

ALBUQUERQUE

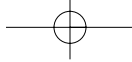
NEW MEXICO

BEST
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Ready for Takeoff

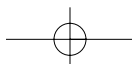
ALBUQUERQUE has suddenly turned business-friendly—
attracting new enterprises and creating highly skilled
and well-paid manufacturing jobs ▶ **By Mark Tatge**

HIGH ON A HILL OVERLOOKING ALBUQUERQUE THE LIGHT-brown dust swirls, and a steel skeleton gleams under the sun. The 52,000-square-foot structure is a dream taking shape for Vern Raburn, chief executive of Eclipse Aviation. In a matter of months, once approval comes from the Federal Aviation Administration, his workers will start assembling up to four small, ultra-light jets a day. The Eclipse 500 seats five passengers, has a top speed of 431mph and can cruise 1,473 miles on a 230-gallon tank of gas. It will sell for \$1.5 million, less than one-third the price of comparable craft. There are



Sunrise for Eclipse Aviation: Vern Raburn and the \$1.5 million ultralight jet he developed.

CHIP SIMONS FOR FORBES



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already orders for 2,400.

Raburn's baby is a model of low-cost production, already under way (for test flights and demos) at a hangar across from the tarmac of Albuquerque's airport. A robotic arm guides a spindle rotating at 800rpm across two sheets of aluminum lapped over one another. As the tool spins, it creates friction, softening the metal to the consistency of clay; as the metal cools, the sheets bond together. Friction stir welding is at least twice as strong and 20 times as fast as hand-riveting. But it still takes a lot of skilled hands to put this 33-foot-long, 3,390-pound plane together, relying on wings from Fuji Heavy Industries, turbofans from Pratt & Whitney Canada and a nose assembly from Enaer of Chile. Raburn has hired 600 engineers, mechanics, sales and marketing folks, earning from \$30,000 to \$200,000-plus. Thousands more jobs could materialize if Eclipse survives and its suppliers and maintenance services relocate to Albuquerque.

Albuquerque? Just a decade ago the place seemed to be doing everything possible to discourage enterprise and growth. One of the largest employers was Sandia National Laboratories, a Department of Energy unit established in 1949 to develop nuclear weapons and now also working on solutions to nonmilitary problems in energy, computing and geologic sciences. That institution, plus the sister weapons lab to the north in Los Alamos, made New Mexico into a tax magnet, sweeping up \$2 in federal spending for every \$1 sent by its citizens to Washington.

Outside of federal spending, though, New Mexico was no economic success story. Little of the weapons technology filtered out into commercial use to create jobs. Crime rates were rising faster than personal incomes; thousands of people were hightailing it out of Albuquerque. In the 1970s Bill Gates and Paul Allen lived there and hatched their software company, but Microsoft departed for Seattle in 1978.

Nine years ago Raburn, an early Microsoft veteran who was living in Scottsdale, Ariz., quit his job managing investments for Allen. Having gotten a B.S. in industrial technology from Long Beach State University, Raburn, who earned a pilot's license at age 17 and had always wanted to start a small-jet business, had no trouble raising \$60 million (part of an eventual \$500 million) from a group of angel investors that included Gates and retired DaimlerChrysler chief Robert Eaton. But where to locate a factory? Phoenix was one possibility. But Albuquerque stood out for its cheap housing, low taxes and labor costs and lots of developable land that lay idle.

At the start of the new millennium this region of 793,000 finally began to loosen up. When Raburn told state officials that a 3% gross receipts tax on aircraft sales would kill any relocation deal, the legislature repealed the law in six days. "That cinched the deal for us," says Raburn, 55. It didn't hurt that New Mexico eventually invested \$20 million in Eclipse, while also giving 150 acres of free land for an assembly plant and abatement of sales and property taxes for 20 years. Raburn figures such incentives should help lower his operating costs by \$250 million over ten years.

