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Tourism in space closer to countdown

Private effort unlikely to hurt NASA, but its expertise is helpful

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Space experts believe last week's launch of a private spacecraft puts space travel one step closer for tourists. Is NASA in jeopardy?

Probably not, Huntsville space businessmen and experts say, but the dominant role of governments in space launches could change now that Burt Rutan's SpaceShipOne was sent on a sub-orbital flight Monday. Huntsville has long been known for space and rocket expertise because of the work done at Marshall Space Flight Center. But Rutan's private flight illustrates that North Alabama rocket experts can push into space without NASA.

One of the developers of the SpaceShipOne engine was Huntsville native Tim Pickens, who led the design team for the ship's propulsion system. He was the chief engine designer for nine months, then a consultant for Rutan's company, Scaled Composites, through last week's flight.

Now Pickens is working with a Huntsville company, High Altitude Research Corp., to develop a rocket to get to space privately and stake out a market in space tourism. Pickens also has his own space company, Orion Propulsion.

Along with Pickens' involvement, a significant amount of the propulsion design and engineering support for Rutan's groundbreaking flight also came from Huntsville.

Rutan's SpaceShipOne was powered during its maiden voyage into space by a hybrid motor, which used solid fuel and a liquid oxidizer. The motor was devised in part using a rocket design developed by the Huntsville Alabama L5 Society, or HAL5, a group that supports space exploration.

The contributions to the SpaceShipOne project drew extensively from HAL5's High Altitude Lift-Off, or HALO, program, a plan to launch rockets into space from a high-altitude balloon.

Next step

"In terms of Huntsville's future in this, we have shown we do have our own capabilities." said Greg Allison, a HAL5 member who's also head of High Altitude Research Corp. and executive committee chairman of the 20,000-member National Space Society, "We are a player for the long haul in the space tourism market."

How soon the next step is taken in private space travel depends on investment dollars, Pickens said.

"We are in the age of rocket-powered barnstorming," Pickens said. "Either we as a nation -- America -- gets behind this or we will be sitting around doing paperwork and another country will be reaping the benefits of space tourism. That's where we are now.

"NASA won't go away," Pickens said. "There's nothing that can replace the space shuttle that you could build in your garage. But the SpaceShipOne flight is an important step to get regular people closer to voyages into space."

Burning bucks

Rockets cost big bucks, and about the only source for rocket money to burn is a government. A space shuttle launch costs about \$500 million, and a Boeing Delta rocket, made in Decatur, or Lockheed Martin Atlas 5 rocket, costs from \$80 million to \$150 million.

"The space industry has always been subsidized by the government," said 91-year-old Konrad Dannenberg of Huntsville, a member of Wernher von Braun's original rocket team that developed the V-2 rocket for Germany, then the Saturn V for America.

"The (V-2) was sponsored by the (German) government. NASA is sponsored by the government, and even the rockets that carry commercial endeavors like the communication satellite is sponsored by the government.

"It is becoming apparent that private citizens are coming closer to building their own spaceships without the government."

Where else?

Crunch the numbers and what Huntsville has at stake in rocket work becomes clear. Every year about \$6 billion and more than 70,000 jobs can be tied to aerospace work in North Alabama, according to a 2003 study by the University of Alabama in Huntsville. The combined federal and private aerospace payroll in the Huntsville area is \$2.5 billion.

If the work shifts to private industry, could Huntsville be left out in the cold and at the mercy of shifting business priorities? Experts said that is not likely because of the unique work performed here.

NASA and local contractors like Boeing Co. have developed space technology here since the 1960s, and moving that work away from the center of expertise would be foolhardy, said Mark McDaniel, a member of the NASA Advisory Council and a Huntsville lawyer with long-standing ties to the space community.

"Where else are you going to get what Huntsville has?" asked McDaniel. "A company could go elsewhere for the expert engineering you have here, but it would cost more in the long run.

"I think you are going to see Alabama and Huntsville take a larger role in (aerospace) work now that the president has directed us to return to the moon and small private industry is breaking into" space tourism.

Shuttle recycling

One idea gaining support is using components of the space shuttle system in a private space venture. In fact, one California business has built on a Marshall idea that would turn the shuttle's external fuel tank into a space station.

A single tank could be used for science research in space and multiple tanks could be used as a large, wheel-type station similar to the one in Stanley Kubrick's film, "2001: A Space Odyssey."

"This concept dates back to von Braun, really," said Gene Meyers, CEO of the California-based Space Island Group. "His team came up with a space station concept back in the 1950s. The external tanks could be used as the core of a wheel-type space station."

A wheel in space would have areas of partial gravity and, depending on the configuration, could be used to simulate Martian or lunar gravity, Meyers said. "The research could be used to support long-duration flights into space."

Meyers wants to develop a fleet of improved shuttle orbiters to support the private station, and he said the program would have initial start-up costs of about \$7 billion. Meyers wants to use a privately financed and owned fleet of shuttles he calls Space Shuttle II. The private shuttles would be based on the NASA design, and use the space shuttle main engine NASA uses now.

That investment would be recouped through research and tourism sales on the private station, he said. Meyers predicts a need for hundreds of external tanks and shuttle engines.

There would also be a need for Delta IV rockets Boeing makes in Decatur, he said.

"All of this work has great impact on Huntsville," Meyers said.

"We don't want to reinvent the wheel here. I would look to companies and engineers in Huntsville presently working on the shuttle program to support this."

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