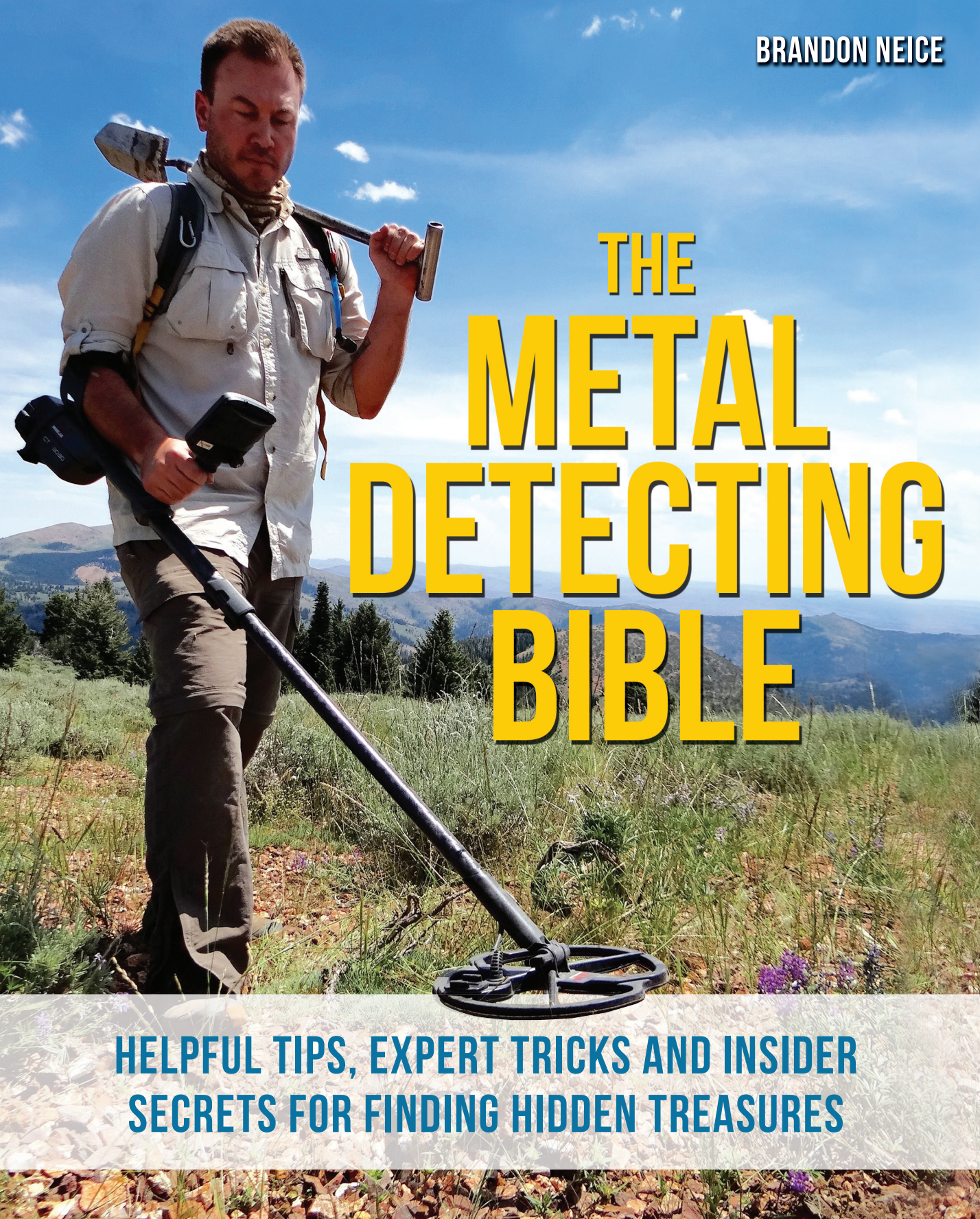

BRANDON NEICE

THE METAL DETECTING BIBLE

HELPFUL TIPS, EXPERT TRICKS AND INSIDER SECRETS FOR FINDING HIDDEN TREASURES

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FOREWORD

When I first began the hobby of prospecting in the 1990s, I was fresh out of high school and eager to learn all that I could to help me find the success I dreamed of. Panning led to sluicing, highbanking, dredging, and eventually, my first true introduction to professional metal detecting. I was in the midst of college and tailored many of my essays, projects, and elective courses to allow me to learn more about geography, geology, history, and any subject matter that might assist me in my detecting endeavors. I immersed myself in all things detecting until the hobby eventually became a profession. I've had the opportunity to dig gold coins, meteorites, and hundreds of gold nuggets.

The thrill of the hunt and the elation that accompanies great finds is truly addictive. Great discoveries are made every day. But gone are the days when it was easy. Getting started is simple; consistently discovering great finds is not. The abundance of treasure-hunting TV shows has brought welcome attention to the hobby of metal detecting. But with this comes increased competition and the need to be well-rounded and informed. The modern detectorist must master a variety of skills in order to find success.

Along the way, I've also had the pleasure of meeting and collaborating with the hobby's top names. This book is written by one of them. I've had the good fortune of collaborating with Brandon on a variety of projects and expeditions. He's a respected colleague and trusted friend. Brandon has become a true luminary in the field of coin and relic detecting. His passion is infectious, his knowledge deep, and his attention to detail unparalleled. He's a great ambassador of the hobby and loves sharing that knowledge and experience with those around him.

Too often those new to the hobby become overly preoccupied with the latest technology and gadgets. They lament if they are unable to afford the best equipment money can buy. This is a mistake. The real key to great discoveries has more to do with what's between your ears than what is in your hand. By applying the principles and information in this book, one can get an advantage that previously could only be accomplished with a great deal of time and years of experience. Brandon has condensed years' worth of knowledge and experience into an easy-to-read and informative guide. This book will prove to be an asset for both the aspiring hobbyist and the experienced professional.

— Eric Magnuson
Cast member on The History Channel's
The Legend of the Superstition Mountains

INTRODUCTION

My name is Brandon Neice. Others might know me as "Dr. Tones" from my YouTube series *Dirt Fishin America*, a compilation of videos that chronicle my metal detecting adventures with Eric Magnuson (Dirt Digler), T. J. Lawrence (Pickhead), Bill Hines (Billium), and Ryan Jamison (Badger), to name a few.

I was born and raised in Placer County, California, which was the center of attention during the California Gold Rush of 1849. In the third grade, my class went on a field trip to Sutter's Mill, the site where James Marshall first discovered gold in California. I remember going home to my father and telling him all about the gold that was literally in our backyard!

Needless to say, I caught the fever that day, little knowing that my father and his two brothers had grown up prospecting and dredging the American River with my grandfather. That weekend, my father purchased my first gold pan and took me to a creek that ran through my great-grandfather's property in the gold-bearing hills of Grass Valley. I watched in wonderment as my father began scouring the creek drainage that snaked its way down the hill to the valley floor. Occasionally I would catch him glancing up at the hills. It seemed as if he were listening to the hills tell the story of how they came to be. He knelt down by the stream and moved a few shovels of earth until he was satisfied with his results. He filled the pan with small amounts of soil from deep within crevices in the bedrock. Once the pan was full he showed me how to separate the gold from the earth by agitating the material with water from the creek. In the bottom of the pan—gold!

I remember thinking to myself, "It's out there! For real!" My father was an avid outdoorsman and each weekend was an adventure in the jeep or on horseback into the Sierra Nevada. Everywhere we went, the gold pan came along. Years later, my father moved to Idaho to start an outfitting business. I soon followed. Idaho had an extensive gold rush of its own and I remained an avid prospector.

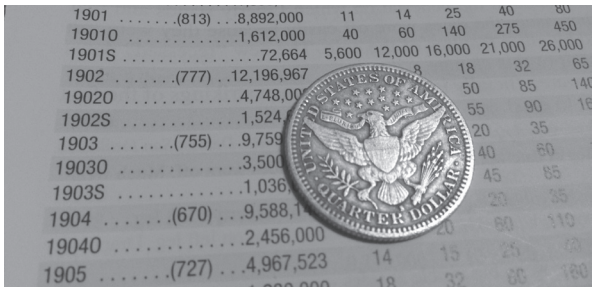
One day, a friend of mine showed me pictures of some very impressive gold nuggets. I reacted by asking the classic rhetorical question, "Where did those come from?!" He told me that a friend of his found them using a metal detector. These gold nuggets were far larger than any I had ever seen. "A metal detector?" I said. "Like…the thing that the old guys at the beach use?" He laughed and said, "Yup! He found more gold in one day than he had in all his years of sluicing, panning, and dredging combined!"

One week later, I had my very first metal detector. I had no clue what I was doing, where to look, or what to listen for. It took me almost a year to find my first gold nugget with a metal detector, but it was the biggest nugget I had ever found! I spent every waking moment thinking about getting back out to the gold fields and detecting. Unfortunately, the gold fields were now a little farther away and life managed to hinder my ability to get out. I began metal detecting around town for old coins and relics in hopes of satisfying my urges to get out to the gold fields. I studied old maps and numismatics, and researched locations to find old coins. I began to set goals.

Author holding his recently found Celtic gold stater, circa 20 BC.

At first, they were modest: Find a silver coin, find a silver quarter, reach the 1800s, etc. My enthusiasm grew with each new benchmark, and I soon realized I was addicted. My passion had grown from gold to nearly everything. I wanted to find it all! Gold, coins, jewelry, relics, meteorites, sunken treasure—*everything*.

Since then, I have managed to find almost all of the above. It never ceases to amaze me. There's so much treasure out there just waiting. This past year, I recovered what many consider the rarest US silver coin minted in the twentieth century!



The author's 1901 S Barber Quarter, said to be one of the rarest US silver coins minted in the twentieth century.

Over the years, I've traveled all over the world in search of precious metals, from the deserts of Nevada to the hillsides of England, searching for everything from ancient Roman and Celtic coins to gold nuggets and meteorites. The feeling of setting out to find something in particular and then actually finding it is unexplainable.

In this book, you'll learn the secrets I've acquired over the years that have helped me discover some truly priceless treasures. Finding treasure isn't easy. So I've set out to write the book that I wish I'd had when I started. If you have a passion for saving history, prospecting, or going on outdoor adventures, you might just have what it takes to become a metal detector–wielding, modern-day treasure hunter.

CHAPTER 1

BASIC PRINCIPLES

Over 4,000 years ago, some curious humans figured out that they could extract minerals from the earth and melt them down to fashion tools. In the centuries that followed, metal became a staple of everyday human life, found in tools, money, jewelry, structures, cars, aircraft, boats, computers, and even spacecraft. As a result, the earth has become peppered with the remnants of mankind's precious historical and amazing metals.

In 1874 Parisian inventor Gustave Trouvé invented a device used primarily to locate bullets and other metal fragments in patients. The metal detector was later refined by Alexander Graham Bell in 1881 in an attempt to locate a bullet lodged within President James Garfield's back. Unfortunately for President Garfield, the attempt at using the metal detector wasn't successful. The springs in the mattress that the president was lying on interfered with detecting the bullet and President Garfield later succumbed to infection from his injury.

Once the importance of such a device was acknowledged, refinements continued to advance the technology. At first, metal detectors were used primarily to locate and remove WWI and WWII land mines. Then, in 1931, Gerhard Fischer sold the first portable metal detector to the public. The technology, cumbersome and antiquated by today's standards, failed to catch on as a hobby until the 1950,s, when lighter, more powerful machines with longer battery life reached the market. The electronic treasure hunter was born!