The Land of Enchantment has become the Home of Accommodation. Since Bill Richardson became governor in 2003, the state has cut personal income taxes 40% and capital gains by half. (He has raised a few less visible taxes, including ones on trucks, diesel and other fuels and on annual motor-vehicle registration.) This Democrat has also relaxed rules on government investment in startups



New life for an old downtown: Historic buildings have been rehabbed into luxury condos, offices and a movie theater.

and offered nascent businesses goodies like a 10% tax credit on wages and benefits paid to each new job paying more than \$40,000. The result has been a boom in high-skilled manufacturing work—with a projected 10% rise in such jobs over the next year—and a steady increase in real wages, an average 2.4% a year (after inflation) over the last three years. For the third year in a row Albuquerque, with an unemployment rate of just 4.9%, claims the lowest business costs in the U.S., propelling the city to the number one spot on our list of the Best Places for Business and Careers.

It's still very much a work in progress. New Mexico has the thirteenth-largest concentration of engineers in the nation; 31% of Al-

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Cool and hot: Doug Smith has the means to chill medicines; Mesa del Sol, site of a \$6 billion project.



is still New Mexico's historical mascot? Even the governor recently announced he'd applied for a permit to carry a concealed weapon.

That said, good things are happening. Tempur-Pedic, an \$837 million (2005 sales) Lexington, Ky. maker of mattresses and pillows, will open a 750,000-square-foot factory later this year, offering jobs to 300 people; Merillat Industries, an Adrian, Mich. unit of \$12.6 billion Masco Corp., is building a 350,000-square-foot plant to make kitchen and bath cabinets, good for another 700 jobs. And the idea of technology transfer is finally taking hold. "New Mexico scientists have great ideas, but they have never been good at finding customers beyond the federal government," allows Michael E. Skaggs, chief executive of NextGen, an economic development think tank. "They have needed help to get traction."

One example: Advent Solar. James Gee, who developed a cheaper way to produce photovoltaic cells at Sandia, joined with Russell Schmit, a former ex-

ecutive who worked on solar energy projects at Motorola and Texas Instruments. Relying on a design known as emitter-wrapthrough, Advent uses ultrathin (200 to 250 microns) silicon wafers, 5 inches on each side, allowing for greater electricity production. Once lasers drill tiny holes in the silicon, the wafers are bathed in phosphorus and baked in an oven. Another innovation: Unlike standard panels,

buquerque's adult population has a college degree. But the state also ranks 48th for primary and secondary schools. (Richardson helped a constitutional amendment, to lift the annual education fund by \$100 million or more a year, squeak through.) The city ranks number 173 out of 200 metro areas in safety, with 843 violent crimes per 100,000 residents in 2004. Is it any wonder that Billy the Kid



the conductive grid is placed on the back of the wafers. "This improves light absorption," says Gee.

Schmit, who has raised \$39 million to finance Advent's startup, is working out the bugs in a basement at the University of New Mexico. Next year, when it begins selling panels to residential and commercial customers, Advent will move into a \$25 million, 87,000-square-foot factory south of downtown. By then it will employ 130 workers.

Advent's headquarters is the first of many planned for a massive 25-square-mile development called Mesa del Sol, bounded by I-25 on the west and the Manzano Mountains on the east. Forest City Enterprises of Cleveland, in partnership with the state and the University of New Mexico, is preparing to turn the site into an industrial and residential mecca—a 25-year, \$6 billion project. Plans call for an ambitious 18 million square feet of commercial and industrial space, an initial 38,000 homes and up to 100,000 more Albuquerqueans by 2030. "This is the biggest inner-city land development project in the country right now," says Mark Lautman, Mesa del Sol's director of economic development.

THE WASTE LAND

Tax dollars have certainly helped spark a revival in Albuquerque. But there's help—and then there's folly. New Mexico Governor Bill Richardson is spending \$225 million in public funds to build a rocket launcher on a desolate 27-square-mile site near the White Sands Missile Range starting in 2007. Billionaire Richard Branson has already sold 150 rides at \$200,000 a pop, with the first blastoff set for

2010. State officials blithely predict 5,820 jobs by 2020, generating \$752 million in economic activity. Hello, Roswell.

