

Johnson County Maker Space

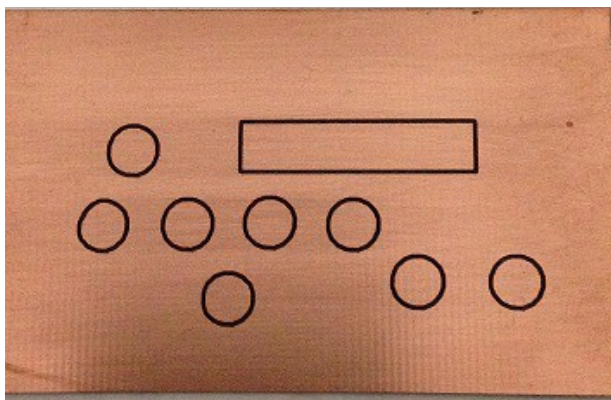
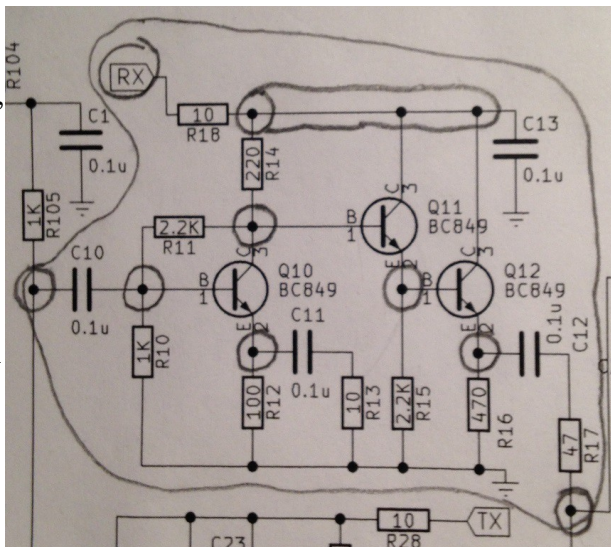
Bill McMillan, NØYUD, discovered that Black and Veatch sponsors a Maker Space at the Johnson County Central Resource Library, 9875 W. 87th Street.

The space features a 3D printer, CNC (computer numerical control, that is, computer-controlled) milling machine, laser engraver and an electronics workbench. All are free to use, but require making a reservation for individual pieces of equipment. Bill reports that he used the 3D printer to build custom radio knobs and the CNC machine to create custom printed circuit boards.

One of Bill's projects involved using the CNC machine to create a circuit board for an RF amplifier. The photographs show the schematic, which shows the general location of the isolation pads he wanted to carve, the board after carving and the completed amplifier.

Bill reports that there were people on-site who were available to help people who had never used this kind of equipment.

Photos by NØYUD



APRIL MEETINGS

- April 14** -- "How I Mounted My Mobile Radio" - 7:00 pm in the parking lot
- April 28** -- Associated Radio shows the latest in Amateur Radio gear

The Johnson County Radio Amateurs Club normally meets on the 2nd and 4th Fridays of each month at 7:30 PM at the Overland Park Christian Church (north entrance), 7600 West 75th Street (75th and Conser), west of the Fire Station.

Much of the membership travels to the Pizza Shoppe at 8915 Santa Fe Drive for pizza buffet and an informal continuation/criticism/clarification of the topics raised at the meeting ... or anything else.

LEAVE THE CHURCH, TURN RIGHT (WEST) ON 75TH. TURN LEFT (SOUTH) ON ANTIOCH. TURN RIGHT (WEST) ON SANTA FE. PIZZA SHOPPE IS JUST PAST THE SONIC ON YOUR LEFT.

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-> FEEDBACK <-

*A publication of the
Johnson County Radio Amateur Club, Inc.*

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All email addresses are available at w0erh.org

A newsletter is only as good as its contributors. Given the caliber of the FEEDBACK's contributors, any failings of the FEEDBACK must be laid squarely at the feet of your editor. Bill McMillan, NØYUD makes his third appearance Technical wiz Tom Wheeler, NØGSG and first-class photographer Charlie Van Way, NØCVW regularly fill these pages.