Since the hobby of metal detection was created, untold billions of dollars' worth of gold, silver, coins, jewelry, antiques, war relics, meteorites, and more have been found using metal detectors. Most importantly, we have rescued items that would have been lost to the sands of time. Some of the artifacts that have been recovered by hobbyist metal detectorists have literally written and rewritten history books while others now grace the shelves of the Louvre.

BASIC DESIGNS

To start off, I have to address some basic functions and principles. This chapter will get some technicalities out of the way so you can go metal detecting! I'll try to make this as painless as possible. I'm not an engineer, so I'll speak in terms we can all relate to.

Various types of metal detectors used for different applications.

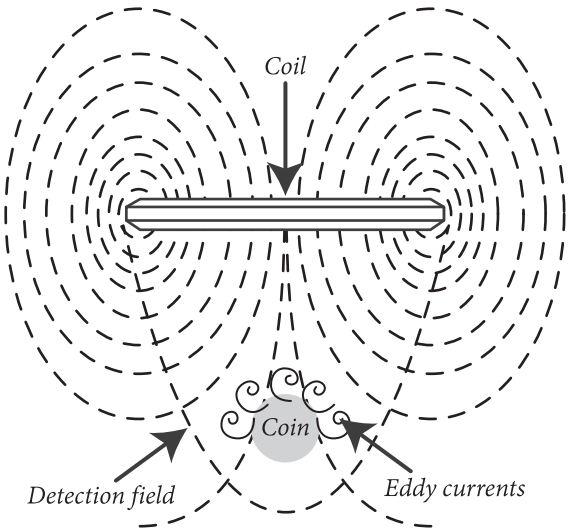
The basic design of a metal detector consists of a control box with a few buttons and/or knobs, a coil (the roundish thing that you place next to the ground), and a shaft that allows you to swing the detector in a fashion that is conducive to finding, well, metal. There are several different types of metal detectors. The most common by far is what we refer to as a VLF (very low frequency) machine. Metal detection machines also include pulse induction (PI), zero voltage transmission (ZVT), full band spectrum (FBS), and other types of multi-frequency machines. For the sake of moving forward, I won't be discussing some of the older, more antiquated technologies.

VLF DETECTORS

VLF metal detector. Note the chord is securely wound around the shaft to avoid entanglement.

VLF detectors operate on a very primitive principle using magnetic fields. Here's how:

- The metal detector's control box produces an electrical current that is transmitted via the transmit portion of the coil.
- Once the current leaves the coil, it becomes a magnetic field. The size and shape of the detection field varies depending on the size and type of coil, the frequency, and environmental factors, such as ground conditions.
- The magnetic field generated by the transmit portion of the coil oscillates at varied frequencies.
- When a metal object is introduced into the detection field, electrical currents begin to flow through the metal object. These are called eddy currents. Eddy currents generate a magnetic field of their own.
- The magnetic field created by the metal object is different in size and strength from that of the magnetic field produced by the transmit coil. Ultimately, it's the altered and quickly decaying magnetic field of the eddy currents that is detected.



Coin responding to the coil's magnetic field.

The metal detector's transmit frequency plays a large role in how metal targets respond. As a rule of thumb, the lower the frequency, the farther and deeper the signal will travel. However, lower frequencies do not respond well on small targets and low conductors. On the opposite end of the spectrum, higher frequencies are more sensitive to small items and low conductors.

When referring to the conduction properties of a metallic object as it pertains to metal detecting, the term "conduction" refers to how the metallic object facilitates eddy currents. There is a direct correlation between an object's ability to conduct electricity and an object's ability to facilitate eddy currents: The better the metallic object conducts electricity, the better the object will facilitate eddy currents. The better an object facilitates eddy currents, the more likely it is to be a "high conductor," such as silver or copper, thus generating a "high tone."

The opposite can be said of "low conductors," such as iron and lead.

INDUCTANCE

Although gold in its purest form (24k) is an excellent conductor of electricity, jewelry is rarely 24k. The majority of gold jewelry is 18k or less. Because of this, gold jewelry is typically a very poor conductor and will more often than not generate a low or medium tone that falls into the range of foil, pull tabs, can slaw (this occurs when a lawnmower hits an aluminum can), and other bits of small, metallic garbage. So if it's gold jewelry you're after, YOU MUST DIG IT ALL!

A large, low-conducting target (like iron or lead) can be capable of producing a high tone because large quantities of eddy currents can be detected. This phenomenon is referred to as inductance. Inductance is the overall collective mass of the eddy currents produced by the target and the eddy current's pathway. Simply put, large targets make large disturbances.

Let's break it down.

1. Your metal detector processes the size of the target, how well it conducts eddy currents, the orientation of the target, the distance of the target in relation the coil, ground mineralization, electromagnetic interference (EMI), and the presence of other metallic objects in close proximity of the target.
2. When a metallic object interferes with the magnetic field, the receiving portion of the coil detects eddy currents. Those signals are amplified and processed by the control unit.
3. The control unit interprets the received information and assigns the appropriate audible response for the target. The end result is a beep, letting you know that there's something metal under your coil.
4. Most metal detectors rely on motion to work and will only detect an object if the coil is moving. Hovering over a target will not produce a sound, unless the detector is in pinpoint mode (page 23), so keep that coil swinging!

TONES AND TID NUMBERS

Most detectors these days have multiple tones that help the user distinguish the conductivity, size, and depth of the target. If you own a fancy detector, you might also see a target identification number (TID) on the screen or some other form of visual interpretation.

The numeric value assigned to the target is also a reflection of the target's conductivity and has a direct correlation to the tones produced by your detector. Low numbers are typically assigned low tones and high numbers are typically assigned high tones. (See chart on page 22.)

Your detector's tones and TID numbers are limited by brand and model. Some machines have only one tone for all targets and don't sport a fancy TID. Other, more professional models have up to 99 tones with just as many TID values. When looking for a coin and relic machine, I would recommend saving up for a model that is capable of generating four or more tones. It should be noted that TID numbers can be inconsistent and can change with each coil sweep over the target.

Numbers should only be used as a way of gaining more target information. Never dig solely by numbers! Your metal detector's tones are far more important than the numbers on your screen. We'll discuss tone consistency later.

PULSE INDUCTION (PI) DETECTORS

PI machines operate by sending and receiving pulses of varying frequencies into the ground. Adjusting the pulse timing and delay settings will determine their depth and/or sensitivity. Here's a quick summary of how they work:

- The machine sends out pulses consisting of high currents transmitted in timed intervals through the coil.
- Once the transmit frequency has left the coil, the machine switches into receiving mode and waits to receive a returning sample of the transmitted signal.
- Signals are generated when current begins to flow into the metallic object as a result of the magnetic field produced by the coil.
- When the machine switches into receiving mode, the magnetic field produced by the coil collapses and shortly after, the current in the metallic object collapses. It's this secondary collapse caused by the metallic object that is detected.

Minelab GPX 4500 PI metal detector.

PI machines are generally not going to be your first choice for coin hunting because they lack the ability to discriminate and are considered an all-metal machine. They can be effective at relic hunting in areas of low to moderate trash and have become a popular alternative for relic hunting in the Civil War sites of the South. They are typically used for gold prospecting in the highly mineralized soils of gold-bearing areas; however, they are also great at beach hunting because they aren't as susceptible to high concentrations of minerals and the salinity of beach environments. The vast majority, however, are geared toward gold prospecting.

Because these machines are a highly specialized tool primarily used for gold prospecting, we won't be getting too in depth about them. What do you need to know? If you get one for coin hunting, plan on digging more trash than coins. If you plan on getting one for relic hunting, plan on going to a site with very few targets or highly mineralized ground where other detectors won't work. If you want one for beach hunting, make sure it's waterproof and bring a BIG sand scoop because they can detect quite deep. I use them almost exclusively for nugget hunting and am always impressed at their ability to hit gold nuggets at depth.

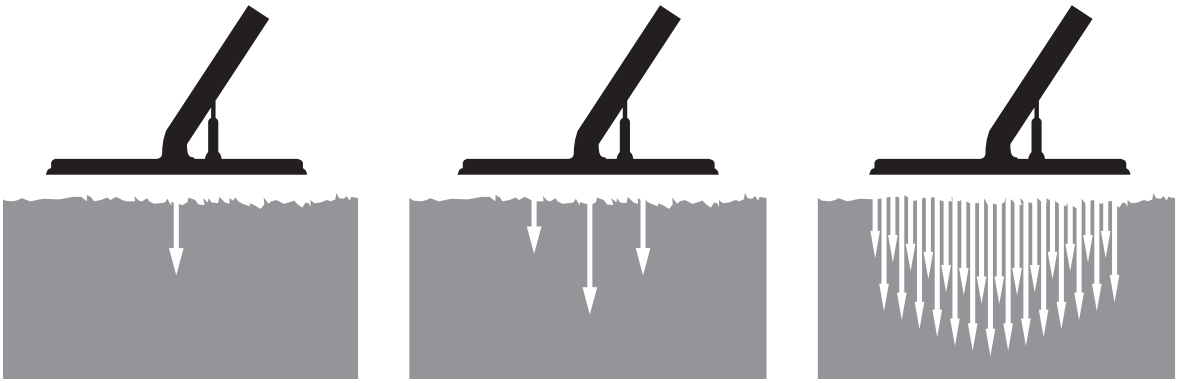
FULL BAND SPECTRUM (FBS) DETECTORS

Author making adjustments to his FBS metal detector.

Full band spectrum detectors operate on multiple frequencies at the same time. The ability to send and receive multiple frequencies at once is almost like having several detectors in one. FBS technology also allows the detector to process both ferrous and non-ferrous properties of the target simultaneously. This provides the user with more accurate information on the target and allows for more accurate discrimination of the target. (See page 21 for more on discrimination.) We

talked about how the lower frequencies tend to get more depth and respond better to high conductors and that the higher frequencies tend to hit harder on smaller, low conductors near the surface. Now imagine that your detector can use a range of frequencies to cover all the bases!

The advantage that these multi-frequencies have can be quite substantial. The only down side is that typically you'll have to swing a little slower with a multi-frequency detector. This is simply because the detector has so much more information to process. The new FBS detectors have greatly improved recovery speeds in comparison to only a few years ago and although they still aren't as fast as a single-frequency machine, they aren't far behind. Some newer detectors even allow the user to choose what frequencies to operate on. This can be beneficial in areas of high trash where recovery speed is important.



Single frequency *Three frequencies* *FBS 28 frequencies*

ZERO VOLTAGE TRANSMISSION (ZVT) DETECTORS

ZVT detectors are similar to PI detectors in that they are both highly specialized machines used primarily for detecting for gold nuggets (nugget shooting) in highly mineralized areas. Unlike PI machines, ZVT machines constantly send signals into the ground *and* constantly receive signals from the ground. As I've stated before, I'm not an engineer but what I do know is that by not pausing to send or receive signals, the ZVT machines have both increased depth and sensitivity.

Compare this to filming a fired bullet at different frame rates. Filming at 1,000 frames per second (almost constant) allows you to capture more detailed images and translates to a better, smoother video playback than filming at 30 frames per second. During slow-motion playback, 1,000 frames per second will allow you to view a speeding bullet rotating through the air; 30 frames per second would fail to capture the bullet entirely.

Modern-day ZVT metal detector.

Now, picture that bullet as a gold nugget. The 1,000-frames-per-second camera is the ZVT detector and the 30-frames-per-second camera is a PI machine. Some tests suggest that ZVT detectors gained a 50 percent increase in depth on gold nuggets when compared to PI machines in the same ground conditions using the same targets.