Then there are Tinseltown giveaways to studios—\$20.5 million worth since 2003. The

lures include zero-interest loans and 25% rebates on production expenses. To justify all the freebies, state officials are claiming every dollar spent on films in New Mexico translates into \$3. Nonsense, say economists; it's more like \$1.80 at best.

Perhaps the biggest pie in the sky is taking place right on earth: a \$393 million commuter rail to link Santa Fe and Belen, 35 miles south of Albuquerque, that will supposedly be operating by December 2008. The money is earmarked for railcars and some existing freight track; more rails will have to be laid down. No one dares estimate the tab for commuter subsidies—or the cost of maintaining a rail bureaucracy, known as the Mid-Region Council of Governments. —M.T.



It may also be one of the most antic. Just a 15-minute drive from downtown and the airport, Mesa del Sol is hoping to ensnare Hollywood. Culver Studios, says Lautman, is building a 550,000-square-foot studio complex it will rent to production companies. Zanier is a Richardson-backed idea for a \$225 million spaceport that would one day blast tourists into orbit (see box, below).

On terra firmer are some investments the state has made in fledgling companies. The money comes from the \$4.5 billion severance tax fund. Since the laws were changed in 2003, the state has anted up \$100 million in New Mexico companies, and it is committed to invest up to \$135 million more. It has co-invested with Jerome Mattingly—sometimes directly, sometimes not. Mattingly is a refugee from the Bay Area, having spent 18 years running small biotech firms. He moved to Albuquerque two years ago and became president of New Mexico Private Investors. Since then he and 62 wealthy individuals have plowed \$4 million into 12 young companies. Among them: Advent Solar; Mesofuels, a hydrogen fuel cell outfit sold to a U.K. company; Veralight, which makes diabetes tests that use light to measure glucose levels through the skin; and One Connect IP, a Voice over IP outfit. New Mexico has participated in some of these ventures; by law it's allowed to invest up to \$20 million per venture, provided the money is matched.

Most tech companies start without any state help. Ned A. Godshall made it entirely on his own. As a onetime engineer for Sandia, he built microelectronic devices one-fourth the width of a human hair that were used to spy on the Kremlin. Since leaving 11 years ago, Godshall has launched four startups, including companies that plan hydrogen transport and look for microelectronic substrates superior to silicon. The latest could be his biggest. Altela provides on-site water desalination to mining and oil and gas companies. Its device is basically a giant still, 6 feet tall by 20 inches wide, that uses low-cost heat to evaporate and then condense water from dissolved salts and other industrial contaminants. "Everybody else is using reverse osmosis, and it uses too much electricity," says Godshall, who has a background in fuel cells. He licensed the technology from Arizona State University and raised \$3 million. Altela has hired 12 employees and hopes to lease enough of the 96 units to post revenue of \$11 million by year-end 2007.

Across town from Godshall, Douglas Smith, a former University of New Mexico chemical engineer, is trying to keep things cold. "I got bored of writing research papers for academic journals," he says. Since 1994 Smith has patented more than 90 inventions, most using nanoparticles to develop new types of insulation. Research into a self-cooling can for beer or soda led to a new type of packet, called "NanoCool," to chill injectable drugs for up to a week. Pushing a button on the pouch causes the water to flow and begin evaporating, resulting in a temperature drop of up to 30 degrees within minutes; to keep the pouch from expanding, nanoporous carbon mixes with water vapor, condensing the gas to a liquid state so the process can begin again. Smith hopes to sell \$10 million worth of NanoCool and other products this year.

What about that self-cooling pop can? "We're still working on it," Smith smiles. One problem: "It would add 25 cents to a 50-cent can of Coke. No one would buy it." **F**