SEED
SEEDMAGAZINE.COM

SPACE

Eat My Contrails, Branson!

The hypersonic jet set is stoking a race to build spaceports from Singapore to Sheboygan.

by **JASON STEVENSON** • Posted June 23, 2006 12:23 AM

From the JUNE/JULY issue of Seed:


Credit: Matthias Weinrich

The Southwest Regional Spaceport's newly-poured concrete launch pad looks like a suburban driveway lost in the New Mexican desert. Fifteen feet beyond where the thick white slab ends, dust devils swirl through a landscape of spiky yucca plants.

"There's nothing here now," admits Bill Loomis, 58, a member of New Mexico's Spaceport Authority, "but I get excited thinking what this place will be like in 20 or 50 years." Loomis and I are standing where the launchpad of New Mexico's $200-million spaceport is being built, a vast table-flat plain 150 miles south of Albuquerque. "The small rockets will launch here," explains Loomis, a large man with a politician's recall of names, "and the two 12,000-foot runways will be back there."

The concrete pad is virtually the only manmade object in sight, but space pioneers don't dwell in the present. And when Bill Loomis looks around he sees workshops, fuel tanks, assembly buildings and a terminal welcoming millionaire space tourists. The authority plans to turn this barren tract into the world's busiest private space hub, creating $500 million in economic activity by 2020.

New Mexico isn't the only state with atmospheric ambitions. In March the Wisconsin legislature voted for a $15-million spaceport in Sheboygan. Oklahoma is converting a former B-52 base into a launch site for things like rocket-powered Learjets. Amazon.com founder Jeff Bezos is quietly building mission control for his space company, Blue Origin, on his West Texas ranch, while Virginia-based Space Adventures plans two enormous facilities in the United Arab Emirates and

Singapore. Spaceports in Florida, Virginia, Nevada and Alabama are also in the pipeline.

Suddenly, the private space business has become the next biotech, and a dozen communities around the country are vying to call themselves "Rocket City, USA." Some of these will fail, some could succeed, and one might even blow itself up—all in a race to become the O'Hare for the next century.
Despite enormous risks and expense, a half-dozen spaceports and rocket-makers are sprinting to meet federal regulations, secure funding and attract customers—and no one knows who will win, or even what winning means. The future of civilian space travel will be determined over the next decade by countless technical decisions, a handful of rocket scientists, and a few tense seconds on the launch pad. For now, realistic long-term planning is measured in months. Nevertheless, certain trends are becoming evident.

First, suborbital rocket trips will be the short-term driver. Five minutes of exospheric weightlessness fetches $200,000 at Virgin Galactic (contracted to launch at New Mexico's spaceport), and is offered by two other companies as well. While the flight experience will be more Chuck Yeager than Buck Rogers, these suborbital flights are only a first step. "Space tourism will drive the ability to go into orbit," says Rick Homans, New Mexico's secretary for economic development, a major backer of the spaceport.

Second, although the frenetic development of the private space business now resembles the disparate early days of the auto industry, or computer manufacturers in the 1980s, the private space industry will mimic commercial aviation. New firms are already organizing themselves into vehicle builders, spaceport operators and tourism firms, with only a few full-service operations (like Blue Origin). As with airlines and airports, space tourism firms will buy vehicles from manufacturers and pay user fees to spaceports, while the ports will provide the infrastructure to ensure safe and reliable launches. Forward-looking planners envision a global network of spaceports, allowing launches from a US spaceport to touch down at a sister port on the other side of the world.

Third, the spin-off technology from these ventures could create more markets. The stringent requirements for space flight necessitate the design of specialized systems and parts. For example, Oklahoma's Rocketplane, Ltd., has built an entirely new aerodynamic vehicle around the pressure cabin of a Learjet. NASA is famously responsible for popularizing Tang drink mix and Velcro, and the spillover potential from the private space race could be even bigger.

Common challenges are also emerging. Because launch facilities are built in unpopulated areas to reduce the risks to "uninvolved parties" (like rockets landing on playgrounds), and highly specialized engineers and technicians don't commonly inhabit unpopulated areas, the small, rural economies can't supply the thousands of specialized workers needed to operate spaceports. "There is a real

need for aerospace engineers in New Mexico," says Paul Jaramillo, who heads a Las Cruces, New Mexico-based flight analysis firm that can't find local staff. "A spaceport is going to require engineers and technicians at all levels," he says. To address this problem, New Mexico recently funded the state's first dedicated aerospace engineering program.

The private space industry is about to go critical as, over the next year, companies stop shooting off press releases and start firing rockets. This summer, Connecticut-based UP Aerospace hopes to inaugurate New Mexico's spaceport by launching a 20-foot-tall payload rocket. Rocketplane plans test flights by mid-2007, as does Scaled Composites, which is building its SpaceShipTwo for Virgin Galactic. Space Adventures has hired a Russian firm to design a space plane to be ready for launch in 2008. In addition, some residents of Van Horn, TX, where Blue Origin is located, have noticed workers widening roads and laying utility wires to the secretive launch site.

In October, New Mexico will host the second-annual X-Prize Cup exposition—the start of the commercial space race is dated to the 2004 awarding of the first, $10-million X Prize—attracting the rocket whizzes, aerospace entrepreneurs and deep pockets at the vanguard of the private space economy. Despite some intense rivalries, many of these leaders are realizing that their own success requires their fledgling industry to create and market an entirely new business. Many believe that competition is beneficial. "Ten years from now, if New Mexico has the only spaceport, then the industry didn't make it," says Rick Homans. "My competition isn't publicity hungry billionaires," adds Space Adventures CEO Eric Anderson, referring to Virgin's Richard Branson. "It's the people out there in the world who don't yet realize that space travel is possible for private citizens." To win over a skeptical public, the private space industry must build success one launch at a time.

Eat My Contrails, Branson!, written by Jason Stevenson, posted on June 23, 2006 12:23 AM, is in the category Space.