COILS

There are three main types of coils: concentric, Double D (DD), and mono-loop coils.

Concentric coil. Note the outer and inner loops for sending and receiving.

Concentric coils generally have an outer loop that transmits current into the ground at a specific frequency and an inner loop that receives signals and sends them to the control box for interpretation. Most VLF coils work on this principle.

If you could see the detection pattern of a concentric coil, it would look very much like an upside-down road cone glued to the bottom of your coil. Concentric coils are going to provide the most depth in neutral ground conditions. So if you're in a wide, open place with neutral ground conditions and metal targets are few and far between, go for the concentric coil. It will provide excellent depth and coverage.

Due to their detection pattern, concentric coils are not the ideal choice for hunting sites with lots of unwanted targets. The concentric coil's detection field allows multiple targets to be processed at the same time, resulting in blending of tones.

For example, if both a quarter that usually produces a high tone and a nail that usually produces a low tone were under the coil at the same time, the end result could be a medium tone. Or, if the nail were substantially larger than the quarter, it could potentially mask the quarter completely because the signal generated by the bigger target is much stronger.

BLENDING AND MASKING

Blending occurs when two different targets are detected at the same time. Because the metal detector can't provide two different tones simultaneously, it splits the difference and provides one tone, a compromise between the two signals. For instance, if I asked you to say the words "breakfast" and "lunch" at the same time, you would most likely say something like "brunch."

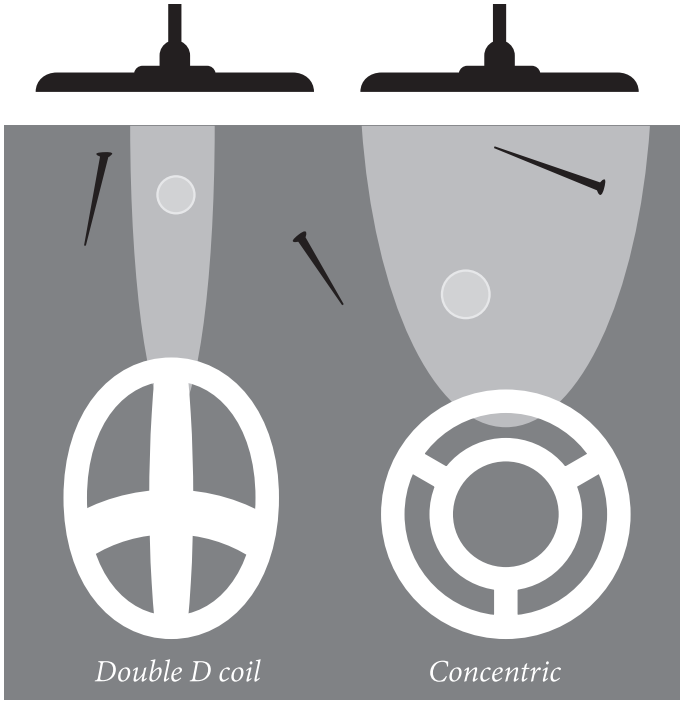
Masking occurs when one target is directly over the top of the other. Metal detectors can't "see" through one metal to distinguish another, much like you can't see through my garage door to tell me what color my jeep is.

Up until a few years ago, metal detectors lacked the ability to distinguish multiple targets under a single coil at the same time. Most metal detectors today still lack that ability and rely on target separation to provide info one target at a time.

DD coil. Note the spine running from the nose of the coil to the heel.

For instance, if I had a nail and a quarter 1 inch away from each other, I would need to "separate" the targets by means of detecting them individually to avoid tone blending or masking. You might be asking yourself "how do I detect targets in close proximity of each other individually?" Enter the DD coil.

Double D coils work on the same principle but have a different pattern of detection. Double D designs have a "hot spot" down the center, or spine of the coil. If you were to disassemble a Double D coil, the coil windings would look very similar to a butterfly. Hence the name "Double D" (of course one D is actually a backward D).



Detection patterns of double D and concentric coils.

Double D coils are particularly useful when hunting in areas with tons of metal targets in close proximity or when hunting in highly mineralized ground conditions. The detection field of a Double D coil can be described as a "blade" of detection from the nose of the coil to the heel of the coil, with some periphery detection as well. The narrow width of the detection field makes this coil perfect for trash-ridden sites because it is able to get in between targets to detect targets separately.

Target separation reduces the risk of missing good targets that are in close proximity to bad targets, or masking. Double D coils also reduce the phenomenon of tone blending.

The slim profile of the detection field also outperforms concentric coils in highly mineralized ground, simply because the Double D coil sees less ground.

It should be noted that whatever coil you're using, it's every bit as sensitive on the top side of the coil as it is on the bottom side. This will come in handy later on.

Mono-loop coils have a field of detection similar to the upside-down road cone pattern of the concentric coils, with a

Mono-loop coil.

couple of major differences. Instead of having an outer coil that transmits and an inner coil that receives, the mono-loop coil only has one outer coil that both transmits and receives. Hence, the name "mono."

Because they only have one coil that both transmits and receives, mono-loop coils can only be used by PI machines. This is due to the way PI machines operate by transmitting intermittent pulses and then switching into receiving mode as opposed to the continuous transmission and reception of a signal from a VLF detector requiring two separate coils to transmit and receive.

THE EFFECTS OF MINERALIZATION

Let's talk for a moment about mineralization in the ground and how it affects your metal detector. All those fancy coins, nails, pull tabs, rings, and other metals you find come from the sands of Mother Earth herself. They've been extracted and refined to form whatever practical uses they have acquired.

Different parts of the earth contain varying amounts of naturally occurring minerals. In some places, this variance is much more pronounced than in others. Certain minerals, like naturally occurring iron, magnetite, hematite, and salt (to name a few), can drastically affect the way your metal detector sees targets. Even though these minerals, in their natural state, are microscopic in comparison to the targets you're after, they are significant enough to have an effect on your detector's ability to find targets at depth. Extreme depth and sensitivity is more important when metal detecting for gold nuggets. Coins and relics, unless acted upon by an outside force (e.g., landscaping, flooding, etc.) rarely sink more than 10 to 12 inches.

Mineralization can also act on your machine's ability to discriminate targets. More on discrimination later (page 21). It's the magnetic properties of these minerals that disrupt the magnetic field generated by your detector. I like to think of ground mineralization as fog and my detector as a headlight. The foggier it is, the harder it is for light to travel. Conversely, the more ground mineralization there is, the harder it is for your detector's magnetic field to travel through the ground unaffected. More mineralization = Less depth.

Here's a fun experiment. Go to your kitchen and grab the strongest refrigerator magnet you can find. If you've got a rare earth magnet, even better. Now take it outside and rub it around in the dirt. When you remove the magnet from the dirt, take a close look. Notice anything? You can probably see tiny little bits of what appears to be black sand. Those tiny bits of black sand are actually pieces of naturally occurring iron and other magnetic, naturally occurring minerals. Depending on how mineralized your soil is, you might see a little or a lot. Areas of low moisture, volcanic activity, or long periods of geological inactivity can yield some of the highest concentrations of mineralization. Australia's Golden Triangle is renowned for having some of the world's worst soil conditions; however, it's also renowned for producing some of the world's largest gold nuggets. When prospecting for gold, these areas of high mineralization can be good indicators of gold-bearing materials.

As mentioned before, the DD coils' small area of detection allows the metal detector to see less of this mineralized ground. Even more so if the size (diameter) of the coil is reduced, making the detectable footprint even smaller. By simply decreasing the size of your coil, you'll manage to cut out a lot of the mineralization that your detector has to compete with. This simple trick can help you gain extra depth and sensitivity in hot (mineralized) ground. In normal ground conditions with little to no mineralization, the bigger the coil, the bigger the field of detection, the deeper you'll detect objects. However, in highly mineralized ground, bigger coils, when used on VLF machines, can simulate the example of driving with your high beams on in the fog. However, larger coils on PI machines can provide extra depth in hot ground. This is because PI machines are much more tolerant of highly mineralized ground. I think I've used the term "detection field" and "mineralization" enough to warrant moving on. Would you agree?

METAL DETECTOR FEATURES

THRESHOLD

The threshold is a constant audio tone that can be adjusted to allow or block out background noise and ground variations (EMI and changes in mineralization). It can be adjusted to suit your personal preference or hunting requirements. By turning the threshold volume all the way down, you allow every pop, hum, buzz, and beep to come across. This can be very distracting and can also make other signals harder to distinguish amongst all the unwanted noises. On the other end of the spectrum, if you set your threshold too high (loud), the constant, overbearing hum of the threshold will block out faint targets such as deep coins or other small items.

The threshold has been compared to the squelch knob on a CB or short-wave radio. With the squelch turned all the way down, all you'll hear is the constant hissing and static of background noise. Perfectly tuned, the squelch control suppresses the background noise and allows you to hear radio transmissions without the static. But with the squelch dialed all the way up, you'll miss out on the weaker, far away transmissions. The key is to set the threshold as low as you can without losing it completely. It should sound like a mosquito that won't leave you alone. This will allow faint signals to break the threshold while keeping unwanted noises at bay.

When the threshold is too high, a faint signal is masked and only the peak of the loud signal is audible above the threshold (see figure 1.1). With the threshold set correctly, both target signals are easily heard (see figure 1.2). A threshold level that's too low does not allow for faint target signals to be heard (see figure 1.3).

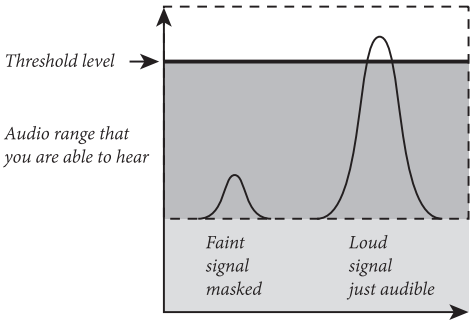


Figure 1.1

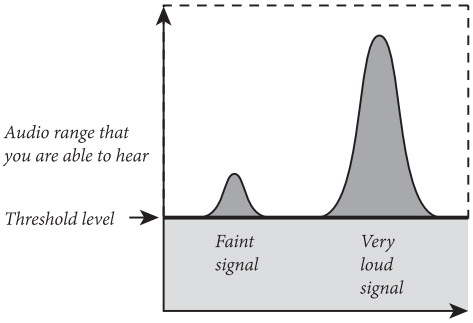


Figure 1.2

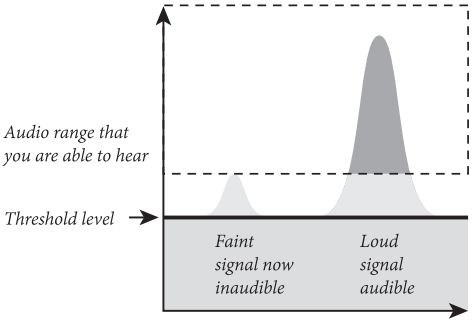


Figure 1.3

It's worth noting that if your threshold warbles at barely audible volumes, it might be necessary to turn it up until the warbling subsides. Any audio instability or distractions can easily mask good targets. Stability is key. Fluctuation is the devil. The threshold tone also provides very useful information when using discrimination. The "nulling" of the threshold is an indication that you're swinging over a target that you have deemed unwanted. I promise I'll get to discrimination later. There's a good reason for saving it.

