

Creating Rockets

by George Sowers

Thirteen years ago I held my breath as a two hundred foot tall rocket roared to life and lifted off the launch pad at Cape Canaveral, Florida. I was several miles away surrounded by TV cameras and reporters. My brilliant and witty quote, "Whoop Hoo," was picked up by the wire services and reported around the country. The sentiment was heartfelt: as Chief Systems Engineer, my job was to make sure all the pieces and parts of the twenty story machine worked as intended to send the communications satellite to its destination 20,000 miles above the earth. I was terrified that some tiny detail was missed.

In total, the launch was the achievement of a team of a thousand engineers and technicians. And it was designed and built in Colorado.

My rocket, the Atlas V, recently completed its 53rd successful mission and has launched spacecraft to a range of destinations from low earth orbit to Pluto. The Pluto mission, NASA's New Horizons, will make its closest approach to Pluto this summer, (July 14, mark your calendars!) after a nine year journey covering three billion miles. The Atlas V has been a workhorse for national security, launching satellites for the Global Positioning System, military communications, missile warning, and intelligence gathering.

For a rocket scientist, developing a new large rocket is about as good as it gets. The process is arduous: long, painstaking and costly. There is the upfront creative phase where the design is formulated and analyzed. Then comes development testing, a series of science experiments to demonstrate that the various design elements work. Then you need a factory to build the design just created. That step involves more design of machines and tools for the factory. And you have to design and build the launch pad, control center and assembly buildings. Finally you have to prove that each and every bit will work together. Atlas V took four years and cost over two billion dollars.

The rewards are priceless.

My career has been blessed with a number of such development opportunities, the Atlas V experience being the high point so far. I'm looking forward to another thrill in 2018 when the Atlas V will fly humans for the first time, NASA astronauts to the International Space Station. I get goose bumps just thinking about it.

But even more exciting is that I get to do it all over again. Our team at United Launch Alliance is starting the development of a new rocket, with even more power and capability than the Atlas V or the Delta IV, the other rocket in our fleet. We plan to reveal this new rocket to the world tomorrow at the National Space Symposium in Colorado Springs. It will fly in 2019.

The Space Symposium is a uniquely Colorado event. Held at the venerable Broadmoor, the Space Symposium attracts several thousand leaders and enthusiasts in commercial, civil and military space from around the world.

It is a symbol of the importance of space to Colorado's economy. Colorado has the highest per capita number of Aerospace workers in the nation, with nearly 170,000 total jobs and more than \$3 billion in annual payroll.

Tomorrow we'll also reveal a brand new name for the rocket. For the past several weeks, you've been able to vote for one of five names: Eagle, Freedom, GalaxyOne, Vulcan or Zeus. For the first time in history, the public has chosen the name of the next great American rocket.

If you voted for the winner, you too will have something personal at stake when it soars into the sky for the first time. Maybe you'll yell "Whoo Hoo!" like me.