

# **NOT ESPECIALLY TECHNICAL**

## **Echoes From The Land Of Canin'--A Review of The UltraCane**

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The traditional white cane, for all of its advantages of portability and simplicity, imposes the necessity of close up and personal contact. Occasionally a cane-tap or footstep might produce a fortunate echo revealing a nearby building, but generally the cane requires a direct touch of the tip to produce its rich yield of data about the world of stationary objects at ground level.

What if someone were to equip a conventional cane with a system that would translate ultrasound echoes into vibrations to warn of nearby objects at shoulder or head level, and more distant objects at ground level--say, a range of six to twelve feet? Actually someone did develop something called a Laser Cane back in the 1980s or 90s; but it was too expensive and required too much training for most of us to take seriously.

More recently, with new developments in miniature technology and many lessons learned about practical applications for ultrasound, a British company has decided to release a new combo product called the UltraCane. With its lower price (somewhere around \$1,000) and an absence of special training requirements, the UltraCane may merit a closer look, at least for some.

I have often wondered whether an ultrasound device built into a white cane would provide me with information which would make me safer, or whether it would merely yield distractions and nonessential reflections which I could easily live without. So when Sound Foresight Technology, the worldwide distributor of the UltraCane, offered me the opportunity to use the device for a month for reviewing purposes, I willingly made time to take advantage of the offer.

When the box arrived, I found the UltraCane to be a rather conventional-looking folding cane with all of the space-age technology tucked into the thick and somewhat heavy handle. Where conventional canes provide most of their information through the tip, the UltraCane provides most of its data through the other end. There are two vibrating displays on the top of the handle, which must be gripped so that the thumb rests lightly upon the vibrators when the cane is in use. The vibrations begin at a faint intensity when an object is just within range and become more intense as the object gets closer. The forward display carries data about objects in front of the user--a parking meter, perhaps, or a parked car. Mounted behind it, is the upper range display that vibrates when there are close-in obstacles at shoulder or head level--a tree limb or a telephone pole. The power switch and battery compartment for the required two AA batteries are also located in the handle.

It took less than a half hour for me to open the box, unpack the unit, insert the batteries, locate the power switch and take the UltraCane outside for its first voyage. The distributor had thoughtfully sent the manual in advance; otherwise, I would have spent another few minutes reading the brief instructions which occupy less than 20 pages in braille.

As the training booklet advised, I stayed in familiar areas while learning the cane's characteristics. I continued to do so while getting used to the weight of the cane (more than twice as heavy as my standard model) and the shape of the handle. I will have more to say about that later. Once I mastered a grip that would consistently place a thumb over the vibrators in the handle, I was ready to find out what the ultrasound had to tell me about elements more than a cane's length away in my travel universe.

Moving in to some less familiar blocks along a nearby street, I started noticing frequent vibration activity from what I call the "tall" sensor, which detected objects at about head height. (This detector has a non-adjustable horizontal range of about five feet.) Stopping, and reaching up with the free hand, I encountered leafy limbs, and even the occasional apple or pear. Interesting! There had been low-hanging trees along this street that I had not known about. On a rainy day (something we know a little about out here in Oregon), the limbs and leaves might easily sag below head level, so it was good to find out about them during what is known out here as a "sun break". A little further along, I put a hand up in response to the

"tall" sensor vibration, and found I couldn't reach any limbs--even standing on tiptoe. But now, at least, I knew they were there.

In the next block, I was surprised to feel the forward vibrator buzzing away on what I thought was a wide open sidewalk. (This detector can be set to a two-meter range, though I had it set at the longer range of four meters.) Stopping and exploring a step at a time, I discovered that the sidewalk soon narrowed, and there were poles and parking meters ahead, just as the suddenly skinny sidewalk met the downtown street. Here was useful, if not urgent, information. The conventional cane would have told me soon enough about the encroaching obstacles, but the UltraCane gave enough warning so that the contact could be avoided altogether.