Some metal detectors don't have a threshold. These are called "silent search" detectors. They are aptly named because they are literally silent until you pass over a target. Silent search detectors utilize a preset filter to control unwanted noise. They also lack the ability to adjust the cutoff point wherein a signal is heard or not heard. Although hunting without the constant mosquito hum in your ear is appealing, silent search detectors leave you with less information on what's in the ground than detectors with a good audible threshold.

GROUND BALANCING

So now that we know the earth has naturally occurring metals in it, how do we compensate for that mineralization? How do we stop our detectors from confusing the earth as a target? The answer is a term known as "ground balancing." Ground balancing is a way to calibrate your detector to its environment. Essentially, you're telling your detector to reject the earth's minerals from being perceived as a target and instead you're adjusting the detector to perceive the earth as a baseline in which to find foreign or larger metals.

Ground balancing is one of the most important functions you can perform. Done incorrectly, or not at all, your detector would fail to distinguish targets from the ground in which they're buried. It would be like trying to use a metal detector to find a coin underneath a piece of sheet metal. Your detector would not be able to see through one metal to distinguish another. Newer metal detectors make the process of ground balancing simple. Some even perform it automatically when the machine is powered on. Multiple modern metal detectors also have a feature referred to as "ground tracking." Ground tracking automatically (and continuously) adjusts to changing ground conditions to give you optimal ground balance. This can be a great feature that will save you the hassle of having to ground balance multiple times throughout the day.

MANUAL GROUND BALANCE

Manual ground balancing requires the user to listen while tuning the machine to the optimal ground balance. It is up to the user to adequately balance the detector to the ground conditions. It is also up to the user to continually recheck the ground balance to make sure the detector is optimally tuned (ground balanced).

To perform a manual ground balance, perform the following steps:

1. Make sure you're in the area that you intend to be detecting.
2. Turn your detector on.
3. Adjust your threshold to a volume that is quiet, but audible. Some detectors require the machine to be in "all metal" mode, where discrimination is off so you will detect all metals.
4. Find a piece of ground free and clear of any metal objects. Ground balancing over a piece of metal will throw things way outta whack and prevent your machine from balancing.
5. While keeping your coil parallel to the ground, raise your coil about 18 inches off the ground and then lower it back down in a repeated, pumping, up and down motion. When lowering your coil, get it as close to the ground as possible without actually touching the ground. Listen to the sounds your threshold is making.
6. Your detector will most likely be doing one of two things: making a noise as the coil is traveling away from the ground, or making a noise when traveling toward the ground. If your threshold stays the same when traveling toward *and* away from the ground, congratulations! That's what you're aiming for.
7. If your threshold increases (gets louder) when traveling away from the ground, your detector is negatively balanced and requires a positive ground balance adjustment.
8. If your threshold increases when the coil travels toward the ground, your detector is positively balanced and requires a negative ground balance adjustment.
9. Use your ground balance control to slowly adjust the parameters up or down until the threshold is stable and doesn't fluctuate.

Some experienced hunters will tune the detector slightly positive (threshold volume increases toward the ground). Doing this can make the detector more sensitive to smaller bits of metal and can also slightly improve depth. This technique is popular for those who use detectors to nugget shoot. Remember to recheck your ground balance by pumping your coil up and down after every few minutes or after traversing visibly different ground or elevations. In some places, ground conditions can change every few feet.

AUTOMATIC GROUND BALANCE AND GROUND TRACKING

Most newer metal detectors feature automatic ground balancing functions. Automatic ground balancing requires the user to perform a sequence. During this sequence, the metal detector decides what the optimal ground balance will be. The user only has to perform the physical function of pumping the coil up and down. The machine does all of the calibrating.

The process usually consists of pushing or holding the ground balance button while pumping the coil over a portion of ground that doesn't contain metal. It usually takes less than 30 seconds to perform and ends when the detector prompts you. Some detectors have a digital readout of the number assigned to your detector's current ground balance setting and a continuous readout of the ground conditions. When the two numbers begin to drift apart, it may be time to perform another ground balance.

Metal detectors that perform automatic ground balance will often have another feature called "ground tracking." When enabled, this feature automatically and continually adjusts the detector's ground balance to match the current ground conditions. Once the detector has been balanced and the ground tracking has been enabled, the user will not have to redo the physical act of ground balancing. In the past, this function has been written off as being unable to properly obtain an accurate ground balance. With advancements in technology, ground tracking has become more and more common and is gaining acceptance among users. I personally use ground tracking whenever coin and relic hunting. I feel that the modern detectors are far better at calculating optimal ground balance than I will ever be. The hard part for most "old school" hunters is trusting that the detector knows better than you. Be sure to follow the manufacturer's recommendations no matter what method you choose to use.

SENSITIVITY

Sensitivity is one of the most important features of your metal detector. It's also one of the most misunderstood. The sensitivity control on your detector allows you to increase or decrease the degree to which your detector signals in response to objects passing through its magnetic field. The sensitivity parameter can affect both the depth and size that an object must be in order to be detected. For instance, higher sensitivity settings might allow you to hit smaller targets, like earrings, while lower sensitivity settings might allow you to pass over unwanted small targets.

Yes, cranking up the sensitivity can give you a little more depth on targets—*however*, higher levels of sensitivity often come at the cost of instability in the form of chirps, chatters, and false phantom signals. A phantom signal is a term I use to describe unrepeatable signals that are there one second then gone when you swing back over them.

When you increase the sensitivity, you encourage all those microscopic bits of natural iron (and small bits of man-made crap) to introduce themselves as targets. Back to the headlight analogy. Pretend that the amount of fog represents the amount of ground mineralization and that your headlight strength/pattern represents your detector's sensitivity. On a clear night (no fog), you would be able to use your high beams, allowing you to see more things that are farther away. This would be similar to using higher-sensitivity settings in clean ground with low mineralization. You would be able to detect more objects, deeper. Now let's look at the opposite end of the spectrum. On a foggy night you would use a less powerful, more diffuse light pattern to improve visibility. Turning on your high beams in this scenario would hinder your ability to see because the fog particles would act as tiny reflectors and would prevent you from seeing past them. Now think of those microscopic bits of ground mineralization as teeny, tiny, itty, bitty metal detector signal reflectors.

Even though you've already ground balanced to account for that mineralization, your detector can still have trouble deciphering ground mineralization from good targets if you've got your sensitivity jacked up too high. So how do you know what to set your sensitivity to? Easy…Jack it up until your detector starts squawking and acting erratic, then dial it back just a couple of notches. Your detector should provide the occasional false signal but offer the stability needed to hear good targets. As you get better at recognizing repeatable targets, you can increase your sensitivity to maximize depth.

REPEATABLE TARGETS

A repeatable target consistently produces a signal as you pass the coil over it from multiple directions (e.g., north, east, west, and south). Targets that fail to consistently reproduce a signal from one or more directions should be investigated, and by investigated I mean dug up.

EMI AND NOISE CANCEL

Again, EMI stands for electromagnetic interference. As it turns out, things that are energized emit electromagnetic fields that can interfere with the way other electronic devices send and receive information. Things like transformers, power lines, cell phones, radios, TVs, and electric fences can all wreak havoc on your detector. These EMI disturbances are all over and in extreme cases can make detecting around them impossible.

Luckily, there are a few things you can do to lessen the effects of EMI. Some metal detectors have the ability to slightly alter the frequencies that they are operating on to prevent interference from outside sources. This is called "noise canceling." It does exactly what it implies—cancels unwanted noise in the form of EMI. However, if you're detecting near an air traffic control tower, underneath power lines, and next to an electric fence in a lightning storm, you might hear a little chatter. Even with noise canceling capabilities and well-shielded coils, there are just some areas that won't allow for your machine to work properly. Best to just move on.

DISCRIMINATION

Discrimination is one of the most valuable tools you can have when it comes to metal detecting. It can also be your worst enemy. Discrimination is your detector's ability to ignore unwanted metals while allowing wanted metals to make a sound. For instance, I don't like to find nails. Nails are the single most abundant unwanted target available at locations inhabited by man in the past 2,000 years. Most nails are made of iron. If I were to "discriminate" against iron, I simply wouldn't hear iron targets. In fact, some detectors actually give you the opposite of a signal by momentarily silencing the threshold while passing over the target. This brief moment of silence when the threshold drops out is called a "null."

A null provides the user the ability to acknowledge that the machine has passed over a target that you have discriminated against. Why wouldn't you just choose to listen to all of the signals? In some cases, listening to everything can provide you with the needed audio response required to squeeze coins out of trash-ridden areas. However, after about an hour of your ears being barraged by constant beeps, bops, and squawks, you start to develop what is referred to as ear fatigue. This condition can absolutely ruin a day of detecting by causing severe ringing in your ears, ear ache, and in extreme cases, the onset of permanent hearing damage. If you choose to listen to everything for extended periods of time, be sure to listen at a slightly lower volume than normal to prevent ear fatigue.

Almost all modern metal detectors have a discrimination feature. Metal detectors that don't have discrimination are often referred to as "all-metal machines" because they produce a signal or beep over all metal targets regardless of the metal's specific makeup and content.

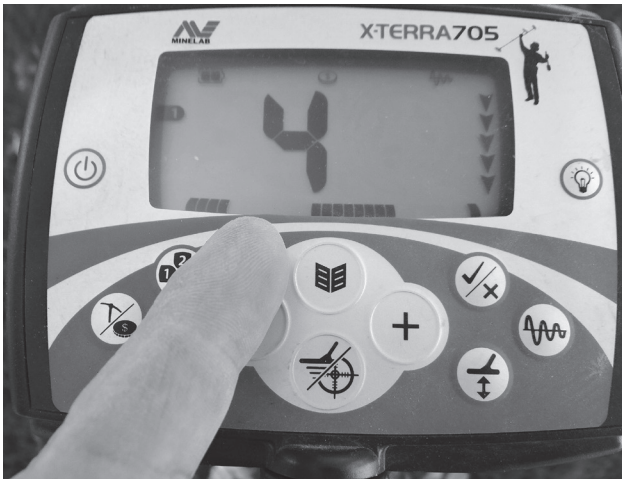
Metal detectors discriminate by analyzing the received target information. Different metals react differently to the magnetic field produced by your detector.

Inductance can be the wild card when it comes to assigning a tone/number to a target. A large, low conductor can trick your detector into making a higher tone than that target would make if it were smaller. A gigantic iron railroad spike might make a high tone/give high numbers where a regular-size nail made of the same iron would give a low tone/low numbers. It all comes down to how much those crazy eddy currents get worked up. Here's a general list of targets and how conductive they are. Let's use a generic numeric scale of 0 to 100. Remember, this is a generic scale and you'll need to consult your specific detector's manual for actual target response guidelines.

TARGET CONDUCTIVITY		
TID	**NOISE**	**TARGET**
0–10	low tone or grunt	iron
11–25	low to mid tone	small bits of aluminum, bird shot, and other small bits of metal
26–50	mid tone	pull tabs, bottle caps, nickels, small gold rings, shotgun shells, and other low conductors
51–70	mid to high tone	larger gold rings, zinc pennies, Indian Head pennies, buttons, and bullets
71–100	high tone	silver, dimes, quarters, half dollars, dollars, and various large items

You can see immediately that using discrimination to avoid digging pull tabs and other trash might come at the cost of missing gold rings and other valuable items. The more items you discriminate, the more you risk missing out on great stuff. Most beginner and intermediate detectors that have discrimination use a number system or a dial to dictate the level of discrimination. The higher you set the number/turn the dial, the more targets you block out. In this system, if I set the discrimination level at 50, I would be discriminating targets with a TID of 50 or lower and accepting targets with a TID of 51 to 100.

