

The "Expert Leak Hunter"

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Over the past few years, I have been asked to help several water systems in this state, find leaks in their distribution systems. For the most part, I can say I have been pretty successful in doing this. Do I feel this makes me an expert in leak detection? The answer I will give to that question is in the form of another question.

What is your definition of what makes a person an expert in this field? Is it the equipment used by the person? Is it the willingness of the person to have the patience / verification skills, to conduct a thorough search, until the leak is found? Is it his or her knowledge in evaluating several different distribution system designs and hydraulic features? Or is the answer simply a person who has spent several years developing a good ear for hearing what different leaks sound like? In my opinion, the more a person has of everything mentioned above, the closer he or she will be to being the "LEAK EXPERT". Having only a couple of these things may give a person a false sense of believing they are experts. Let's take a closer look.

Equipment:

Usually when we think of leak detection we start with some sort of listening device. Here are some of the devices I see in the systems I visit across the state:

1. A long screwdriver (Place ear on handle, not tip). Don't laugh; I have seen people who have been successful finding leaks this way.
2. Sonoscopes / Water phones (You know, the black things with the point that look like old telephone receivers).
3. Stethoscopes
4. Geophones (The two heavy brass plates with the tubing leading to the headphones)
5. A very large variety of Electronic Acoustical listening devices. (The differences being in their ability to filter out normal background noises in the system. This also means a significant difference in the cost of these type of devices).
6. An assortment of leak noise correlation equipment. (A leak noise correlator is a computerized listening device that uses highly sensitive microphone sensors and a computer to calculate where a leak is by comparing the leak sounds from two sensors. Currently, leak noise correlators are the best technology for finding leaks.)

Patience / Verification:

I guess I need to explain what I mean by this. In many of the systems I have gone to in these past few years, I have found out that the information given to me about their distribution system wasn't always accurate. Either the maps they were using had been handed down from operator to operator and never updated as changes were made, or were never right in the first place. Your chances of finding leaks, no matter what kind of equipment you have, will be pretty slim in these cases. This now means you have to have the line locating equipment and be willing to take the time necessary, to verify that the pipes you are going to look for leaks on, are where you are being told they are in the first place.

Knowledge of different distribution systems:

Anyone conducting a leak survey will have to be able to figure out where the distribution system is getting its water from and how many possible directions the flow can be coming from, in order to be able to isolate different sections of the distribution system throughout the leak hunting process.

Experience (Years looking for leaks):

The reason I equate experience with years looking for leaks in this case, is that a person could have spent 30 years in the water business and only did leak detection a couple of times a year. In order to be really good at locating leaks, you truly do have to spend a lot of time doing just that. Every leak sound has certain things that make it identifiable to an experienced person, but I have never heard any sound exactly the same as any other.

Over the past few months, I was asked by our CEO, Pat Scalera, to evaluate two types of computerized correlation tools. One was the ZCORR Datalogger, from Flow Metrix Inc. and the other was a real time Correlator from Metrotech. After several different locations where both pieces of equipment were used, I found that both have their own benefits and weaknesses. The only reason I even brought this up however, is the fact that no matter which of these devices we used, if we hadn't incorporated all the other items I have discussed in this article, we would not have been successful in finding any leaks anywhere.

In closing, I have to say that if you want to be an "EXPERT" in the leak hunting field you will have to employ as many of the items discussed in this article as you can, and only time and due diligence, will ever get you close to the ultimate goal of being an "EXPERT LEAK HUNTER". ♠