And then there's Jaimie, ADØAB, who--not content with a monthly Hambone story--asked if he could start contributing a puzzle.

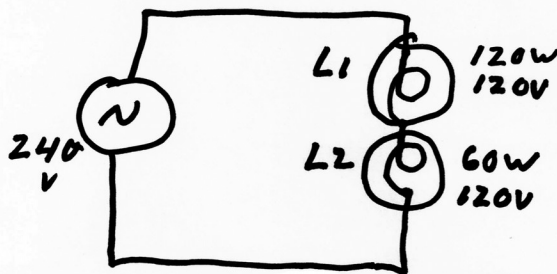
Well, of course.

-- Chip Buckner, ACØYF

The little old lady's garage has only 240 volt service. Not being very good with a screwdriver, she asked you, yes, you, dear reader to connect her lights for her. She wanted a bright light in the main part of the garage and a dimmer one inside a cabinet. She offered two bulbs, one rated at 120 volts, 120 watts, and the other rated at 120- volts 60 watts. She suggested that because the two bulbs were both rated at 120 fvolts, they could be connected in series across the 240 volt line as she showed you in her drawing. You agreed and proceeded to install the 120 watts bulb in the garage and the cabinet.

When you applied power, one bulb certainly burned much brighter than the other. Which bulb burned brighter?

The answer is elsewhere in this issue.



PRESIDENT'S CORNER

We received a nice thank you for the use of the club's repeaters in the wake of the Overland Park fire. The re-



peaters were use to coordinate shelter information.

The observation tower location at Shawnee Mission Park will not be available for our Field Day use this year. Jay, WJØX, and the Field Day team have been busy looking into alternate locations for 2017.

Our Club will be sponsoring the next WWIUSA event. Sign up to support the event. Remember the museum offers discounted tickets for Amateur Radio operators during the event. So work the event for a few hours and then tour the museum

Public service events that need amateur radio support return in April. Volunteering is a very good way to meet other hams. Spend a few hours helping others and learn more about your radios

Last year the Club provided volunteer guides for Ensor museum. The museum is open only on Saturday and Sunday and needs volunteers for about four hours each day. Last year we had the same group of club members supporting this effort. It is only a few hours and we would like more member to assist. We alternate months with the Santa Fe Trail Amateur Radio Club.

Please note that the April 14 program (How I mounted my mobile radio) will begin in the church parking lot at 7 PM.

- Bill Gery - WA2FNK

Johnson County Radio Amateurs Club - March 10, 2017

Meeting Date: Friday March 10, 2017. The meeting Started at 7:30PM.

Attendance: Self introduction with name and call sign. 33 signed the check in sheet. This was followed by the Pledge of Allegiance.

The Minutes from the February 24, 2017 meeting were read and accepted with one opposed vote.

The Treasurer's report, as follows, was read and accepted unanimously.

Cash on Hand	\$ 90.00	Repeater Operating Reserve	\$ 1,000.65
Checking Account	\$ 225.24	Memorial Fund	\$ 310.00
Savings Account	\$ 11,008.83		
Total	\$ 11,324.07	Active Members	153

Old Business:

- We welcomed all 1st time visitors to tonight's Club meeting.
- Repeater Update – All are working well!
- Field Day 2017 – Because the Observation Tower maybe be unavailable it was decided to form a committee to explore other locations. The FD Station Captains plus Jay Greenough, WJ0X will be its members.
- The next WW1USA event will be April 29 – 30 and will be sponsored by our Club.

New Business:

- Rod Rodriguez, K6TBJ has Ararat Shrine Hambash tickets available at a discount.
- Tom Wheeler N0GSG discussed the idea of have Hands-on Projects that would be in conjunction with the Club's Programs. The idea of having an Extra Class was also discussed.

Reports:

- 6 m – None.
- 10 m SSB Roundtable – 5 participated on March 9.
- 440 Wheat Shocker net – 15 Check-ins on March 8 and 15 Check-ins on March 1.
- 2m Wheat Shocker net – 23 Check-ins on March 9 and 21 Check-ins on March 2.
- HF Activity – NR.