Most higher-end detectors have a feature called notch discrimination. This feature allows the user to "notch out" only certain unwanted targets while retaining the ability to detect targets both above and below the discriminated parameters. Let's say that a pull tab on your machine will constantly read 23 on the TID and a bottle cap will consistently read 30. Notch discrimination would allow you to block out only numbers 23 and 30 while retaining the ability to hear all the other numbers 0 to 22, 24 to 29, and 31 to 100. Notch discrimination is an excellent tool and is (in my opinion) well worth spending a few extra bucks on. Warning: *Even notch discrimination is not foolproof.* The only way to know what something is, is to get it out of the ground!



In this example of notch discrimination, the black notches represent targets that have been discriminated, or "notched out," and the open spaces represent the accepted targets. The author points out the accepted area on this detector.

PINPOINT MODE

Pinpoint mode is exactly what it sounds like. It enables the user to pinpoint the target in the ground prior to retrieval. Unlike regular detection mode, pinpoint mode is a non-motion mode, meaning that you don't have to be constantly moving the coil in order to produce a signal. There are a few different techniques to pinpointing that we'll discuss later.

RECOVERY SPEED

Recovery speed is the time it takes your detector to respond to targets in close proximity. Having a slow recovery speed might mean that the first signal you receive could cover up the second signal. Imagine that each time your metal detector produced a response, that beep lasted for one second. Now picture two targets right next to each other. If you're swinging fast, those two targets will end up being less than one second apart, causing that first beep to completely overlap the second target. It's important to match your swing speed to your machine's capabilities and to take into consideration the environment you're hunting in.

CHAPTER 2

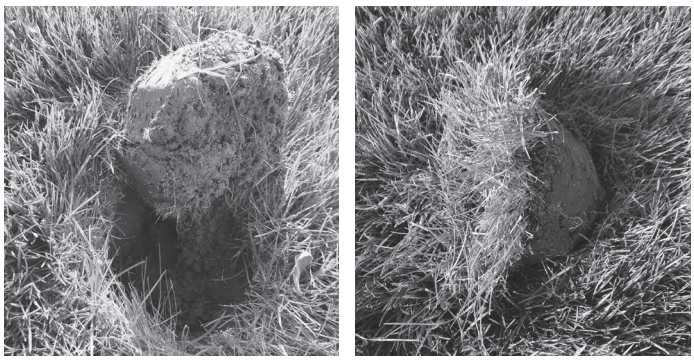
TOOLS OF THE TRADE

Now that you hopefully have a decent idea of how metal detectors work, let's take a look at some of the many tools available, how we use them, and why. Keep in mind that not all of these tools are necessary. Many of these tools are only needed in very specific situations and might not be at all relevant to the type of hunting you plan to do. As with any trade, there's always the "right tool" for the job. I wouldn't use a backhoe to dig up a coin, just like you wouldn't use a flame thrower to cook a hot pocket (or maybe you would?).

That being said, a little innovation can go a long way. Here's a nice, long list of stuff to spend your sugar momma's money on. Follow the simple digging tips and maybe, at the end of the day, you'll save yourself a whole lot of blood, sweat, and tears. Take it from the sweaty, crying guy covered in blood.

It should also be noted that you're going to hear the phrase "target retrieval" quite a bit. I use this phrase as opposed to the word "digging" for a couple of reasons. When people hear the words "digging," "dig," "digger," or "dug," it conjures images of giant shovels, pickaxes, and backhoes digging with ill regard, busting through water mains and septic tanks. Using the phrase "target retrieval" makes you sound like more of an expert archaeologist with trowels and toothbrushes. This will come in handy when you're trying to convince property owners to let you detect on their property. So, for the purpose of helping you get permission on some great ground, use the term "target retrieval." I'll do my best to beat it into you throughout the book, but I'll still use the terms mentioned above amongst us "diggers." Savvy? Good. Glad you're on board.

PLUG CUTTING



A perfectly cut plug will preserve manicured lawns and please property owners.

Before I get started talking about tools of the trade, let me take a moment to describe one of the techniques you'll be using to retrieve targets. Plug cutting. Plug cutting is a target retrieval technique used primarily for coin/relic hunting when on manicured lawns. Figuratively speaking, if you're a coin hunter, you're going to need to master this technique. Using a spade of some sort, cut a horseshoe shaped hole in the grass. Be sure to use the full length of the spade when inserting. Slightly angle the tip of the spade toward the center of the horseshoe. Once the cut is complete, use your spade to flip the "plug" upside-down, folding it back while keeping the uncut side of the grass attached. This will ensure the roots of the grass stay

attached and should prevent the grass from dying or yellowing. When you're done flipping the plug, you should have a round, cone-like hill of dirt in front of you, and if you're lucky, your target will either be in the plug itself or in the hole the plug came out of. Once you've retrieved your target, flip the plug back into its original spot and give it a pat and a rub. If you did it right, you should have no evidence that you retrieved your target. The grass should look exactly as it was. This technique takes a little practice to master. Both accurately using your detector to pinpoint the target and cutting the plug should be practiced extensively somewhere where your screwups won't upset anyone. Trying this technique for the first time on Hank Hill's precious lawn probably won't go over so well. So be sure you're a plug-cuttin' master before you head out onto private property or public parks.

LESCHE TOOL

The Lesche tool is a must for any detectorist.

If someone told me that I could only choose one metal detecting tool/accessory, it would hands down be the Lesche tool. It's pretty much the Rambo knife of metal-detecting tools. A smooth, sharp blade on one side and a serrated monster on the other, the Lesche is ready to tackle some serious digging. Combine that with some good ole fashioned American Chrome Moly steel and you've got 7 inches of earth-penetrating power that Chuck Norris himself couldn't bend (I've seen him try). They can typically be had for around $40 and they are well worth the investment. I'm what they call a cheapskate. I tried at least a dozen cheap digging tools totaling over $60 trying to avoid paying for a $40 spade. That $40 spade has been with me on every dig for nearly a decade now. Like I said, if I had to choose one tool, this would be the one!

T-HANDLE SHOVEL

The T-Handle shovel is a small spade on the end of a 36-inch handle. Aptly named because of the T-shaped handlebars at the end of the shaft, this specialized digging tool is a personal favorite and rarely gets left behind when I'm out and about. This particular tool is a superb choice for cutting plugs in manicured grass. Its lengthy handle allows you to remain standing while doing the majority of the work and operates much in the same manner as a regular #2 shovel. The sharp spade on the end makes for clean cuts and allows for plugs to be relocated without remark.

Although this tool is *the best* choice for keeping manicured grass lawns virtually unaffected by target retrieval, I should give you fair warning. This specific tool has sparked quite the controversy among some of the hobby's more discreet patrons. Although it is a highly specialized tool for target retrieval, in the eyes of the layperson it could be misconstrued as a yard-wrecking shovel. The argument could be made that it gives metal detectorists the unwanted image of careless treasure seekers out on the town looking for a fresh grave to rob. I, on the other hand, *highly* disagree. I would rather use the best tool for property conservation than leave evidence of my actions in hopes of being "discreet." News flash: There's nothing discreet about a dude with a giant metal detector.

People aren't stupid. They know you have to get the target out of the ground somehow. Yes, the Lesche tool is great for cutting plugs and is a more discreet option; however, the added sawing motion needed to cut through turf often leaves an unwanted mess of grass and dirt and generally speaking, isn't as clean-looking. If you have a property owner that's on the fence about giving you permission to dig because of possibly harming the lawn, then now would be a good time to show them your techniques and offer them a choice of what tools they'd prefer you to use. Ninety percent of the time, I use the T-Handle shovel as my primary retrieval tool and my Lesche tool as a secondary locator once the plug is popped.

The T-Handle shovel is a very efficient plug cutter.

HEADPHONES

A pair of good, full ear, cupped headphones is a must. Some of the signals you'll encounter are very soft whispers that require a great deal of concentration to hear. You'll also need headphones to block out background noises around you like wind, traffic, and waves. The sound coming from your machine's external speaker just isn't going to be loud enough for the majority of environments.

Metal detecting headphones have a wider response, allowing for a broader spectrum of frequencies to be heard.

As an alternative, I also use a pair of well-fitted earbuds. Earbuds don't get as hot during the summer and tend to look a little cooler as well.

HANDHELD PINPOINTERS

The handheld pinpointer is the best thing to happen to detecting since the invention of the actual metal detector. Although the pinpoint function on your detector is fairly accurate, it only gets you in the ballpark of where you should dig. It doesn't actually find the object for you. The handheld pinpointer is essentially a handheld metal detector that aids in searching for

metal targets once you've opened up the ground. They can also be used to pinpoint shallow targets for retrieval. You would think that a coin in the dirt would stick out like a sore thumb, but on the contrary, they are usually quite difficult to find. Without a pinpointer, you're going to be waving random handfuls of dirt across the top of your coil until you hear a beep. Once you hear a beep, you'll have to pour half the dirt out and repeat the process until you can see the target. This process is called "halving out."

HALVING OUT

Remember, the top of the coil is just as sensitive as the bottom. While halving out, you don't have to constantly pick up/put down your machine. Just kneel down, set your machine down next to you, grab handfuls of dirt, and wave them over the coil until it beeps. Until you actually look for a target, it's easy to think it'll be easy to find.

For nugget hunting, you'll spend all day sifting through a handful of dirt to find a nugget (they don't come out of the ground shiny and golden). Even coin-sized objects are difficult: They're the color of the dirt.

You can see how grabbing random handfuls of dirt and then halving them until you find your target can be frustrating and time-consuming. The pinpointer speeds up the process tenfold. The more targets you retrieve, the more successful you'll be.

Handheld pinpointers save you time by locating targets quickly and minimizing the potential of damaging your finds.

There are a few different brands of pinpointers to choose from, so make sure you choose one that suits your needs. If you hunt in the water or in wet environments, you'll want to get a waterproof version. Most pinpointers operate in an all-metal mode, although there are some specialized pinpointers that utilize your detector's electronics in order to obtain discrimination. Having a pinpointer with discrimination capabilities can be very helpful in areas with a high concentration of targets.

To use your pinpointer, hold it away from metal objects. Turn it on and probe the area you suspect your target to be in. Most pinpointers will make a sound and vibrate when your target comes within a couple inches of the probe. As you get closer to your target, the pinpointer's sounds and vibrations will intensify. If your pinpointer doesn't make a sound, you might need to dig a little deeper or widen the hole. I've had days in the past when I forgot my pinpointer. I've also had days when my pinpointer ran out of batteries. Those days usually resulted in multiple and frequent outbursts of profanity followed by some sort of accidental self-mutilation. Consider a pinpointer a necessity. Spare yourself some agony and get a package deal with a pinpointer included when you purchase your next machine. You'll thank me later.

TRASH POUCH AND TOOL BELT

I categorize the trash pouch and tool belt together because typically, it takes a belt to hold up all that trash. While you've got a belt on, why not accessorize it until it looks similar to the Bat Belt (Batman's belt)?

Trash pouches on tool belts are a great way to store your unwanted garbage and your tools.

The trash pouch is another necessity. It's the only thing that actually makes us look good in the eyes of the public. Like we're doing something important for the environment, because technically, we are! So strap that trash pouch on your Bat Belt and do your part! Make sure it doesn't have any holes in it either. I hate walking in circles digging out the same targets because they're falling out as fast as I can put them in. One of the other important reasons to remove the trash targets is because they could be masking a great target that you would otherwise walk right by. You never know what could be hiding behind that beer can. In December 2014, I unearthed a super rare, 1901 S Barber Quarter that was right underneath a tarp rivet. Had I not removed that tarp rivet and double-checked my hole, I would have missed out on a $6,500 quarter!

