



Borates from Rio Tinto are used to manufacture most screens for TVs, smartphones, and laptop computers.

EAST KERN TECH

Where sun, sand, wind, and stark desert deliver cutting-edge innovation.

By Donna McCrohan Rosenthal

East Kern County plunges eastward from Sierra Nevada peaks down to foothills that edge the Mojave Desert and fans south to the grotesquely contorted Joshua trees of the Antelope Valley.

Vast stretches of dry, undeveloped, and frequently windy terrain define much of it. Yet these potentially inhospitable attributes not only account for its unique beauty but also yield decided advantages for certain types of industry and cutting-edge technology.

Endless untouched land means near-zero pollution, almost limitless visibility, excellent flying weather, and immense ranges for testing top-secret aircraft and air weapons. This invites military R&D, which in turn leads to protected airspace. Moreover, soils that hardly favor farming often connote rich mineral deposits that fuel commerce and manufacturing; windy hills furnish perfect sites for wind farms; and huge expanses of sun-parched ground ideally suit solar farming. The resulting career opportunities attract a highly skilled workforce in key areas of science and engineering.

So let's try it again: East Kern County sweeps from the serene and scenic Sierra Nevada summits to the Mojave Desert where it reaches east toward Death Valley and south to the Antelope Valley, across a diversity of topographies and climates, embracing a spectacular combination of natural and human resources every inch of the journey. It ranks as

highly affordable for businesses and families as compared to major metropolitan populations, and offers enviable access to outdoor recreation.

HOME OF MILITARY MILESTONES

The U.S. Navy discovered East Kern County's special merits in the 1940s, first setting up in Inyokern and then transitioning a few miles east to China Lake. Testing began within a month of the station's formal establishment in 1943. Today the Navy's largest single landholding with more than 1.1 million acres, the Naval Air Weapons Station (NAWS) supports the Navy's research, development, acquisition, testing, and evaluation ("RDAT&E") of weapons systems for the warfighter from A-Z: AIM, the air-intercept missile 9 Sidewinder, to Zuni, the laser-guided rocket that can pinpoint fixed and moving targets in close proximity to friendly forces.

The U.S. military continues to maximize East Kern's exceptional conditions both at China Lake (Ridgecrest, CA) and Edwards

Air Force Base (Rosamond, CA). Edwards AFB includes the Air Force Flight Test Center and NASA's Armstrong Flight Research (formerly Dryden), and is the Air Force Material Command center for conducting and supporting research and development of flight and testing aerospace systems. The Edwards complex has provided testing >>

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for almost every U.S. military aircraft since the 1950s, was home to each of the five flown shuttle orbiters for the duration of the Space Shuttle program, undertook much of the research that made the July 20, 1969 lunar landing a reality, and supports operations of the International Space Station.

FROM SKY HIGH...

The same qualities that brought the Army and the Navy have drawn private entrepreneurial ventures to East Kern County. As quintessentially characterized by Bill Deaver, first chair of EKEA (East Kern Economic Alliance), who prior to EKEA served on the staff of two Members of Congress and a California State Assemblyman and held positions in the administrations of Presidents Ronald Reagan and George H. W. Bush, "The region's workforce has pretty much created aviation technology in recent years, and has created and is working to develop the commercial space industry."

In Mojave, aerospace pioneer Scaled Composites emphasizes design, tooling, manufacturing, analysis, fabrication and developmental flight tests of air and space vehicles, guided by founder Burt Rutan's philosophy that "the best ideas come from the collaborative efforts of small, closely-knit project teams and an environment unlimited by aversion to risk." Rutan designed Voyager, the first plane to circumnavigate the globe nonstop and without refueling, and has five aircraft on display in the National Air and Space Museum, Washington, D.C. In a magnificent Mojave suborbital space moment, Scaled Composites' SpaceShipOne completed

the first manned private space flight in 2004. Another dominating presence in Mojave, Mojave Air and Space Port and industrial park hosts more than 60 firms involved in aerospace design, flight testing and research and, on a parallel track, heavy rail.

In Ridgecrest, Monarch Inc. manufactures unmanned aerial systems with built-in cameras for aerial mapping and energy. We know these new age machines as drones or, in Monarch's more precise words, "unmanned aerial systems that excel at the science of remote sensing. We use reflected sunlight to take photographs, measure plant health, determine mineral content, and create photorealistic models of the world below."

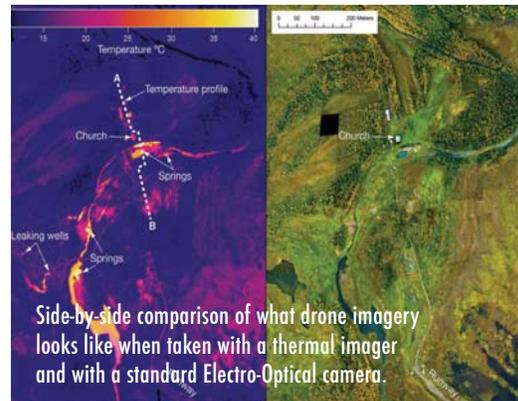
Monarch enhanced its spectrum in January from a products-focused company to a services focus. According to founder and CEO Eileen Shibley, "Instead of just producing and selling drones, our primary mission is to positively transform the way people work

Pertexa and Kern County Medical Society entered a partnership that can furnish new telehealth solutions and productivity applications to KCMS members across Kern County.

by using state-of-the-art aerial mapping to inform and empower actional decisions. Our drone service customers include those interested in civil engineering-type surveys, stockpile measurements, environmental mapping, mine mapping, progress mapping of construction sites, etc."

