Low Technology Method to Locate Landmines, IEDs and Tripwires

Background, Research and Applications

By

John S. Janks

September 17, 2011
INTRODUCTION

“Science is the belief in the ignorance of experts.”
--Richard Feynman

This paper traces the evolution of two “L”-shaped metal rods, formerly called “dowsing rods,” into what they actually are: Dipole Antennas. This was accomplished through lengthy and careful empirical experimentation. “Dipole Antennas” are no more than two disconnected “L”-shaped metal rods. The old “rabbit ears” that sat atop many televisions decades ago, were dipoles. The discovery that dowsing rods are dipole antennas is fairly new, but has tremendous potential new applications. What is important is that these simple, hand-held metal rods can locate landmines, improvised explosive devices (IEDs), tripwires, tunnels, caches, buried archeological sites, and engineering structures.

First, a few definitions. Normal science is a “Bundle of Good Ideas,” that allow scientists to explain some things that have always been mysterious.¹ Thomas Kuhn in his classic 1962 book The Structure of Scientific Revolutions² referred to Traditional Science as “Normal Science” and the “Bundle of Good Ideas” as paradigms. “Traditional” and “Normal” science as well as “Revolutionary” and “Frontier” science are used interchangeably in this report. Normal science seeks to extend the knowledge of the paradigm. Once established, a paradigm is considered nearly inviolate. Historian Michael Polanyi found that instead of being open-minded, scientists often have their minds and eyes closed. Rather than always seeking evidence to test their ideas, they often ignore such evidence even when it hits them in the face.³

But as scientists work, their efforts to extend the reaches of a paradigm, some of their experiments turn up inconsistencies. When the inconsistencies grow to where they can no longer be ignored the paradigm transforms into tradition-shattering rather than tradition-bound “Revolutionary Science.” In addition, those presenting Frontier Science to other scientists or the public that follows them are rarely popular.

Until recently, dowsing has been boxed in the realm of superstition. Any attempts to break it out were quickly and loudly shut down. But the Internet has changed that. Experiments can be videotaped, described, and published for everyone to see. Science demonstrations could be repeated by anyone that cares to. Due in part to the Internet, scientific experiments that demonstrate the properties of dowsing rods are actually those of dipole antennas, thus taking it out of the realm of magic or unconscious movement into the realm of traditional physics.
The Dynamics of a Traditional Science-Frontier Science Clash: Child Bed Fever, 1847

History teaches us that when traditional science is confronted by frontier science, sparks fly. Frontier science, if proven correct, will inevitably merge with traditional science, but this has rarely been a peaceful process. Galileo was threatened with imprisonment, surgeon Vesalius likewise for contradicting the 1500-year old word of Galen. Alfred Wegener, the father of Plate Tectonics, lost his job, and had to take a lesser position.

A more dramatic example is shown in Figure 1. Ignac Semmelweiss, the doctor to whom most of us owe our very existence, was ignored, fired, and then sent to an insane asylum where he was beaten to death the first day by the guards. And just what was the horrible procedure he forced upon doctors and medical students as they passed from the autopsy room where they dissected women who had died of puerperal fever across the hall to birthing mothers? He required hand washing. The drop in death rates, shown in red, is breathtaking. In addition, the reaction that followed is a classic example of how Traditional Science responds to Frontier Science.

Dowsing Rods and Dipoles: Traditional Science Meets Frontier Science

The evolutionary process transforming dowsing rods into dipoles is not a peaceful one. In the 20th Century traditional science denounced dowsing as nothing more than the human mind unconsciously making the rods move. William Carpenter first described this unconscious movement in 1852, and named it the “Ideomotor Effect.” By the end of the 20th Century and into the 21st, traditional science has become more and more aggressive in its denunciation of dowsing rods as a legitimate arm of science. Dr. Michael Shermer, editor of Skeptic magazine, flatly rejects dowsing and considers those who hold that it is a legitimate arm of science do not understand the scientific method. He even lumps them together with Holocaust deniers and creationists. Author Dr. Richard Dawkins said those who study dowsing are the “enemies of reason,” and “their state of denial is extraordinary.” Dowsing rods are not alone; they denounce, remote viewing, parapsychology investigations (psi) and telepathy. Some skeptics get creative when denying dowsing experiments. For example, Adam Savage of the popular program Mythbusters said that he will not do an experiment on dowsing since, like pyramid power, it had been tested numerous times and found to be false.
Frontier science does not get a “pass” simply because it is Frontier. It is bound by the same set of rules and procedures as Traditional Science, and if a Frontier experiment proves itself neither repeatable by others nor capable of prediction, either it must be ignored or its tenets modified. In the past, many dowsing rod supporters had little scientific training and it was easy to discredit them.