Your tool belt can also hold a pinpointer, Lesche tool, and GPS.

YARD NAP

A yard napkin (nap) isn't for when you decide to pass out on the front lawn. It's actually a simple piece of cloth, handkerchief, or cut-up plastic shower curtain used to keep your mountain of dirt from making a gigantic mess on someone's lawn. When you remove dirt from the hole in an attempt to find a target, it's always best to lay down a yard nap to keep that dirt in order. When you're done retrieving the target, just pick up the nap and dump the dirt back in the hole. It really helps to keep things nice and tidy. The key to obtaining permissions (and keeping the ones you have) is to be as respectful to the property and its owners as humanly possible. The yard nap is just another way to show off how good you are at what you do.

ROOT CLIPS AND SAWS

Root clips (left) and hand saws (right) can help you navigate troublesome growth when retrieving targets.

In some parts of the country, the ground is absolutely infested with tree roots and other pesky vines, making it damn-near impossible to get anything out of the ground. Most of these places are in the wooded areas of the Northeast. If you happen to live in an area with similar conditions, I would highly recommend buying a pair of gardening shears/clippers or a folding serrated blade. Do your best to clear what you can out of the way and then use the clippers to cut the obstructing roots. Try not to get too crazy though. We don't want to kill a tree at the expense of retrieving a coin.

Once you've removed the target, do your best to replace the roots the way you found them. They might actually grow back together. *Pay close attention to what you're cutting!* It's easy to misidentify a dirty, gloved finger for a tree root. Finding yourself minus a finger in the middle of the woods is seldom a fun experience and can often lead to a predicament involving bears. Other things to be wary of: poison ivy, poison sumac, and poison oak. On one occasion, I was hunting in New England during the peak of poison ivy season. I found myself cutting through roots and not paying attention to what type of roots they were. Needless to say, I acquired a horrendous case of poison ivy. It was so bad that it covered 25 percent of my body for the three-month duration of my steroid treatment. If you're immune to it, congratulations—I hate you.

PROSPECTING PICK

If you're metal detecting for gold nuggets, you're going to need a pick. Gold is heavy—very heavy. It's kind of like you after a couple of drinks; it likes to get down. Usually, when you're pursuing gold, it means digging deep for it or chipping it out of something that's harder than the back of your head. Even small flakes of gold will be resting on bedrock or a layer of hard ground (false bedrock).

A good prospecting pick can take a lot of the backache out of retrieving that monster nug. It should have a good, strong hickory handle long enough to swing with some authority, but short enough to pack around in comfort. It should also have a spot dedicated to storing a rare earth magnet. A prospecting pick without a good magnet is like sex after 80—sure, you can do it, but why would you want to?

Prospecting pick with rare earth magnet attached to the bottom of the handle.

You see, most gold machines are all-metal machines. A fast way of checking for ferrous material is to shove an incredibly strong magnet down in the hole. Check the magnet to see if anything is stuck to it, and then re-scan the hole for the signal. Chances are, you'll see a piece of iron on your magnet and the signal in the hole will be gone. But if you don't see a piece of iron on the magnet and there's still a signal in the hole, you can start getting a little excited.

Using a strong magnet helps to quickly retrieve ferrous garbage like boot tacks, nails, and other iron trash left over from the Gold Rush miners. The majority of your targets (and that's an understatement) while nugget shooting will be ferrous garbage. Attempting to retrieve all of these targets by halving out would take way too long. Most top-end PI and ZVT prospecting metal detectors lack the ability to discriminate and will detect all metal.

High-frequency VLF detectors with iron discrimination are a great choice for areas containing high volumes of trash; however, high-frequency VLF machines lack the depth of PI and ZVT detectors and can struggle in highly mineralized ground (hot ground). If you decide to use a PI or ZVT machine, think of that rare earth magnet as a poor man's discriminator. As with all other types of detecting, the more targets you can retrieve, the better your odds will be of finding valuables.

NUGGET SCOOP

Nugget hunting is quite a bit different from coin hunting. The pinpointer, which is great for coin and relic hunting, isn't ideal for nugget hunting. Roughly 99.9 percent of all gold nuggets are smaller than half a grain of rice. Pinpointers just aren't sensitive enough to consistently and quickly find small gold nuggets. Instead, we use a nugget scoop to locate those pesky lil' nugs. A nugget scoop is a plastic scoop. It can be a nice scoop that you picked up at the prospecting store or as simple as a measuring cup, plastic ladle, or anything else non-metal that retains a scoop-like shape.

Plastic nugget scoop.

To use the nugget scoop, you need to find the general area of your target. Scoop up some of the dirt that you think might contain the target. Now give the scoop a little shake. This should help the target settle to the bottom of the scoop. Remember that strong rare earth magnet I was talking about earlier? Get it out and run it along the bottom of your scoop from back to front. What you're trying to do here is get any bits of iron garbage to follow that magnet clear out of the scoop. This will save you from wasting time on the next steps.

Next, wave the scoop over your coil. Did you hear a signal? If so, pour half of the dirt into your other hand and wave the scoop back over the coil. If you hear a signal when you wave the scoop over the coil, repeat the process until you can see your target. If you don't hear a signal when you wave the scoop over the coil, get rid of the dirt in your scoop. You should still be holding a handful of dirt in your other hand. Wave that fistful of dirt over your coil. It should make a sound. If it does, pour half of the dirt into your scoop and keep the other half in your hand and repeat the process. Halving out is just a process of elimination by cutting the material in half over and over until you have your target. It seems like a pain, but you'll get pretty quick at it after some practice. Sometimes you'll get lucky and see the nugget in the scoop after a few divisions, but for the most part, the gold is about the size of a grain of rice (or even one-quarter of a grain of rice) and is covered in dirt.

Gold doesn't usually come out of the ground "golden"; it's often pretty well-disguised. In most cases, you'll literally halve out until there are two or three grains of material in your scoop.

SAND SCOOP

The sand scoop is a necessity if you're planning on beach hunting. There are handheld versions and full-length versions, but both have the same basic design. They utilize a scoop on the end of a handle. The scoop is generally made out of some sort of perforated material, usually aluminum or PVC. The idea is to scoop up some sand and let the scoop act as a sifter. The sand will pour out of the perforated holes and the target will be left inside the scoop, provided the target won't fit through the holes. I prefer the long-handled scoops because I'm lazy. It's faster and easier to retrieve targets without having to kneel down or bend over. Jewelry hunting is a numbers game. The faster you can get targets out of the ground, the more targets you'll dig. The more targets you dig, the better your odds will be of nabbing something like a gold ring.

If you decide to make your own sand scoop, the holes should be slightly smaller than a dime. This will allow you to keep most US currency and most rings. If you plan on detecting in the surf or in the water in general, you're also going to want to make sure your super-duper treasure scooper is brightly colored and buoyant enough to float.

When detecting on sandy beaches, the long-handled sand scoop is the fastest, easiest way to retrieve targets.

COIN KEEPER

Some of the coins and other relics you find can be worth a substantial amount of money if they're in good condition! Don't risk potentially losing thousands (yes, thousands) of dollars because you threw your extremely rare coin in the mix with all the other sharp, gritty, scratchy garbage you dug. I highly recommend keeping all of your coins in an isolated, protective case or sheath until you can prove they're not valuable. I personally use an empty pill bottle stuffed with cotton balls. I sandwich each coin in between the cotton balls so they don't rub on each other. I had my wife and son decorate the pill bottle for good luck. So far it's held thousands of dollars' worth of coins and small artifacts. Safe to say it's brought me a fair amount of good luck!

The author's personalized coin keeper.

KNEE PADS

Although I don't personally use them (yet), I can see how knee pads would be practical for people with bad knees or for retrieving targets in environments with sharp rocks, etc. Keep knee pads in mind for these types of areas. Make sure your knee pads fit properly and don't cause chafing. Injuries to the back of the knee/leg are far more painful and debilitating than a few scrapes to the front of the knee. Developing abrasions to the back of your leg to protect the front isn't a fair trade-off. The risk for these types of injuries increases as the temperature rises. So if you feel like those elastic knee straps are getting sweaty and starting to rub you the wrong way, ditch them ASAP!

SNAKE GUARDS

Snake guards can cause some of the same problems as knee pads with regards to chafing; however, snake guards are actually worth the trade-off. If you plan on detecting anywhere with venomous snakes, it's a good idea to bring some snake guards along. Metal detecting around venomous snakes is extremely dangerous. You should always scan your surrounding area for movement and, if you have an external speaker on your detector, use it! Using the external speaker will allow you to hear any warnings from potentially lethal rattlesnakes that you might not have heard with your headphones on. Be careful when kneeling down next to bushes, logs, sage plants, and other places snakes like to hang out. If you have to retrieve a target next to an obstruction, whack it with your coil a few times in an attempt to scare out potential critters. Being bitten by a snake hundreds of miles from nowhere in the middle of the desert sounds like an awful way to die. So let's try to avoid that.

GPS

A good GPS unit is worth its weight in gold. It not only keeps you from getting lost but helps get you where you're going AND remember where you've been. When researching old ghost towns and other locations in remote areas, a GPS unit will allow you to pinpoint your location of interest and set a course for it. I can't begin to tell you how helpful it is to be able to get to a location that you've never been to without having to rely on outdated maps and poor directions from the local yokel. A GPS is also extremely useful when hunting large areas. Marking waypoints to save the location of your finds will help you narrow down points of interest, or "hot spots." New GPS units also leave a virtual breadcrumb trail to show where you've been. This helps immensely when gridding (see page 37) large areas and prevents duplication of effort. In other words, it allows you to see where you've already detected.

Modern handheld GPS unit.

Once you've spent some time detecting and saving points of interest, you can upload the GPS information directly to your computer. This will give you a better opportunity to look at the area you've covered and its points of interest. It will also allow you to save the information for later use. I personally use the Garmin Oregon 600. It has some features that I find hard to live without, like topographic maps, waterproofing, satellite imagery, GLONASS satellite positioning, and is accurate within 3 meters so that if I save a find point on the GPS, it will guide me back to within 3 meters of that location.

Do some research to find out what works best for you. Some new metal detectors, like Minelab CTX-3030, the Minelab Go-Find series, and Minelab GPZ 7000, have integrated GPS or smartphone app integration that allows you to track and record not only your location but the TID, tone, and depth of the target when you found it. The more data you have to analyze, the more successful you'll be. The easy pickins have already been hunted out. Our search for treasure is getting harder and taking us farther into the unknown than ever before. Know how to get there and most importantly, how to get back! Even with a nice GPS unit, it's always a good idea to have an up-to-date map and compass for backup.

HYDRATION PACK/BACKPACK

Stay hydrated and keep spare items/clothing in a sleek hydration pack.

If you plan on being out for an extended period, you should think about taking along a simple backpack with a built-in hydration system. This will ensure you have plenty of water and a place to keep some snacks and spare clothing. It's also a great place to stow your finds, GPS, sunscreen, and other miscellaneous items. I prefer a pack with both a chest trap and a hip strap. This helps keep the pack in place when you're retrieving targets and also comes in handy when you're attempting to climb Mount Everest with everything but the kitchen sink.