...TO INSIDE THE EARTH

Shifting the spotlight to the mineral kingdom, Rio Tinto Borates produces roughly half of the world's refined borate from its open-pit mine in Boron,



CA – one of two world-class borate deposits on the planet. We use borates in our daily lives, nutritionally as well as in computers, flat-screen TVs, flame retardants, fiberglass, glass, detergents, ceramics, and pest control, and depend on them for agricultural micronutrients. Although mining here began back in 1872, Rio Tinto employs 21st century technology to mitigate environmental impact. Their initiatives have been recognized repeatedly by the California Integrated Waste Management Board's Solid Waste Reduction Awards, and Rio Tinto has donated land and associated mineral rights to the federal government in order to expand Death Valley National Park.

WHAT'S NEXT? MEDICAL ROBOTS?

Ridgecrest-based Pertexa Healthcare Technologies Inc. has unveiled two breakthroughs, one a physician's software called Radekal that reduces paperwork time by automating diagnosis, prescription creation, and progress notes for a variety of devices, and the other the robot R.I.T.A. (Robotic Intelligent Telemedicine Assistant) that can travel from room to room to interact with patients and allow doctors to diagnose and treat patients remotely, for instance in underserved hospitals and very rural populations, as well as in situations of bioterrorism or highly communicable disease that would endanger anyone attempting hands-on contact.

PHOTOS COURTESY OF MATE NEWMAN AT MONARCH, INC. (MAPS), SCALED COMPOSITES, LLC (SPACESHIPONE)



The White Knight turbojet aircraft climbs over the Mojave desert with SpaceShipOne attached below.

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EAST KERN ECONOMIC ALLIANCE

With a view toward championing East Kern's diverse strengths, R&D expertise, panoramic beauty, and entrepreneurial spirit, and incubating future technological advances, the East Kern Economic Alliance (EKEA) launched in 2009. Deaver explains that "a group of community leaders felt this area needed more economic development horsepower and a forum to share ideas and achievements. We work with KEDC (Kern Economic Development Corporation) and Greater Antelope Valley Economic Alliance (GAVEA) to meet our goals and to keep each other informed of current economic development activities in each community. KEDC and GAVEA work constantly to promote the region locally, in California, and nationally and internationally to attract and retain business, informing clients of the region's benefits. Those benefits include a location 90 miles north of the world's biggest market; lower land, tax, and employee costs; and business-friendly local governments along with market access from two major railroads, two major highways, and airports in Mojave and Palmdale that can handle just about any aircraft now flying."

The coalition consists of East Kern communities and economic development organizations, the boundaries of East Kern corresponding to those of the East Kern Air District. They meet bi-monthly to share progress reports, update one another on their respective issues and improvements, and hear guest speakers, among them Kern County Supervisor Zack Scrivner who talked about RENEWBIZ grants; Bakersfield's Granite Construction Company's Bill Taylor, who discussed California's aggregates industry that deals in components such as gravel and crushed stone, the building blocks of the infrastructure; and research analyst Priscilla Hamilton and economist Minoli Ratnatunga of the Milken Institute think tank



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Mining operations at Rio Tinto Borates.

who presented suggestions for a strategic roadmap.

The alliance addresses natural resources in Kern County, the aerospace/defense sector, green energy, oil production, solar and wind farms, revitalization, retail, county agriculture, tourism and hospitality, mining, healthcare, and drone technology. Observes Monarch's Shibley, "We always have a robust agenda, and the key is sharing from a business perspective and lessons learned, so that we can avoid mis-

Ridgecrest's Economic Director Gary Parsons revealed the possibility of an Internet data ("cloud") storage facility impressed by the access to alternative power, high security owing to military proximity, and low seismic threat.

Meetings rotate cities throughout East Kern – at Boron's Borax Visitor Center, California City's City Hall, Mojave's Air & Space Port, Ridgecrest's Monarch, and Tehachapi's Police Station and Holiday Inn Express, to name a few – attended by EKEA participants from Boron, California City, Kern River Valley, Mojave, Ridgecrest, Rosamond, Tehachapi, GAVEA, and Kern EDC. They consider good news and bad, weighing outlooks and how East Kern could best apply them: "We're number one in terms of mobility," declared Richard Chapman, KEDC president, at an EKEA meeting late last year. "So the jobs we have, not just in oil and gas, but in renewable energy and other sectors, create more mobility in Kern County than anywhere in the country—12.2 percent. If you were born in the bottom 20 percent, the odds of you moving to the top 20 percent are higher in Kern County than anywhere in the country." Much of that positive picture spills over into East Kern.

EKEA's logo shows a stylized sun and mountain, together with the slogan "East Kern: Innovation. Rising." A fine and appropriately prophetic choice.

Said Wiggins, Mayor of Tehachapi, at a California City EKEA gathering, "Whoever might think there isn't much happening in East Kern should just attend one of these meetings to change their minds." **CR**

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RITA
Remote
Intelligent
Telehealth
Assistant

RITA uses
state-of-the-art
technology to
allow physicians
more flexibility
in assisting pa-
tients remotely.

takes others have made." At one meeting, Tehachapi Mayor Susan Wiggins outlined a project resembling a ski lift that would transport bike riders to different places on the trails. At another,