

Texas Propane

THE MAGAZINE FOR THE TEXAS PROPANE GAS ASSOCIATION

Surveillance Device

Prototype Gets Thumbs Up

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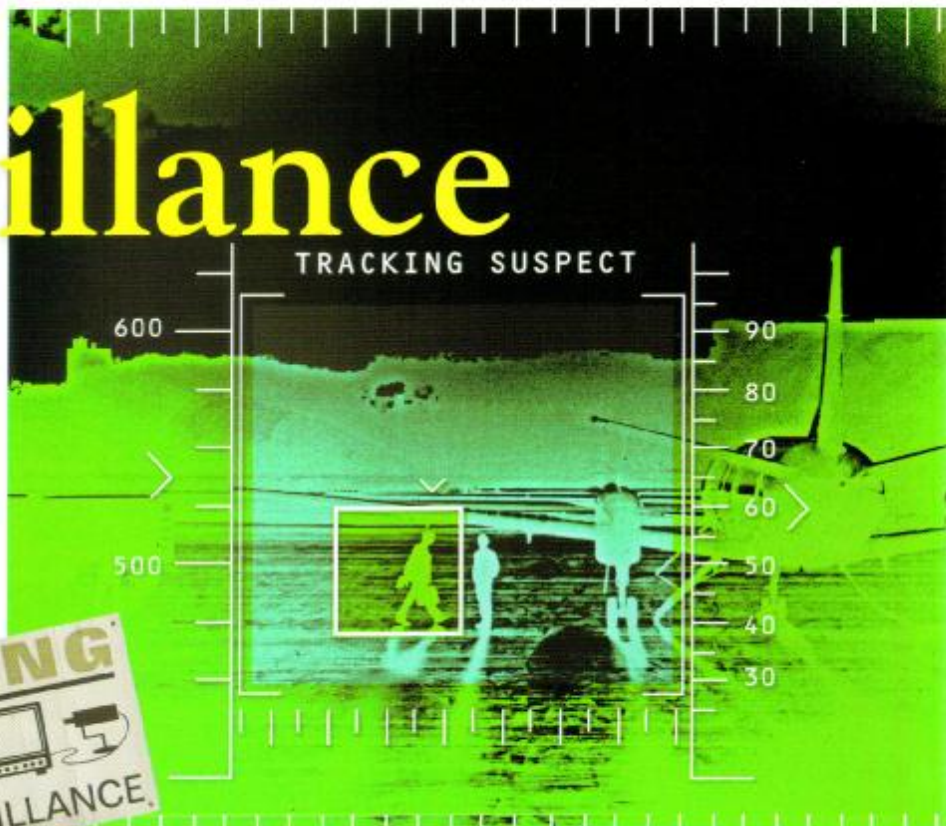
Propane Surveillance

Device
Prototype
Gets
Thumbs
Up



Unit less
susceptible to
weather, easier
to hide and
disguise than
traditional
equipment

By Laura Mohammad



LAW OFFICIALS NEEDED A SURVEILLANCE DEVICE THAT WAS QUIET, DURABLE AND COULD REMAIN IN REMOTE AREAS WITHOUT ATTENDANCE FOR LONG PERIODS OF TIME.

Ferrellgas Partners, LP, and TPGA member HBH Gas Systems are producing just such a device with the use of propane. NanoDynamics Energy Inc. out of Buffalo, N.Y., has begun work on the prototype, as well.

"What we like about it is it's quiet, it has a low heat signature and it's fuel efficient," said Tony Dale, vice president of business development for Liberty, Mo.-based TPGA member Ferrellgas, the nation's second largest propane retailer.

"(HBH's Harris Baker) and I talked to some people and decided this was a project we wanted to do, and we decided to work together," Dale said. Dale approached the Propane Education and Research Council for a \$27,000 grant, which pays in part for the project; it could run \$50,000 and up for the prototype.

Field Testing

The Mobile Propane-Powered Surveillance Unit was placed on a remote South Texas ranch at the Mexico/U.S. border to monitor smugglers and poachers.

The exact location and name of the ranch is not being revealed for security reasons.

Planning began in February and the unit was tested until June.

The unit on the south Texas ranch was ground-mounted to ensure that it was stable enough to run on computers.

The unit can travel over rough terrain, critical for this kind of work. The fuel cell is lightweight—11 pounds—and about the size of a lunch box, Baker told propane executives and personnel on Sept. 12 at the Propane Technology Forum, held by the Railroad Commission of Texas in Austin. He's president of Austin-based HBH, which specializes in the marketing, design and implementation of central gas distribution systems.

Because the unit is quiet, it can monitor from a hidden area without being detected, he said. And should a lawbreaker want to search for devices with heat-seeking goggles, this little device thwarts those plans – it generates little heat. Also, the unit can operate in anywhere from 20-degree weather to 110 degrees.

"It will not run under water. That's about it," Baker said.

Working Efficiently

Right now, it can be left unattended for 14-



30 days, ideal for this kind of work.

"The sheriff's department is loving it," Baker told conference attendees.

Work now focuses on evaluating more efficient power sources, from a 200-pound thermo-electric generator to a propane-powered fuel cell, which can extend the fuel supply and allow designers to change the type of cylinder used. Designers may be able to use a conventional 20-pound BBQ-type cylinder rather than an industrial forklift cylinder, ensuring that the cylinder is more commonly available, smaller and more compact. "The smaller we can make the unit, the better the unit will be," Dale said.

The power source runs the digital video recorders and cameras. The new fuel cell also makes the unit even more environmentally friendly, according to Baker.

The project has taught designers that there were weather-proofing issues. The unit's cameras filled up with water, according to Baker.

"It was field-tested in deep, south Texas in the rainiest season since 1856, and there you have it. You don't want to learn about it after you sell the unit," Dale said.

"We wanted a unit that could be deployed by the agents themselves, rather than going to an outside, third-party integrator," Baker said. They would like to see the units operate unattended for a minimum of 30 days. The current unit consumes about three gallons a day; with a 100-gallon capacity, it can run for 30 days. A more efficient unit would use one-third to half as much fuel, allowing it to run for 60 or more days off of the same amount of fuel, according to Baker. In fact, a Coleman camping canister can run the fuel cell for 14 hours.

"The law officials can keep this running with a barbecue cylinder; (they can) take them with them; switch out the cylinders and go," Baker said.

Target Pricing

The team would like to see the power source in about \$5,000 or less, making them competitive with high-end, solar-power rays, which are currently the most common products for this kind of work.

"A pretty stout solar system would start to run about \$4,000-\$5,000," Baker said, with the less expensive solar-power sources running \$2,500-\$3,000. "It's okay to charge a reasonable premium for reliability," which the propane-fuel cell provides, he says.

Right now, poachers and smugglers shoot, steal and tear up the solar units, which is not much of an issue for the propane units,

because, with their size, they can be easily hidden.

"You could camouflage it to look like a pile of trash. You can make it look like a tree, a shrub," Baker said.

The solar units are also susceptible to weather.

Other Applications

There are many application possibilities, say Dale and Baker, including everything from powering elk-crossing signs in Arizona to hurricane-evacuation signs on a lonely

stretch of Louisiana highway, where there is no power source. Other possible applications include monitoring VIP events, construction sites, illegal drug operations and even illegal dumping, because the units can be so easily hidden.

And the system would allow law enforcers to use existing equipment, saving tax dollars.

"What we're trying to do is support some of their different components. They can use what they have. They don't have to go out and buy some new stuff," Baker said.

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