

# AFRL plays major role in historic near-space jump

■ Space Vehicles Directorate support Felix Baumgartner's record-breaking descent

By Michael P. Kleiman  
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For more than nine minutes Oct. 14, an international audience watched as Austrian daredevil Felix Baumgartner egressed from a capsule 128,000 feet above the earth and fell toward the planet reaching speeds of 834 miles per hour, to become the first person to break the sound barrier outside a vehicle.

When Baumgartner safely touched down 33 miles east of Roswell, N.M., shortly before noon, he had also achieved another milestone, topping Air Force Col. Joe Kittinger's 52-year-old record of the highest free fall by 25,200 feet.

The historic event would not have occurred without the significant participation of the Air Force Research Laboratory's Space Vehicles Directorate and one of its contractors, ATA Aerospace.

Five years ago, Red Bull Stratos, which sponsored Baumgartner's near-space jump, approached the directorate about supporting the mission, but the Kirtland-based organization's officials did not believe the activity had enough of a science and technology perspective, so they passed on it. About 18 months later, the directorate decided to assist the proposed mission, with the reversal attributable to a cooperative research and development agreement signed between the agency and ATA Aerospace.

"The agreement with ATA Aerospace allows a



Courtesy photo

The launch crew for Felix Baumgartner's historic leap from near-space stand in front of the 2,900-pound capsule, which would take the Austrian daredevil to an altitude of 128,000 feet, a few hours before liftoff Oct. 14. Harold "Vernon" Baker, who serves with the Air Force Research Laboratory's Space Vehicles Directorate, (back row, fourth from left) and ATA Aerospace employee Tracy Gerber (front row, fourth from left) played significant roles in the record-breaking event.

commercial company to use our facilities, evaluate equipment and conduct testing. It is a good way to offset costs and take advantage of excess capacity of both the facilities and equipment," said Harold "Vern" Baker, chief, Space and Integration Test Branch, Integrated Experiments and Evaluation Division, AFRL's Space Vehicles Directorate. "We realized that under the CRADA, we should be able to assist Baumgartner's jump and allow ATA to use our launch equipment for our high-altitude balloon program."

For Red Bull Stratos' two unmanned flights and the three manned missions (Baumgartner's two test jumps and his record-breaking descent), on-site ATA Aerospace staff performed liftoff and capsule-retrieval functions with the support and expertise of AFRL staff

members Ed Coca, balloon launch director, and Baker, who ensured pre- and post-operations procedures had been conducted safely and properly. A 20-plus year veteran of the Air Force high-altitude balloon program, Baker watched Baumgartner's historic jump from mission control at the Roswell International Air Center.

"The balloon, which took Felix's capsule to 128,000 feet, was filled with 30 million cubic feet of helium. After about an hour delay due to winds, the balloon lifted off shortly after 9:30 a.m., for a two-and-a-half hour journey to the egress point. During that time, Felix's visor was not defrosting and there was concern the mission would have to be aborted," said Baker.

"The visor eventually defrosted from power in his suit, so after about 15-20 minutes, Baumgartner

leapt from the capsule. Several seconds into the free fall, he began to flat spin and there was a lot of concern in mission control, but he suddenly stabilized. He was also close to blacking out, but if that would have occurred, a drogue parachute would have been deployed. Those of us in Mission Control roared when Felix landed on the ground safe and sound."

ATA Aerospace employee Tracy Gerber, who has worked at the directorate since 1995, and has participated in many high-altitude balloon launches, said the opportunity to play a significant role in, and witness Baumgartner's leap into the history books, has been a career highlight.

"We've done a number of launches over the years, but none of them, in my opinion, compare to the one we did Oct. 14 with

Red Bull Stratos and Sage Cheshire Aerospace, who built the capsule, and also the David Clark Company, which makes all the balloon suits for the NASA program did the one for Felix as well," said Gerber, Space Technology Research and Integrated Vehicle Experiments deputy program manager, in support of the Space Vehicles Directorate's Space Integration and Test Branch.

"Getting to work with all these organizations was an incredible experience. Finally, from Oct. 23 to 28, I had the unique opportunity to attend a post-mission event in Salzburg, Austria, sponsored by Red Bull Stratos, to recognize all those involved in Felix's record-breaking jump."

In preparation for the big day, Baker arrived on scene late Saturday and then after discussions with three operations managers, including Gerber, he and Coca directed the helium inflation of the balloon at about 3 a.m. Shortly before 6 a.m., Baumgartner entered the 2,900-pound capsule. Three and half hours later, he began his ascent at a rate of about 1,000 feet per minute. The rest is history.

"Our expertise, our contract support and the contractor expertise we've developed played a huge part in Felix's successful mission. ATA Aerospace spent a lot of time, effort and money putting together all the procedures, processes and countdowns, and deserves much of the credit in making the record-shattering event happen," said Baker.

"Although Felix was the main focus and rightly so, it took a team of dedicated and determined individuals to ensure it was mission possible."

## Losing weight — The key to controlling calories lies in portion control

By Shari Lopatin  
TriWest Healthcare Alliance

You've changed the foods you eat to include more fruits and veggies. You've cut back on the soda and you've started exercising three times a week.

Yet you're not losing weight ... or at least, you're not losing enough. Why?

It really all boils down to two very small, but significant words: portion control.

"Many individuals are totally

unaware of how much is an appropriate amount of food," said Lynne Campagne, a registered dietitian with TriWest Healthcare Alliance.

How many calories are you really consuming each day? For example, a single serving of meat — chicken or steak — is roughly the size of your palm. Reducing the number of calories you eat or drink can help to prevent weight gain ... and promote weight loss.

The key to controlling calories lies in portion control.

**Try portion control: 'Create your plate'**

The American Diabetes Association has a tool to help you control your portions better.

It's called "Create Your Plate," and it focuses first on portion sizes and then food choice. It helps diabetics manage their condition and it can be an effective weight-loss tool.

You can apply the basics of "Create Your Plate" easily at home. Here's how it works:

■ Put a line down the middle of

your empty dinner plate.

■ On one side, cut it again so you have three sections on your plate.

■ Fill the largest section with non-starchy veggies (green beans, spinach, mushrooms).

■ In one of the smaller sections, place starchy foods, such as whole grain breads or potatoes.

■ Fill the other small section with meat, such as chicken or salmon.

■ Add an 8-ounce glass of low-fat milk or a 6-ounce container of light yogurt.