CLOTHING

Wear something that allows for a full range of motion and is adequate for the environment you plan to be in. Put on layers and bring different options along in case the weather changes. Materials that are water-resistant, water wicking, breathable, and have built in UV protection are ideal. I dress for practicality. As if metal detecting weren't sexy enough, one of my favorite fashion statements is something I refer to as "shants." These are some hideous but practical pants that zip off at the knees to miraculously transform into shorts. WARNING: Wearing shants in conjunction with using a metal detector can attract copious amounts of female attention and should not be done unless absolutely necessary. In the event that shants are used in conjunction with a metal detector, be prepared to spend most of your time being asked out on dates, handed casseroles, and being told about "my single granddaughter who hasn't had a baby yet."

SPARE PARTS

If possible, it's always comforting to have some spare parts for your detector. If you are 100 miles from home, one simple broken part can put you out of commission, ruining your whole trip. Two detectors are better than one, but in the event that Momma won't let you spring for a backup, here's a list of some spare parts that frequently have problems or get lost.

- Batteries
- Coil cords
- Coil covers (skid plates)
- Coil-securing bolts and grommets
- Extra digging tool
- Lower shaft replacement

GLOVES

When retrieving targets, it's important to protect your hands from sharp objects concealed by dirt. A nice leather glove or rubber-coated, cotton gardening glove can protect you from bits of nondetected glass and other nasty sharps. On one occasion, I was metal detecting at a fancy resort in hopes of finding some lost jewelry. Instead I unearthed a used hypodermic needle. Had I not been wearing protective gloves, I could have ended up with a potentially life-changing injury. I've also had some close encounters with poisonous scorpions and spiders while detecting the deserts of northern Nevada.

By now you should be geared up head to toe and you probably look like you're ready to take Normandy or possibly land on the moon. Remember, just because it's listed here doesn't mean you *have* to have it, wear it, or carry it all at once. These are just some recommendations that I have found particularly useful. Think about what type of detecting you'll be doing and accessorize appropriately.

CHAPTER 3

METAL DETECTING TECHNIQUES

Now that you've got your detector and all of those fancy tools, it's time to focus on some techniques to help you hone your skills. Initially, this chapter was going to be about finding places to detect and gaining permission, but what good would getting you onto those hot spots be if you didn't know what to do once you got there? So we'll address those items in the next chapter.

Before we get too involved in specifics, do yourself a favor and check to make sure you're not wearing steel toe boots, and take off any rings or watches that you might be wearing. These can get you all sorts of confused. I once chased a "target" for about 15 minutes before I realized I was chasing my boot.

There are many different ways to use a detector, depending on your environment, detector, and desired target. Here we'll discuss the proper way to swing that thing and get you accustomed to the do's and don'ts. Here's a recap on how to switch your machine on and get going. Remember, always read your metal detector's manual thoroughly!

1. Step away from metal objects and turn your detector on. In other words, step out of your vehicle before you decide to turn your detector on.

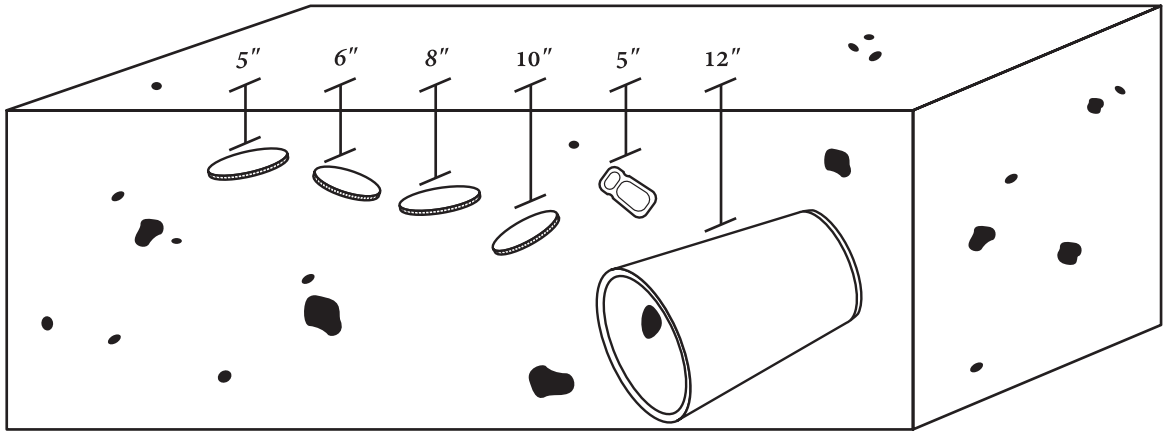
2. If your machine has the ability to cancel out EMI, follow the manufacturer's directions to select the quietest operating channel. If your detector lacks the ability to cancel out EMI, you're going to want to make sure you keep your distance from things like power lines, transformers, radio towers, jumbo jets, and anything else that makes your detector sound like R2-D2 on crack.

3. Find a piece of ground free of metal objects and perform a ground balance (page 18). Be sure to follow the manufacturer's directions. If this task is performed incorrectly, the only thing you'll find is disappointment.

4. Now fine-tune your sensitivity, threshold, volume, and anything else your manufacturer suggests.

ESTABLISH A TEST GARDEN

Every detectorist, novice or pro, should have a test garden. A test garden is essentially a clean piece of ground (free of unknown metal targets) where you've buried different targets at different depths for the purpose of testing your machine's performance under realistic conditions. It's important that, once buried, your targets' locations are physically marked so that there's no confusion. It's also helpful to record the items' description and depth for accuracy in future testing.



Example of a test garden.

For instance, you might bury a quarter at 10 inches, a nickel at 8 inches, a penny at 7 inches, and a dime at 6 inches. After you've gotten your test garden set up, practice locating the targets while experimenting with your machine's settings. Try to optimize the target response, paying close attention to things like your sensitivity, threshold, ground balance, and other settings. Also try experimenting with your swing speed. Note how your detector responds to fringe targets, or targets that are on the verge of not being detected due to their distance from the coil, and remember those responses. You might also bury some coins standing on their edge (straight up and down). The much narrower profile of a coin on edge is more difficult to detect because of the decreased surface area of the coin. Also, try burying some iron, coins next to iron, and other various bits of trash to better understand the way your machine responds to those items. This is also a great place to practice pinpointing with your machine.

SWING PATTERN

Your swing will depend on the environment, coil size, and detector type, but generally speaking, you should keep your coil in constant contact with the soil. Every inch above the ground you swing your coil is an inch in depth that you'll lose. Adjust your detector's shaft so that your coil sits level on the ground, about 8 to 12 inches in front of your feet.

Your detector most likely has a detachable skid plate fixed to the bottom of your coil. This is there to help protect your coil from abrasions. If you're just now noticing that your coil doesn't have a skid plate, I would highly recommend purchasing one for it. If you're not wearing through at least one skid plate a year, you're not keeping your coil in close enough contact with the ground. Be sure to remove your skid plate occasionally to clean out any dirt and grime. Concentrated amounts of mineralized soil trapped in between your coil and skid plate can cause false signals and affect depth.

REDUCING ARM AND SHOULDER FATIGUE

When holding your machine, keep your elbow in toward your hip and use your whole body to direct the coil. This will drastically help to cut down on arm and shoulder fatigue. If you plan on swinging for extended periods of time, it might be worthwhile to learn how to swing with your non-dominant arm. I would suggest practicing somewhere level with little to no obstructions. Detecting with your non-dominant arm can be extremely awkward at first and can result in you breaking stuff. If you thought you looked funny throwing left handed, wait until you see yourself detecting left handed. It's not ideal but it can mean the difference between a half or whole days' hunt. Switching arms might even save you from some serious chronic arm and shoulder problems in the future.

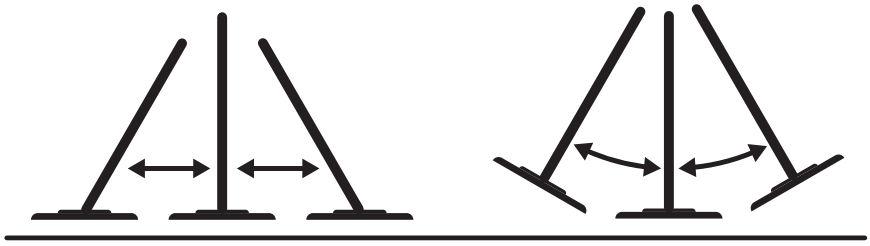
SWING SPEED

Some machines have faster processors than others. Typically the higher-end machines are able to process more ground, faster. Obviously, whipping that thing around at light speed won't yield great results in an iron-infested site, but if you've got a vast area of open space with few to no targets, a faster swing speed will offer you the ability to cover more ground in search for hot spots (places with tons of signals indicating substantial human activity).

Wherever you're swinging that thing, slow or fast, be sure to overlap your swings. Overlapping your swings will offer the greatest amount of coverage per footstep and ensure that you're not walking over items and missing them by mere inches. The two biggest mistakes I see beginners making are not keeping the coil to the soil and not overlapping. You can typically spot a newbie straight out the gate by how big of an invisible smiley face they're drawing with their pendulum-like swing pattern. It's the type of pattern where the coil swings from hip level down, making contact with the ground for half a second before swinging back to the opposite hip. Meanwhile, they've taken three giant steps, bypassing everything in between coil contact to coil contact. Don't be that guy! Keep the coil to the soil and overlap those swings!

When you're on a hot spot, *slow down*! Concentrate on really overlapping those swings. If you've got one, consider putting on your smallest DD coil. This will help you separate the signals and isolate the good targets from the bad.

Swinging Technique



The proper swing technique, pattern and speed will allow for the best ground coverage.

Some VLF detectors respond better to a faster swing. The faster swing speed on these single-frequency VLF machines can help gain extra depth and can oftentimes turn a faint, iffy signal into a screaming "dig me." While these machines might respond better to the faster swing, it's important to note that in areas of high target concentration, your swing speed should be slow. Once you've isolated a potential target, you can give the coil a quick wiggle back and forth over the suspected target in an attempt to get the signal to improve.

For all intents and purposes, there should be a direct correlation between your swing speed and the number of targets in the ground, the number of obstacles on the surface, and the type of machine you're running.

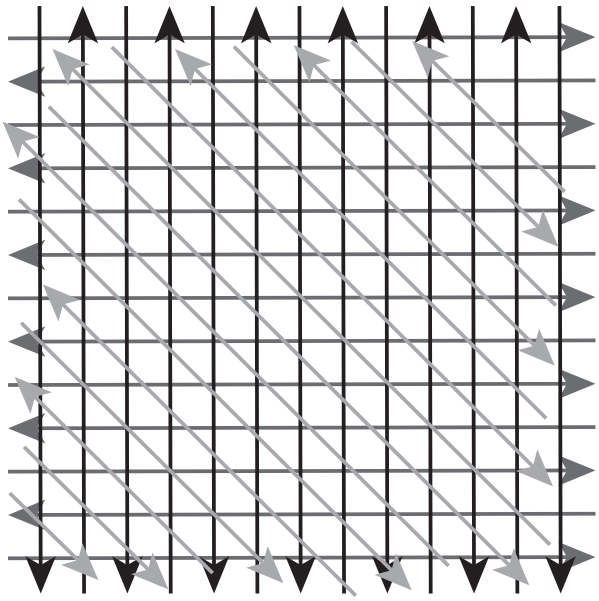
GRIDDING

Once you've found an awesome spot that has produced a couple of cool coins, relics, nuggets, or other treasures, you're going to want to grid the area for more. There are a few different methods to gridding, but all of them should essentially have the same end result—covering every square inch of high-yielding ground. This can be as simple as walking back and forth in straight lines while looking for your footprints or as precise as using GPS tracking.