Announcements:

- Kansas SB144 is in need of our support. The Public Hearing is March 16th at 1:30 pm in Topeka.
- Johnson County ARES Search and Rescue Drill is Monday March 13 at 7:00 pm.
- Watch Larry's List for upcoming events.

Business meeting adjourned at 8:10 PM

Program:

- The Program for this evening was a presentation on Public Service Events by Herb Fiddick, NZ0F and Brian Short KCoBS.

Submitted by Ted Knapp, N0TEK, Secretary.

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The Minutes from the March 10, 2017 meeting were read and accepted with one opposed vote.

The Treasurer's report, as follows, was read and accepted unanimously.

Cash on Hand	\$ 90.00	Repeater Operating Reserve	\$ 1,027.65
Checking Account	\$ 379.24	Memorial Fund	\$ 310.00
Savings Account	\$ 11,008.83		
PayPal Account	\$ 126.89	Active Members	157
Total	\$ 11,604.96		

Old Business:

- We welcomed all 1st time visitors to tonight's Club meeting.
- Repeater Update – Jay Burgherr, N0FB is moving out of town and with that we will be losing one of our Yaesu Fusion Wires-X nodes. Bob Porter K0GBW has offered to host a Wire-X node. Bob will be providing the hardware for this function.
- The next WW1USA event will be April 29 – 30 and will be sponsored by our Club.

New Business:

- None.

Reports:

- 10 m SSB Roundtable – 5 participated on March 23.
- 440 Wheat Shocker net – 16 Check-ins on March 22 and 17 Check-ins on March 15.
- 2m Wheat Shocker net – 14 Check-ins on March 23 and 18 Check-ins on March 16.
- HF Activity – VK2BV Waverley Amateur Radio Society which is the oldest, continuously licensed, amateur radio club in Australia, Last Man Standing radio Station.

Announcements:

- WTWW is a 100,000 watt, AM, shortwave broadcasting station, based in Lebanon, Tennessee. Evening programming has a lot of ham radio material, including Ham Nation with Bob Heil.
- Olathe/Garmin marathon AND MS Walk on April 22. See Herb Fiddick, NZ0F.
- Watch Larry's List for upcoming events.

Business meeting adjourned at 7:58 PM

Program:

- The Program for this evening was a discussion about possible alternative locations for Field Day 2017.

Submitted by Ted Knapp, N0TEK, Secretary.

A Visitor's Guide to JCRAC Meetings

Here's my take. What would you say to warn a first-time visitor about us?

Welcome. We're glad you're here.

Find a chair. You might want to introduce yourself to one of the officers at the front table. Or to the person next to you. Or not. It's up to you.

We'll be passing around a clipboard upon which we ask each person to write his name, his callsign (if any) and to note whether this is the first time with us. We'll begin promptly at 7:30 with the Pledge of Allegiance. Then we'll go around the room with each person giving his name and callsign (if any).

Our club secretary, Ted, NØTEK, will read the minutes of the last club meeting. President Bill, KA2FNK will ask for a motion to approve the minutes. Don, WØDEW, will object. The club will approve them anyway.

Treasurer Cal, KCØCL will read the treasurer's report. Club repeater trustee Bill, WAØCBW will tell us that the repeaters are (or are not) working well. You'll hear about how many people participated in the WHEATSHOCKER NETs, and people will get an opportunity to brag about interesting contacts they have made since the last meeting.

Right about here, Jaimie, ADØAB will get a PIZZA count. There may be some old business. There may be some new business. Someone will make a motion to adjourn and we'll continue with our "program", during which a knowledgeable person tells us about some facet of the hobby.

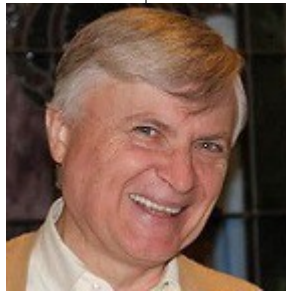
We hope you enjoy the meeting and will join us, both at the ANNEX MEETING tonight and at future club meetings. Like any group, we sometimes speak in short-hand. We know what we mean, but sometimes forget to slow down to explain things to new people. Here are some things you may hear about this evening.

