declared. "It was real life -- not like at the University. Here, you have to build something, and you have problems you never thought about. I was also very happy about the people who helped me -- the teamwork here is important."

In addition to the "hands-on" field experience, Heinz enjoyed the winter snow and springtime wildflowers of his adopted home near Green Mountain. American live entertainment with its variety of musical styles made a hit with him, as well.

Least of all, he liked Huntsville's traffic.

"You need a car here; in Germany, it's not so important, because you can take the train or bus," he said.

Like American students, he has developed a fondness for Corvettes and fast food.

"It was the first time I ever saw a place where you can drive your car up to a restaurant and get food," he marveled.

Following his sojourn in Huntsville, Heinz will travel west to California before returning to Germany. He may come back to work here someday, he speculated, adding, "I enjoyed my stay here very much. From books you can get some basic information, but here I learned so much more."

by Frankie Armstrong

Reichert (right) teams up with American engineers: (left to right) Stuhlinger, Rice, and Overfelt.

