



Q. *Some public safety services now use Internet dispatching. How does that work? (J.O.)*

A. To overcome the radio incompatibility between adjacent but inter-dependent communities, as well as the delays in making phone calls, Voice Over Internet Protocol (VoIP) is being adopted. A good example of this is the Piedmont regional partnership involving the Caswell County Sheriff and the Highway patrol in North Carolina, and the Pittsylvania County Sheriff's Office and the State Police in Virginia.

To intercommunicate, the audio from the radio communications is fed into a computerized system which digitizes the audio and sends it via the Internet to participating agencies to be decoded back into normal analog sound and into the other agencies' radio systems.

Highway pursuits from one jurisdiction to another can be intercommunicated in normal two-way fashion.

Q. *I'm reluctant to replace my standard light bulbs with newer compact fluorescent lights. Is there really a savings? After all, the newer bulbs cost considerably more.*

A. Traditional tungsten-filament bulbs waste 90% of their electricity as heat; only 10% of the energy consumed is emitted usefully as light. The new CFLs use 75% less electricity to provide the same amount of light as traditional incandescent bulbs, and last ten times longer. The even newer LED bulbs use 85% less electricity for the same illumination, and last forty times longer.

Like all new technologies, the new bulbs are initially more expensive, but prices continue to drop. I suspect that even CFL bulbs will eventually give way to LED for the long term. LEDs respond instantly with full brilliance, produce no radio interference as some CFLs do, are much more durable, and contain no toxic substances like the solder in incandescents and the mercury in CFLs.

Q. *How do U.S. AM radio stations continue to operate when Canada and Mexico are abandoning the medium wave band?*

A. With economic unrest and political upheaval, talk radio is a current rage on AM in the U.S. As long as there is an audience, there will be sponsors, and as long as there are sponsors, there will be a profit.

Q. *Back in the 1970s and '80s I use to listen to dozens of radio stations in the tropical band between 4700 and 5100 kHz, mostly Latin and South American stations. Now, I'm lucky if I can hear one or two. Have most of these stations simply gone off the air? (Robert Yajko, West Leechburg, PA)*

A. Some have, indeed, gone off the air, replacing their old HF equipment with more modern, static-free, FM for their regional audience. It's just a sign of the times as less-technically-endowed countries follow trends in the modern world.

Q. *I own three different handheld scanners. Recently I have been receiving a lot of squelch or static around 700 MHz and occasionally on other bands as well. What could be causing this? (Dudley, email)*

A. If you are hearing the same thing on all three scanners, and you are hearing it on the hand-held scanners even away from your house, and the squelch noise pops on for a few seconds then off like it's a signal, and it's on a narrow part of the spectrum like a single channel, you are probably hearing the digital transmissions from a 700 MHz band trunking system.

Such digital systems are also used on other land-mobile frequencies as well, thus accounting for hearing the same sound on other bands.

Q. *I have been reading the various articles in MT, discussing coax vs. window line, feeding a single antenna used over several bands. Because of that, I just replaced my coax with 450 ohm window line feeding a 40m dipole. I am using a Versa Tuner II. Everything seems good so far. Do you think this is a big improvement over coax? The idea is that window line will get more power to the antenna in high SWR instances. I run 80 through 15m with this*

dipole. (Mark Morgan, N8QIK, Cincinnati, OH)

A. Losses in transmission line from high SWR depend upon the frequency, amount of mismatch, length of the line, and insulation characteristics. Open-wire "ladder line" is one of the least lossy cables, if not the least. But since it has no shielding, you have to be careful not to run it along metal surfaces. And it will pick up nearby electrical interference.

If you are getting a good conjugal impedance match with your VersaTuner II and aren't hearing radiated interference from electrical and electronic home appliances or your computer, it's an excellent choice.

Be sure to check the line periodically for age cracks which can hold dirt, salts, and moisture; if it shows these, replace it.

Q. *Will there be a new digital standard for non-public safety and government radio, like railroads and business?*

Why did AES replace the old DES encryption standard for government trunked systems? Is DES still used on some local/state trunked systems? (J.J. Owens, Fayetteville, NC)

A. I'm unaware of any plans to alter the current standards for other users of the spectrum. APCO P-25 is by far the major standard and it's working well. For encryption, the newer AES standard has proved to be a better performer than the old DES, and has virtually unbreakable code. Chances are that current users of DES at the local and state level will continue if they are not required to change for compatibility purposes.

Q. *Do all cell phone systems use the same 800 MHz frequencies?*

A. Not by a long shot. If we consider North American along with European/Asian allocations, currently used bands include 806-960, 1710-1785, 1805-1990, and 2110-2170 MHz in various fractional combinations among licensees and countries.

Questions or tips sent to Ask Bob, c/o MT are printed in this column as space permits. Mail your questions along with a self-addressed stamped envelope in care of MT, or e-mail to bobgrove@monitoringtimes.com. (Please include your name and address.)