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## Tracing the root of a fire takes time

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### Power lines, transformers likely caused most of blazes

**By J. Harry Jones and Kristina Davis**

UNION-TRIBUNE STAFF WRITERS

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It's hard to comprehend how a small spark can set in motion a firestorm that destroys vast amounts of property and takes human lives.

When it happens, people like Gary Eidsmoe are the ones charged with finding out where that spark originated – and why.

Normally, when just one fire is involved, investigators systematically search for answers from the beginning. On days like Oct. 21 and 22, when fires were breaking out all over San Diego County, thorough examinations have to wait.

Eidsmoe, 54, retired from Cal Fire at the end of last year. He had been a fire investigator for 17 years.



CHARLIE NEUMAN / Union-Tribune  
 The Witch Creek fire began directly beneath 69-kilovolt electric transmission lines, which Glenn Drown pointed out on his ranch west of Santa Ysabel.

But he's still on call and was sent to Potrero on Oct. 21 to find the cause of the Harris fire. Eidsmoe also helped with investigations of the Poomacha blaze near Palomar Mountain and a number of fires on Camp Pendleton.

Cal Fire has not officially announced the causes of any of last month's fires. Eidsmoe said it is his understanding that most were caused by power lines

arcing or falling down in high winds, or transformers exploding.

The exceptions:

- The Harris fire, Eidsmoe said, most likely was started by a campfire about one mile east of Potrero, where there are no power lines. The area has been used in the past by illegal immigrants and partyers.
- The Poomacha fire began in a house on the La Jolla Indian Reservation.
- One of the smaller fires on Camp Pendleton was caused by a vehicle backfire. Another resulted from a sparks caused by a man repairing his car without disconnecting the battery.

The Horno fire was the largest on Camp Pendleton. Eidsmoe said investigators were able to pinpoint the origin to a 6-foot-square area not far from a road, but not the cause. No evidence of arson was found.

### **Who's responsible?**

Determining the cause of a fire is important because large blazes cost millions of dollars to fight. The state sometimes seeks to recover money from individuals or companies found responsible, and insurance companies want to know so they can try to recover some of what they pay out.

When firestorms hit, Eidsmoe said, investigators only can hop from one fire to another making quick assessments.

“We want to get there as soon as possible before anything gets destroyed by civilians or fire crews,” he said.

If no cause is obvious, a team of investigators returns later.

The first priority is figuring out the general area where a fire started, typically by interviewing witnesses, 911 callers and the first engine company on the scene.

At the beginning, many fires burn in a V-shape pattern, with the origin at the narrowest part of the V. Sometimes the cause is obvious, such as a car fire along a highway that spreads into the brush.

When answers are not so apparent, investigators systematically pore over the scene. They consider char patterns, weather conditions and wind direction to trace the movement of the flames.

“You can look at solid fences or concrete block and see charring or sooting on one side, but you may not see it on the other side,” said Cal Fire Battalion Chief Doug Lannon, who heads Cal Fire's investigators in San Bernardino.

Along the way, investigators plant small colored flags in the ground. Red means forward spread; blue signals back burning; and yellow marks where the fire changed direction. They sometimes plant as many as 100 flags before a final white one, indicating the origin.

### **Forensics and footwork**

Once the origin is determined, investigators work backward, looking for anything that might have sparked a fire. That includes evidence of human activity, such as remains of a campfire, tire tracks or arson devices, as well as power lines or a lightning strike.

At times, they rope off a search grid similar to that of an archaeology dig to sift through ashes for micro-indicators.

“That's when we get on our hands and knees with our scraper and magnifying glass and go through each square,” Eidsmoe said. “It can take a long time.”

Only after all other possibilities have been eliminated do they reach a conclusion.

“Before we can even think arson, we have to rule out all other causes,” Lannon said.

Investigations can last months as interviews continue and items are sent to the lab.

“We will use forensics and all of those things you see on 'CSI,' ” Lannon said.

Investigators determined a wildfire in Anza-Borrego Desert State Park last summer was sparked when someone shot at a power line, Eidsmoe said.

A metallurgist examined a piece of the line and found where the bullet struck. The bullet's copper casing was found, as well as a stash of empty Corona bottles, but not the shooter.

After working a scene, much of an investigator's job is running down leads.

“A lot of time is spent interviewing people,” said Cal Fire Chief Jim Garrett, who heads the fire prevention bureau. “When they're displaced, you have to track them down and find out ... what they have to say. A lot of things don't pan out.”

On Friday, on a remote and beautiful piece of land south of state Route 78 and west of Santa Ysabel, rancher Glenn Drown stood where investigators have determined the Witch Creek fire started on his property.

Although Cal Fire officials have not revealed what they believe is the cause of the fire, where the fire began is directly beneath 69-kilovolt electric transmission lines.

“It's amazing,” Drown said, to think that from such a small beginning could result in a fire that burned all the way to Rancho Santa Fe.

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