A little further along, I crossed both ways at a lighted intersection. As I approached the second crosswalk, an insistent buzz for a tall obstacle stopped me just before the cane contacted a silent, solitary fellow pedestrian waiting to cross. Usually, fellow travelers make themselves known, or their small talk gives them away, but solo travelers sometimes go undetected until the cane makes contact. It's not the end of the world, but worth avoiding when possible.

I came back to the office and sat down to think. Based on the kind of information this cane gives, what mobility problems that I have to deal with regularly might it help to solve? I quickly thought of two: One bus stop I frequently use has the "bus stop" sign pole set back several feet from the sidewalk. There is no easy way to find this pole without lifting the cane a few inches off the ground and making an exploratory swing like the on-deck batter in a baseball game. While there are no people over in the long grass near the sign, I don't feel comfortable raising or swinging the cane, and I tend to simply guess where this pole is, hoping I will be close enough for the bus driver to stop for me. (This approach has worked so far, but it's not ideal.)

My other mobility challenge for the UltraCane also concerned a bus stop--one where people often arrive before me. They don't always speak; no law says they must. Sometimes they stand just in front of the stop sign. When using the cane to locate the bus stop, I sometimes locate a pair of surprised feet instead.

As it turned out, the UltraCane dealt effectively with both of these small challenges. The set-back pole was spotted at once by the "tall" sensor, permitting me to

stand right in front of the sign without guessing. The other sensor spotted my predecessors at the bus stop so that I could pull up short of them, leaving them either to wonder how I knew they were there or to continue standing there in a mindless trance, as the case may be.

Over time, I would have thought of several other worthwhile tests including some indoor situations which I didn't look into because time was short. It is fair to say that the high-tech cane furnishes some useful information, as well as some interesting but unnecessary side lights about the outdoor surroundings.

To balance the equation, let me tell you how it scores on the convenience factor. It's by far the heaviest cane I've ever used. This wouldn't be a deterrent for a reasonably fit, motivated user, but it would probably take some getting used to. Most of the extra weight is in the high tech handle, which suggests the shape of a large bicycle handle bar. Again, it's not unworkable, but it's different enough from the conventional cane handle to require some adaptation and some adjustment time. The biggest adjustment for me was finding a way to grip that statuesque handle securely while keeping my thumb on top where the vibrating displays are.

On the positive side, the manual and instructional exercises are elegantly simple, the controls are minimal and straightforward, the batteries are inexpensive and easy to obtain and switch. The use of vibrating displays avoids distracting the user with audio which could make it harder to stay tuned in to environmental sounds.

Like other folding canes, the UltraCane can be ordered at varying lengths depending on the user's preference. It is compatible with the newer hook tips, so that it can be fitted with many different tip styles. To its credit, the device can always serve as a conventional cane even if the batteries fail.

There is one other situation when the electronics are unusable, and that is a heavy rain storm. The user guide advises covering up the handle in a heavy rain, using a custom cover that leaves the rest of the cane available for use. Also supplied with the UltraCane is an elegant carrying bag into which it neatly folds. The bag features a handy pocket for a spare set of AA batteries.

The product's website, [ultracane.com](http://ultracane.com), lists two US dealers: LS&S Products of Buffalo New York, and Irie-AT of Corvallis, Oregon. The phone number for LS&S Products is 800-468-4789. The phone number for Irie-AT is 888-308-0059.

With a recommended price in the \$1,000 neighborhood, the UltraCane isn't going to take the O&M field by storm any time soon. There are certainly less expensive ultrasound products available, although they require separate attention from the cane and occupy the user's free hand. The UltraCane will attract some users who have the funding and want to move about with less direct contact than the conventional cane requires. This technology has come along way since the days of the Laser Cane, with its required months of special training. Given the need to have the UltraCane sensors covered up during a rain storm, perhaps Sound Foresight Technology Limited could develop a special model for its Oregon dealer, featuring a built-in umbrella.