ANNEX MEETING - See PIZZA.

BADGES - Many club members wear little yellow name badges. If you get and wear one, it will help us to learn your name. A local guy (a ham, but not a club member) makes them for a few bucks. See our treasurer, Cal, KCØCL, for more information.

ENSOR - Marshall and his sister Loretta Ensor used the radio on their Olathe farmstead to teach radio to thousands of listners across the country from 1929 through 1940. The US credits Ensor with training a substantial portion of the radio operators in military service during WW2. The farm is an Olathe city park and the farmhouse and radio station are a museum that is on the National Register of Historic Places. Each fall, the club holds an auction of (mostly) ham-related items out at the farm. The club donates half the proceeds to the museum.

FEEDBACK - The club newsletter. If you're a first-timer, we'll want your name and picture for next month's issue. It helps members put names and faces together. Chip, ACØYF, will want your name and



Charlie, NØCVW will take your picture. You can see recent issues on the club website, w0erh.org.

FIELD DAY - At some point in the meeting, Jay, WJØX is likely to stand up and ask the club when Field Day will be. (It's the fourth full weekend in June.) This is an outdoor event designed to show off emergency communication capabilities to the

public. Although not technically a competition, each FIELD DAY site tries to makes as many contacts with other FIELD DAY stations as possible, during a twenty-four hour period. This is an OPERATING OPPORTUNITY.

FOX HUNT - A hunt for a hidden transmitter. We meet at a specified place, tune our radios to the specified frequency and hunt for "the fox" which will be somewhere in Johnson County. A successful fox-hunting team will have a driver, some number of people watching and/or listening to radios, and some number of people who have to remember whether the signal got stronger or weaker as the team went "that a way". Just show up. There will be an experienced team that needs your help. Bring a 2m HT if you have one.

LARRY'S LIST - Club member Larry Staples, WØAIB, runs an email list that will keep you up to date on every ham-related thing going on in the community. Visit it at <http://www.larryslist.info>. You could just go to the website every

see AMATEUR on page 6

from AMATEUR on page 5

day, but you really ought to subscribe. You do not need to be a JCRAC member to subscribe.

HAM 101 - From time to time Herb Fiddick, NZØF, will present "Ham 101" class, in which he gives an introduction to many of the things that hams like to do with the hobby. You need to do this.

HAMBONE - The title character in a series of columns that Jaimie, ADØAB, writes for the FEEDBACK. Hambone is a new ham who sometimes gets confused as to how and why radio works the way it does.

HT - or handi-talkie. A hand-held transceiver.

OPERATING OPPORTUNITY - Short for, "an operating opportunity for new (or inexperienced) hams". You won't actually hear anyone use this term. It is here so that we don't need to repeat the same text in several of these definitions. First, you will be able to see, touch and use someone else's stuff. It will be really good gear that is likely to be WAY better and WAY more expensive than anything you would go out and buy. Second, there will be experienced hams there to show you what/how/why to do whatever needs to be done. Third, if you happen to be operating WW1USA, a special event station, people around the country/world will be trying to call YOU, which is easier than trying to get them to notice and respond to you.

PIZZA - Pretty early on in the meeting, Vice President Jaimie, ADØAB, will ask for a count of how many people want PIZZA. After the regular meeting and program, most club members will

head over to The Pizza Shoppe. Many, but not all of us, will enjoy a pizza/soft drink buffet. If you want pizza, great! If you want a salad, great! If you just want to hang out, great! (Jaimie is going to call ahead to tell them how much pizza to prepare. If you don't want pizza, please do not raise your hand.) This is a great opportunity for you to corner someone to ask pretty much anything. If you have a question, ask anyone. If that person doesn't know, he'll refer you to the person who does. If you don't have a question, any of these will get someone started:

- (1) What HT do you use? Why? Should I get one of those?
- (2) What was your first rig? Was it a good choice? Why? Should I get one of those?
- (3) What kind of antenna should I use (describe where you live)?

The person you ask will answer your question. The person next to him will disagree. An argument will ensue and you will learn (a) something about radio and (b) something about the hams who are arguing about the answer to your question.