When investigators find anomalies in a paradigm tensions build. Specifically, as multiple investigations into dowsing rod behavior began to challenge the accepted Ideomotor Effect, traditionalists became more vocal.

Over the last ten years or so publications have appeared that have followed the scientific method and have presented a scientific understanding of dowsing. Especially difficult to dismiss are legitimate investigations by scientists and engineers. In the UK, a utility company with a major water main break called in engineer Steve Robinson to find it, and he did – by ditching his high-tech equipment and employing dowsing rods.™ Network manager Michelle O’Neil, possibly worried about negative publicity, was quick to point out,

“We use high-tech detection equipment these days to look after the water network. However, we can’t deny that Steve has achieved some uncannily accurate results using his own methods. Perhaps there is something in it after all.”

More and more scientists and engineers are studying “dowsing rods.” In the July 2011 murder trial of Casey Anthony, Dr. Arpad Vass, a professor of forensics, stated that he had been studying the use of dowsing rods to locate buried corpses,§ evoking intense criticism from Traditional Science.¶ My own research ran the gamut from rod pattern recognition, to the forces involved, and lastly, to empirical evidence that dowsing rods are simply hand held dipole antennas.¶

**Specific Behavior of Hand-Held Dipole Antennas:**

Rod behavior not previously published is included in the list below:

- Rod farthest from the buried object moved the most. Experience with other forces predicts the opposite,
- Buried objects can be composed of any material, as can the rods, eliminating magnetism as a likely force,
- Rod movement patterns are defined by the shape and depth of the object,
- Longer and thicker metallic rods respond sooner to the buried object than do shorter ones,
- Water, a most common target of dowsing efforts, has no effect on rod movement,
- Dowsing rods will not move if connected by a conductive wire,
- Rods respond to electromagnetic fields.
The only way the list above can be true is if the rods are dipoles. Any electrical potential (current flow) from one to the other passes through a parasitic capacitor. That the human body is part of the circuit solves the riddle that when the rods are attached to cardboard boxes, for example, no movement occurs.

It is not necessary to be an electrical engineer to see the comparison between dipole antennas and dowsing rods (Figure 2). There is a great set of short articles on dipole antennas published by Henry Ott, entitled, “Dipoles for Dummies (as well as the rest of us without a PhD in electromagnetics).”

Electric Currents in the Earth

Thus for the dipole antennas to work in the field they must meet the following four conditions:

1. Two hand held (usually) metal rods,
2. A person who in addition to simply holding them is also part of the electrical circuit,
3. A target such as a buried object or above-ground wire,
4. There must also be a force capable of driving the system. Natural electric (telluric) currents and electromagnetic fields are the most likely candidates. Most of us are unaware of the sheer number of natural electric currents and electromagnetic fields surrounding us at all times. Science has debated their properties for over a century. Some fields simply penetrate the earth, others only to a shallow depth, others change polarity, and still others follow the terrain. And they are all active at the same time. Man-made electromagnetism is also added to the mix.

For those working with dipole antennas in the electronics industry such matters as voltage, wavelength and stability are not variables. But for hand-held dipoles exactly what electromagnetic energy or combination of forces has the most influence is complex, and at this stage such information is a subject of research. A good summary of electromagnetic energy as it applies to radio waves can be found in The Electrical Engineering Training Series, while those trying to fathom the depths of electromagnetic surface waves can review Janice Hendry’s Surface Waves: What Are They? Why Are They Interesting?

*A natural and usually unwanted effect between two conductors positioned close to each other. Capacitance itself is the buildup of electric charge on one side of a circuit system before passing to the other.
Applications of Dipole Antennas

Booker’s Law tells us that, “An ounce of application is worth a ton of abstraction.” The use of hand-held dipole antennas as a low-tech tool to find IEDs and tripwires is particularly important because they are cost-effective and useful. Furthermore, every foot soldier on the ground or civilian in war-torn countries can acquire a set. With budget crises looming a cost-effective tool, available immediately would be a welcome relief from the money and time consuming high tech programs that have so far delivered little of what they promised. Our data, experiments and results are documented on the Internet, and the experimental procedure is available to anyone. Thus, buried cans, plastic containers, ceramics, metallic or synthetic cords all create distinct patterns. Furthermore, above ground wires, metal or synthetic, even smaller than 1 mm cause them to react. One reason the dipole is so important is that it only requires a potential (or difference) in electrical energy. Composition of the buried object therefore is less of a factor than in traditional countermine efforts, dipoles do not need to be grounded.

