Kern County Fire Department

Bakersfield, California

Case Study

At a Glance

Department
- Career, county, 8 battalions

Area Covered
- More than 8,000 square miles

Ground
- Valley farmland, mountains, a river canyon, desert, oilfields

Vehicle
- Ford Bronco, donated by Ford's Bronco Wild Fund, built out by Darley and Public Safety Direct

In the Vehicle
- Starlink and a large touchscreen monitor in the back

Drones
- DJI Matrice 4TS flown on DroneSense, paid for by a county supervisor grant

Runs it On
- Wildland fires, structural fires, hazmat, big traffic wrecks

How Often
- Almost every day



The Jurisdiction

Kern County Fire covers more than 8,000 square miles with one department.

Farmland on the valley floor, the Tehachapi mountains, the Kern River canyon, the edge of the Mojave, and one of the biggest oilfield areas in the country. Eight battalions cover all of it. A lot of their calls happen a long way from the nearest building, cell tower or radio site.



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The Problems

They Can't Buy Enough Starlink

Kern has used it for years and still can't put one in every rig. What they have goes to hand crews that spike out and to the division chiefs who run the duty. That chief doesn't roll on every call, so on most incidents the connection just isn't there.

"We're such a large agency that not everyone has Starlink, and we can't afford to give everyone Starlink."

Zach Wells, Kern County Fire

The Command Post Went Where the Signal Was

If you need coverage to run the incident, you park where you can get coverage, not where you can see the fire.

The Big Command Rig is Too Slow for Most Calls

Kern owns one about the size of a school bus. It's the right call for a fire that runs several days. Most of what they catch is done inside twelve or twenty four hours, and by the time that rig is set up the incident is winding down.

They Still Can't Reach Past the Command Post

Handheld mesh radios were supposed to link the divisions back in. They didn't work well enough and Kern mostly stopped using them.

How They Use the Rapid Command Bronco

Kern gave the Bronco to the public information officer. That turned out to be the important decision. The PIO now works as an intel officer alongside command and general staff, and the division chief who used to be the only connection on scene can move around the incident instead of anchoring it. It also let them park the command post where they want it.

"Before, a lot of times you had to choose your incident command post based on where connectivity is. Now that you can really set up where it's more advantageous for the incident commander to be able to see out, that definitely helps change our workflow."

Zach Wells, Kern County Fire

The monitor in the back is what makes the drone useful to more than the pilot. The intel officer plugs the controller into the screen, and the IC, the safety officer and the five or six people usually standing at the command post all see the same thing.

"They're not looking over the operator's shoulder. They're looking at the big, and they can communicate and task the intel officer to look at certain areas."

Zach Wells, Kern County Fire

DroneSense sends that same picture off the scene. Wells gets a link on his phone when a drone launches, and so do the ops chief and the fire chief. There's no audio. But when the ops chief calls the IC for an update, they're both looking at the same image instead of one describing it to the other.

Kern also put the Bronco's Starlink on their own private network. A battalion chief who shows up without a connection can use it. Nobody has to depend on it.