If you want a quieter conversation, try (4) how did you get started in radio or (5) what do you enjoy doing with the hobby?

SHIRTS - This could refer to either of two things. The club has light blue polo shirts. Our treasurer, Cal, KCØCL would be pleased to sell you one. Alternatively, this may refer to the "thank you" t-shirt you might receive for assisting as a volunteer radio operator who provides communications services at a public service event. We hang

the t-shirts on a line at FIELD DAY so passers-by see the number and variety of public service events we support.

SIX-OH REPEATER - The club UHF FM repeater that transmits on 442.60 MHz. See w0erh.org.

TWO-NINE REPEATER - The club VHF FM repeater that transmits on 145.29 MHz. See w0erh.org.

WHEATSHOCKER NET - Each week, the club sponsors a pair of "nets" (networks) or group conversations on the air. The Wednesday night net is on the SIX-OH REPEATER at 8:00. The Thursday night net is on the TWO-NINE REPEATER at 8:00. You are welcome, whether or not you choose to become a member of the JCRAC. If it's your first time, you might listen for a few minutes to see how things work. At some point, the control operator will ask for more check ins, at which point, push the button and give your name and call sign. Because you have an unfamiliar call sign and voice, you will be of considerable interest to the group. More details about the nets are on the JCRAC website: w0erh.org.

WW1USA - Special event radio station WW1USA operates out of the National World War I Museum at the Liberty Memorial, near Crown Center. Several weekends each year during the WWI centennial (2014-18) it will operate to commemorate the 100th anniversary of some event. These weekends present an OPERATING OPPORTUNITY. For more information, see Herb, NZØF or <https://www.theworldwar.org/amateurradio>.

A "True" Hambone Story - Jaimie Charlton, ADØAB

Hammy the Drone Slayer

"Come on in, Hal, good to see ya', how about a cup of coffee?" offered Elmer to Hal, his good friend and retired police detective. "I can't believe that you've completely retired from catching bad guys," kidded Elmer, as he poured a couple mugs from his ever-present shack pot.



"Well, maybe I haven't quite hung it up, I still keep an eye on what's happening by working a day or two a week. Mostly, I train new recruits and help them get started in the department. There's a lot to law enforcement that they don't teach at the Academy."

"So, what brings you around here?" asked Elmer, in a slightly more serious tone.

"Drones. Do you know anything about drones? You know, those toy flying things, not the big military ones," laughed Hal.

"I know a little about them, in fact I have one right over here. Do you want to see it fly? It's very cool and fun."

"Hmm," said Hal. "With a casual attitude like that, maybe you're the problem. Where were you two nights ago at about 7:00 PM? Just kidding," added Hal, before Elmer could respond. "But I do have a problem."

"The business of catching bad guys must be pretty slow if you're worried about some toy flying around," teased Elmer.

"Oh, there's plenty of bad guys out there, and in the grand scheme of things, the drone problem isn't very

serious, but it is annoying and does actually interfere with officers doing their duty."

"Okay, what's the problem?"

"It seems that drones, or at least one drone, we're not sure how many, appears when officers are doing regular day-to-day duties like traffic control."

"You mean that the drones show up at speed traps?"

"Yes, but also at school crossings and even when officers are on their lunch breaks."

"What do they do?"

"Not much, they just buzz around like big mosquitoes diving on the patrolmen and distracting them. Except at speed traps. There they fly in front of the radar guns and screw up the readings."

"I thought you guys used LIDAR now. It would be pretty hard to screw up that, it operates so fast."

"We do," continued Hal, "But we also use the older radar guns and those guns give erroneous readings when a drone flies in their beam. The drones seem to fly in front of the guns for a while and then disappear only to return a few minutes later. Eventually, the officers become frustrated and move on."

"Why not just grab the drone?" asked Elmer.

"It's not that easy. It stays just out of reach and then flies away after a few minutes. We've tried shooting

at it with a fire extinguisher, but that didn't work. One officer wanted to shoot it with a shotgun, but shooting a shotgun at a drone in the city would not go over big with the public. We figure if we could catch the drone, we could trace it to its owner and lock him up forever in drone jail."