For soldiers, their families, and civilians in war-torn lands they could provide a simple and effective means to avoid landmines, Improvised Explosive Devices, and tripwires. IEDs are low tech and they are here to stay. While many humanitarian groups press for the banning of all landmines it remains a fact that landmines are being laid 25 times faster than they are being cleared. If all landmine use stopped today it would take 1,100 years to clear them all using current techniques. And there is no single method that stands out as superior in landmine-clearing technology.

Figure 2. Current flow in a dipole antenna. The arms of the dipole are connected by a parasitic capacitor (L). Note the remarkable similarity to the “L”-shaped rods held by the user (R). Left diagram courtesy of Henry Ott Consultants.
The main goal of using hand held dipole antennas to avoid and detect mines, IEDs and tripwires is to provide every soldier on the ground with a tool to save his/her life or limbs. At present that is not the case. There are some effective high tech countermeasures but they are too few or too limited to be used by everyone.

The central issue in the U. S. military is the reliance on high technology to counter the low technology weapons of the insurgency. A grave injustice occurs when myopia dominates technology – such is the case of dipoles in landmine, IED, and tripwire detection.

With little money or development time, insurgencies send a few of their members to universities to learn electronics, communication and computers. They rapidly develop a low technology countermeasure that can be made locally and used by almost any member. By contrast the U. S. spends enormous amounts of money over years of development time with only a few successful field tests. An even smaller number end up in weapons production, and trained specialists are required to use them. As one marine officer put it, “The Flintstones are adapting faster than the Jetsons.”

The absurdity of this myopia syndrome becomes treacherous when there is a failure to explore new, simple, cost-effective opportunity for simple experiments that work to save lives. This is perhaps one of the most disturbing conflicts between Frontier and Traditional Science. For example, the recent injury of Giles Duley, embedded photographer on patrol with an American unit in Afghanistan, by stepping on a simple pressure mine could well have been prevented for under $100. His injuries resulted in a triple amputation.

The $380 billion Future Combat System has been surpassed by the insurgency using the already-existing global media grid, satellite, radio, CNN, Global Positioning System and the Internet, where in addition to information, videos are exchanged. The insurgency is implementing existing technology to counter a high-tech system still under development and not yet on the battlefield. The same is true for the much-publicized $800,000 robot warriors that can be dispatched with a $2 egg timer and an old artillery shell taken from any of the hundreds of ammunition dumps all over Iraq.

Hand-held dipole antennas approach the problem of IEDs and tripwires differently than currently accepted methods: the method uses a low-technology countermeasure to defeat a low-technology weapon. The hand-held dipole antennas need to be added to the list of effective techniques and given proper and thorough testing – and soon.

CONCLUSIONS
Immediate Advantages for Using Dipole Antennas:

1. *Lightweight cost effective* method to locate *buried objects* and above ground *tripwires*.
2. Buried objects made of any material *electrically different from the soil* can be detected. *Plastic mines are located as easily as metallic ones*.
3. Natural earth currents provide a *constant and reliable power source*.
4. *Wet ground, metal clutter, and vegetation do not affect dipoles*, unlike traditional countermeine equipment.
5. *Every soldier* can carry a set.
6. Features like *tunnels or caches* can also be detected.
7. Although some *training is required*, it is small and the programs can be *implemented immediately*.

For many, a research-based Frontier Science discovery is a serious threat, as it affects their livelihood, prestige, and realization that while they are indeed experts, they are no longer the only experts. This paper is one in a series of articles that demonstrate the much maligned “dowsing rod,” is actually a hand-held dipole antennas and obeys the physical laws that apply to them.

Importantly, we urge immediate testing by the armed forces to determine factors like accuracy, range, and field application.
REFERENCES

ABOUT THE AUTHOR

John Janks holds a BA in geology from Monmouth College, IL and an MS from the University of Illinois at Chicago, also in geology. He worked in the chemical, oil and gas industry for 25 years, most of it with Texaco and Chevron. Much of his career was devoted to remote sensing via aerial photography and satellite imagery. He has been studying and using dipole antennas to locate pipelines, waste pits, buried walls, and even graves. He has 30 publications on various topics, and 20 videos on YouTube that deal with the empirical experiments on dowsing rods/dipole antennas. He has been a requested speaker both domestically and internationally on various topics. His current passion is to supply dipole antennas to US troops, Department of Homeland Security (DHS) and Immigration and Customs Enforcement (ICE) personnel, and provide training for their use.

He is an honorably discharged Navy Vietnam Veteran.

He can be reached at seagersystems@gmail.com