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That Doorbell Looks Innocent, But It May Be a Federal Offender

FCC Agents Track Rogue Radio Waves To Aquariums, Bulbs, Blankets; \$16,000 Fines

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Updated March 12, 2014 12:52 a.m. ET

A federal agent who shows up unannounced at a building along a Texas highway might be looking for any number of things: illicit drugs or immigration violations, say, or illegal firearms.

Or fluorescent lights.

Which was what the agent had in mind who walked into the Perfect Cuts salon in San Antonio last July. The lights were violating communications regulations.

The agent had used signal-tracking equipment to home in on the offenders and told the owner, Ronald Bethany, that his lights emitted radio signals that interfered with an AT&T Inc. cellphone tower.

That violated Federal Communications Commission rules protecting airwaves licensed to AT&T, the agency determined. Mr. Bethany didn't have a license to operate on that frequency, the FCC agent told him, so his fixtures needed to go.

"I told them 'OK, but who is going to pay for this?' " Mr. Bethany says. "I've got to use the lights."

Interference can be serious business. In 2012, hedge-fund mogul [Philip Falcone](#)'s wireless venture, LightSquared Inc., filed for Chapter 11 bankruptcy after the FCC determined it would interfere with GPS signals.

The mixed signals aren't always so weighty. In recent years, the FCC has issued warning letters directing people to stop operating cordless phones, television sets and wireless cameras.

Last June, an FCC letter to a Springfield, Ore., address warned that "harmful" interference had been traced to the property and that the operator may have to "cease operation" of the device: "possibly a bad doorbell transformer."

That 2013 letter lists other common culprits, including aquarium heaters. Similar letters in 2012 went to several operators of videogame consoles. "This unresolved problem," the letters typically warn, "could result in a monetary forfeiture."

The FCC can demand fines up to \$16,000 a day or \$112,500 an incident from people who aren't FCC licensees. Offenders usually rectify problems, the FCC says, often working them out with whomever is complaining.

Managing the radio spectrum "has been part of our core mission since the inception of the FCC in 1934," says Julius Knapp, head of the agency's Office of Engineering and Technology.

Most anything electrical can violate. "Incidental radiators," in FCC lingo, are devices like electric motors that aren't built to generate radio signals but do anyway. "Unintentional radiators" are designed to generate signals within devices like computers but aren't supposed to broadcast. "Intentional radiators" like cordless phones can transgress when they transmit outside intended frequencies.

Agents arrived at Shelton's Auto Lube and Auto Wash in Fortuna, Calif., in 2008 looking for signals disrupting AM broadcasts. They traced them to Shelton's carwash equipment.

"I didn't know anyone listened to AM radio anymore," says owner Odell Shelton. The FCC told him a driver complained about car-radio reception. It took a few days to find and fix the problem.

The government doesn't much care why interference happens. To the FCC, noise is noise.

In a 2013 letter, the FCC wrote to the owner of a plasma TV set after a ham-radio operator complained to the agency of interference. "Continued operation of the television," warned the letter, from which the TV owner's identification is redacted, "is not legal under FCC rules."

It doesn't matter how far bad signals extend. The FCC pressed Perfect Fit Industries into a consent decree in which the Charlotte, N.C., bedding maker agreed to develop a compliance plan and pay a \$7,000 fine in 2005 after some of its electric blankets caused interference, FCC documents show. Perfect Fit didn't respond to inquiries.

"Just because it doesn't go very far," says the FCC's Mr. Knapp, "doesn't mean that we don't need to fix it."

Ham-radio operators are a frequent source of complaints. A 2012 FCC letter told a Pomona Park, Fla., resident to stop using a well pump that conflicted with amateur-radio frequencies.

A 2009 letter warned Woodstock Farm Animal Sanctuary, Woodstock, N.Y., that its electric fence was causing interference for a ham-radio operator and noted it had been warned before

"We didn't want our rambunctious, dark-colored, 2,000-pound steers pushing down the fence, wandering onto the adjacent state road and causing a deadly accident," says sanctuary co-founder Doug Abel.

"Right next door, our ham-radio-loving neighbor has a 60-foot high antenna that would allegedly pick up a clicking sound from our fence." He installed hardware to damp the signals.

Private signal sleuths, too, hunt down errant emissions. Jay Jacobsmeyer, president of wireless-engineering consultants Pericle Communications Co., investigates interference at 150 to 200 cell sites a year, mostly for wireless clients. His team last November faced a puzzling signal in San Diego that would pop up, disappear for weeks, then resume.

Using directional equipment, it identified a cordless phone on a yacht that occasionally visited, Mr. Jacobsmeyer says. The skipper agreed not to use the system in port.

Radio hobbyist Tom Thompson of Boulder, Colo., last year tracked a signal using a homemade contraption. After knocking on the suspect's door, he traced it to ballasts on marijuana grow-room lights. He says he built a filter that the grower agreed to use.

Ballasts are frequent offenders. Makers of the components, which regulate electricity to bulbs, test them for FCC compliance. Some interfere anyway.

Ballasts earned Brookfield Office Properties Inc., the real-estate company, a citation last month at one of its Los Angeles buildings where lights were interfering with a Verizon Communications Inc. cell site. The FCC had warned Brookfield in May, asking for progress reports, but it received none, the new letter said. It warned of fines and possible equipment seizure or jail time.

A spokeswoman for Brookfield says it tries to resolve issues regarding its properties but doesn't comment on "regulatory matters."

The lights at Perfect Cuts in San Antonio came from General Electric Co., which in 2011 found some of its ballasts caused interference, a spokesman says. GE has offered to replace those ballasts free of charge.

Mr. Bethany says he initially declined GE's offer. But when an FCC letter after the agent's visit mentioned a possible \$16,000-a-day fine, he swapped ballasts.

He still doesn't see why he needed to, given that his 18-year-old shop predates the cell tower. "I was here first."

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