"Whoa! You have a drone jail? Cool!"

"What can I do to help?" asked Elmer. "Just for the record, my drone hasn't been out for several weeks."

"Actually, I was hoping to talk to Hambone. Our school patrol officer mentioned that the nerdy kids were talking about a guy with some sort of 'death ray' that destroys CD players and the like. They didn't mention any names, but the description sort of fits Hambone."

"I don't think Hammy has any death ray. He has been experimenting with lasers and has one that can burn holes in plastic a few feet away, but that's about it. It's a long way from anything deadly," said Elmer, jumping to Hambone's defense.

"Oh, no, you got it wrong, I'm looking for Hambone's help," said Hal. "I thought maybe his device could be used to shoot down at least one annoying drone."

"Speak of the devil," said Elmer. "Here comes Hambone now."

"Hi Unck, hi Officer Hal, are you here to drag my uncle off to the slammer?"

see HAMBONE on page 8

from HAMBONE on page 7

“No, Hambone, it’s you I’m here to see.”

“I’m outta here,” said Hambone heading for the door.

“No, wait! I need your help!” Hal hollered at the south end of a north-bound Hambone exiting the shack.

“Oh, that’s different, what can I do for you?”

“Rumor has it that you have some sort of ‘death ray’ that can burn up CD players and other electronic devices at a distance. Is it some sort of laser?”

“My laser is only two watts, that’s a long way from a death ray. I did make a sort of microwave gun, but that’s not a death ray, either.”

“Does it burn up CD players?”

“Maybe. Why?”

Elmer and Officer Hal went on to explain the problem the patrolmen were having with drones and asked if Hambone’s device could help them shoot one down. Now that he was certain that they were not accusing him of anything, Hambone warmed up to the idea of downing drones.

“My microwave gun is a combination of an old microwave oven and a wi-fi antenna,” explained Hambone enjoying the attention he was getting.

“You know that microwave ovens operate at around 2.4 GHz which is the same general frequency of some wi-fi transmitters. So, I thought that a high gain wi-fi antenna could be used to concentrate the power of a microwave oven.

I made an antenna for that frequency from a tin can. I got the idea from a website that deals with

increasing the range of wi-fi transmitters.”

“How can a wi-fi transmitter and a tin can antenna destroy anything?” asked Hal.

“That’s where the microwave oven comes in. I took the magnetron tube out of the oven and mounted it on the tin can antenna using tie-wraps and a big rubber band.”

“I still don’t get it,” said Hal.

“Let me show you,” said Hambone, grabbing Elmer’s pen and yellow pad.

“The magnetron is that small finned thing with a short stub projecting into the space where you put the food in the microwave oven. The stub is actually the output terminal of the magnetron. The magnetron is an oscillator and power amplifier all in one chunk of metal.”

“How do you set the frequency?” asked Hal.

“You don’t. It only works on its design frequency, so there’s no tuning to a particular band or any other adjustments. The main parts are the magnetron and its power supply. All the rest of the oven’s electronics is devoted to features like timers and protection switches that keep you from operating it with the door open.”

Hambone sketched the tin can antenna with the magnetron mounted on a long piece of wood that served as a handle. The power supply transformer, diode and capacitor were mounted on a separate plywood board. Three long, very well-insulated wires connected the power supply to the antenna assembly. The remainder of the oven with all the safety interlocks and timers was discarded.

“Notice that there are three wires connecting the magnetron to its power source. The two heavy wires are for the filament that draws several amps. These are also the negative side of the high voltage supply. The other single wire is the positive high voltage terminal and it connects to the case of the magnetron. That means the outside of tube is connected to the high voltage supply. All together, it makes a power supply that delivers over an amp at nearly 2000 volts positive ground. Everything is electrically hot. That’s why the wooden insulating handle.”

“Why is the handle so long?” asked Hal.

“This thing puts out over 1000 watts of RF – that’s more than most ham radio stations – so, I didn’t want to get too close.

To use it, all you do is point the antenna at your target and turn on the power supply. Poof, the target catches fire if it’s within about four or five feet. You can’t let it run very long, both the power supply and the magnetron get pretty hot pretty fast.”

“That sounds just like what I need,” said Hal.

“We could put the power supply in the car on the rear deck and run the wires through a window. The ‘business end’ would be outside. I could pretend to use a radar gun and you could operate the magnetron. When the drone arrives, we could zap it and trace it to its owner.”

“This gun takes over 2200 watts at 120 volts, can your car supply that?” asked Hambone.

see HAMBONE on page 9

from HAMBONE on page 8

“No problem. The cruisers have souped-up electrical systems with inverters for running large spot lights if necessary. We can handle up to about 5 KW.”

Later that evening

“This is a pretty good spot. People getting off the I-435 hit the Antioch exit ramp pretty fast and just keep on going as they turn onto Antioch Road. With the street lights and buildings, they don’t notice the cruiser until it’s too late. We’ve been bothered by the drones here, too.”

“I don’t think it’s a good idea to use your radar guns near this thing. There’s gotta be a lot of RF flying around,” said Elmer as he set himself up to operate the power supply from the back seat of the cruiser.

“Oh, I know,” said Hal, this is my wife’s hair dryer. I’m not trying to catch speeders, I’m just using it as bait to catch drones.”

“Maybe it’s just me, but the fact it’s pink and has *John Frieda* in big letters on the side may be a give-away,” added Hambone.

Hal stood outside the car pretending to check speeds while Elmer and Hambone readied the “death ray”.

After an hour went by without any drones, Elmer and Hambone were ready to call it quits. But Hal said it sometimes took all evening for the drone to show up. Several cups of coffee later followed by several trips to the nearby Quick Trip, the angry-swarm-of-bees sound of a drone appeared.

“Here it comes!” shouted Hal as what looked like a black wraith swooped overhead, lingered and disappeared before Hammy and Elmer could aim the death ray.

“I told you a pink hair dryer wouldn’t fool him,” said Hambone.

“Don’t worry, it’ll be back.” And back it came. This time bobbing and weaving just out of reach in front of the radar gun.

Hambone, holding the magnetron with the tin can antenna on the end of a long stick, took aim and hollered to Elmer to turn on the power. Expecting a loud buzz and a dead drone, he was surprised when he still had live drone and a dead magnetron. “What the heck!” He said to nobody in particular.

“The inverter wasn’t on,” came Elmer’s muffled voice from the back seat. “Now it is!”

“Yeah, but the drone’s gone,” retorted Hammy.

“Don’t worry, guys. It’ll be back,” added Hal, still playing speed trap cop with a shocking pink hairdryer.

“I’m ready,” said Hammy, pretend aiming the death ray. Send in the drone!”

“Here it comes!” alerted Hal.

“Power’s on,” said Elmer.

Outside, Hammy kept swinging and aiming the heavy magnetron around zapping everything but the drone.

“Ow, watch where you point that thing!” shouted Hal as he jumped out of the way dropping his shocking pink hair dryer that was now too hot to hold.

“Watch where you’re shooting, Hammy,” came a muffled shout from the backseat as smoke rose from the cruiser’s spotlight and its radio went silent.

“I’m doin’ the best I can,” said Hambone never hitting the drone. “But that thing is after me and I think it’s got its shields up!”

Panicking, Hammy dropped his death ray and hit the ground as the drone buzzed just over his head. The death ray, still operating, fell next to the left front tire.

“Damn!” shouted Elmer leaping from the cruiser followed by a cloud of black smoke.

“The car’s on fire! The wires pulled the power supply down and it’s burning the back seat.”

“The wheel’s burning, too!” shouted Hal trying to get the fire extinguisher from the trunk.

Mercifully, the drone flew away.

“I think that’s it for tonight,” said Hal in his typical deadpan cop voice.

“The car won’t start, the radio’s dead, the back seat is toast, the front tire is smoked, our HTs are fried and the drone or drones are safely back home.

Our work here is done. Let’s go over to the Quick Trip, have a cup of coffee and call for a tow.”

Answer to the Puzzle

**Answer:
The 60 watt bulb, L2,
burns much brighter.**