Drag your feet. On the dirt, one of my preferred methods of gridding is to simply drag my feet, creating a very noticeable trail. This, however, isn't ideal if you (a) have crappy shoes or (b) are gridding a very large place. Believe me, if you have a large place to grid and you choose this method, you'll soon have crappy shoes (if you didn't already).

Drag a chain. An alternative method for gridding in the dirt is to get a piece of 8- to 10-foot rope and secure a few links of good, heavy chain to one end. Then tie the other end of the rope around your waist. When you start walking, the rope will drag behind you. The heavy chain link at the end of the rope will make a very defined line behind you. This is a great, hands-free way of gridding on a budget. Of course, this method also requires a little cooperation from the environment/terrain.

Use a GPS. GPS can be a seriously valuable tool when it comes to gridding. Some newer units have integrated GPS that will show you your tracks on the display in real time. Accuracy has significantly improved with the advent of combination GPS and GLONASS units and pinpoint accuracy is no longer an issue. Handheld GPS units can drastically change the way you hunt. I never leave home without mine. That being said, I've also ruined a lot of shoes by resorting to the old toe drag.



Gridding a site is the most effective way to maximize finds.

Grid from multiple directions. It should be noted that simply gridding a piece of ground forward and backward isn't good enough. You should hit it up, down, sideways, and diagonal, and then do it again in reverse. Some targets simply won't make a peep if approached from one direction, but will scream from another. This is usually because of the target's orientation in the ground and/or its relation to other targets in close proximity. Gridding the area from multiple directions will ensure you've given those targets ample opportunity to sound off. Some of the best things I've found have been targets that I've hit from the north, south, and east but didn't beep until hitting them from the west. If I had given up, I would have missed out big time!

PINPOINTING WITH YOUR MACHINE

It can take some time to get the hang of using the pinpoint function on your detector. Please, please, please do yourself a favor and practice pinpointing in your target garden or somewhere that isn't pretty and is preferably owned by you. This is the place where you can make some mistakes.

One of the pinpointing methods I use is what I call the "90-degree approach." After you've established that you have a target, engage your detector's pinpointer function. If it's like most pinpointers, it's what we call non-motion, meaning the detector doesn't have to be moving to acquire the target. Most machines use a small area of the centermost part of the coil (hot spot) as the pinpointer. As you get closer to the target, the signal and pitch get louder and higher. Once you've found the signal response with the loudest/highest pitch, your target should be underneath the coil's hot spot. Now, turn 90 degrees to the target and repeat, making a plus sign over the target. This pattern will help you narrow the target's location down to a smaller area prior to digging it out.

Another pinpointing method I use is called the "wiggle back" method. This requires a DD coil and doesn't actually use your detector's pinpoint function at all. Instead, once you acquire your target, simply wiggle your coil back and forth over the target, generating an audible response with each pass. While wiggling the coil back and forth, slowly bring the coil back toward your feet. Keep moving the coil toward your feet until the audible response stops, and then the target should be at the very tip of your coil. This method can take some time to master, but when perfected, it can be a little bit faster than using the pinpoint function on your detector.

DIGGIN' IT

T-Handle shovels, Lesche tools, spades, scoops, probes, and whatever other ground rippers you can come up with all serve one purpose—retrieving your targets in the most efficient way while preserving property. It's not rocket science, but let me walk you through my routine.

1. I start by using my machine to pinpoint the target to the best of my ability using either the 90-degree method or the wiggle back method.

2. I then take my T-Handle digger and cut a plug big enough to retrieve the target but small enough to minimize damage. Use your detector's depth indicator to assist you in judging the depth of the hole.

3. Once I've flipped the plug, I take a knee and whip out my handheld pinpointer. If you're on a well-manicured lawn, now would be a good time to bust out that yard nap. Then I circle the plug with the handheld pinpointer and listen/feel for a response. If my pinpointer doesn't indicate a target in the plug, I turn my attention to checking the hole.

4. If my target is in the plug, I carefully remove it and replace the plug. If my target is in the hole, I use my Lesche digger to carefully remove the object by digging around it until it's free. Take note of the object's depth, location, and orientation. Treat each item as a clue that points toward finding other items. After finding a few different pieces, the puzzle will start to come together, revealing a much more detailed analysis of who, what, where, when, and why.

5. I place the item (trash or treasure) in either my trash pouch or my coin keeper.

6. Last but not least, re-scan the hole for missed objects, fill your hole, replace the plug, comb the grass, and rake the dirt. Do whatever it takes to make sure the ground looks as good as or better than when you started and take measures to ensure that it will maintain that appearance, even after you're gone.

CHAPTER 4

HOW TO RECOGNIZE OLD PLACES

By now you're itching to actually get out and find some treasure. You've got a detector, some sweet tools, and a few hours of practice under your belt. But you're still missing the biggest piece of the puzzle: Where to go? If you're anything like me, you probably want to find the oldest, coolest stuff possible.

Finding old stuff should be easy, right? Just go to old places? If we were to break it down to the bare bones basics, yes, that's what you need to do. However, finding old places that contain old things is way harder than it looks on paper. Sure, you can drive around town and look for old houses, but do you know what "old houses" look like? Would you be able to tell the difference between a remodeled house built in 1880 versus a house that was built in 2015?

Now, don't get me wrong, I've found some friggin' sweet stuff hunting old houses, but if you want to get some seriously cool booty, you're going to want to learn how to find where old houses/towns *used to* be. And when it comes to tracking these long-standing locations where people have no doubt lost their coins and other valuables, the older the better.

Being able to predict the potential for finds and the types of finds you're most likely to dig will save you a lot of heartache and gas money. Knowing what you want to find and where it can (or can't) be found is invaluable.

In this chapter, you'll learn how to date houses just by looking at them, locate lost and forgotten homesteads and ghost towns, and utilize modern technology to help you get there.

IS THIS HOUSE OLD?

My career as a firefighter has given me a leg up in spotting old or potentially old structures. Most people wouldn't know it, but being able to identify key elements and structural components of buildings in a split second could mean the difference between me and the fellas walking out of a burning building alive or ending up going down in a burning ring of fire. Needless to say, we take our knowledge of building construction very seriously. Who would have ever thought it would help me identify some great untapped places to detect?!

Human shelters have been changing to adapt to our lifestyles ever since the first cave was inhabited. As we evolved throughout the centuries, our needs have changed and we have modified our shelters to accommodate them. The first shelter modifications where strictly trial and error as we were trying to figure out what materials were suitable and available to protect us from the elements. Once we got that nailed down, we started expanding the quarters to hoard all of our crap. We're one of the few creatures on earth with enough foresight to take (and store) things we don't need, thus requiring a spacious pad. Eventually, we got smart enough to build where it was convenient enough to hunt, gather, fish, and trade.

The trade part is where it gets really interesting, though. Instead of building things where natural resources existed in numbers large enough to sustain us, we started building where it was convenient enough for others to hunt, gather, and fish for us and then bring it to our doorstep where we could purchase it or trade for it. Bays, rivers, and other navigable areas made transportation and reception of trade items much more obtainable. Eventually, those areas got so populated we ran out of resources to build our own shelters. Building materials were harvested from afar and brought in. With the influx of population came new building techniques designed to sustain everyone *and* their comforts. Popular aesthetics combined with practicality began to establish predominant "styles" using specific materials per genre. Let's take a look at some of the more popular styles and techniques. Obviously, one could write an entire book on all the different building styles and techniques used throughout the world. For this particular book, we'll focus on mostly North American structures and materials.

MASONRY

Believed to be founded during the Neolithic revolution over 10,000 years ago, masonry is one of the oldest building methods we have. Since its inception, it has evolved to consist of several different materials made with varying techniques. Masonry can be divided into a range of different subgroups including but not limited to dry stack, stone masonry, brick and mortar, concrete masonry units (CMU), veneer, slip form, and rubble masonry. Some of these subgroups are specific to certain time periods while others are used simply because of the materials available and/or the available skill sets and tools.

DRY STACKING

An example of dry-stacked native stone in southeast Oregon. This was the entrance to the cold storage area in the back of a late-1800s store.

Dry stacking is the oldest form of masonry. The term "dry stacking" is derived from the fact that this method doesn't use a bonding agent (e.g., mortar, mud, clay, etc.). For obvious reasons, this technique doesn't allow for large, intricate, multistory buildings, but it can be quite effective for small four-walled structures, foundations, animal pens, and kilns. Places you'll most likely see this method include areas devoid of alternative building materials.

Deserts and other remote areas where lumber wasn't available forced the inhabitants to use what was available to them. Alternatively, areas such as New England had an overabundance of rocks that hindered farming operations. Lumber in

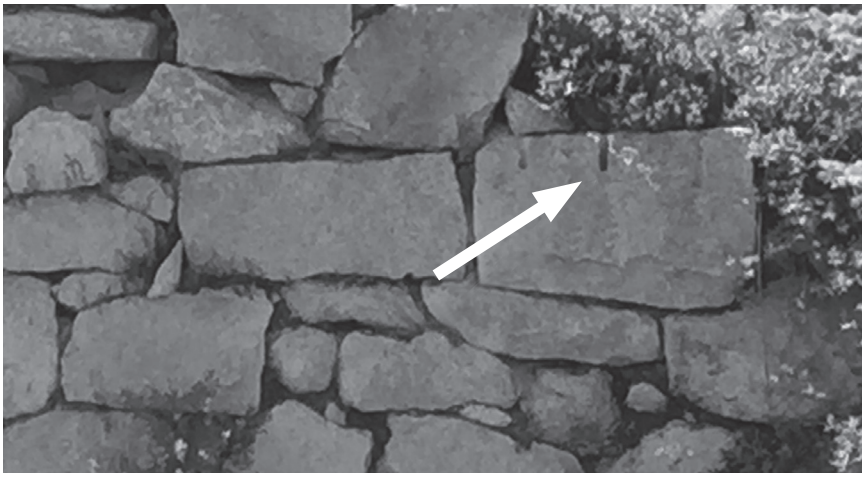
this area was prevalent, but the inhabitants opted instead to make use of the rocks removed from the farm fields to create animal pens and property dividers. To this day, hundreds of miles of these dry-stacked stone walls can be seen all across the Northeastern countryside. Detecting around the openings and passageways of these pens and property dividers can yield spectacular colonial era coins and relics. These areas are what I refer to as "high traffic areas."

This beehive kiln played a key role in refining metals used in Civil War weaponry.

Other, more skilled methods of dry stacking used actual hand-chiseled stone or clay-formed bricks to create more structurally sound formations. Skilled masons who applied these techniques opted not to use mortar simply because of the purpose of the structure. Most of these structures were high-temperature kilns used for smelting. Mortar would have disintegrated quickly under those conditions, leaving the kilns inoperable during frequent repairs. For some reason, in North America, the Italian masons where known for creating the nicest dry-stack kilns. Brick oven pizza, anyone?

STONE MASONRY

Stone masonry is one of the world's most prevalent types of masonry. This is primarily due to the fact that rocks are pretty easy to come by just about anywhere. Unfortunately, rocks don't come with a born-on date so we're left looking for construction methods to indicate a potential timeframe. Here are some things to consider when trying to date a stone structure:



Drill marks from quarried stone.

Are the stones cut and shaped or natural? If they're cut and shaped, look for hand chisel marks versus marks that are machine cut. Hand chiseling leaves multiple, small marks on the stone where the worker chipped away flecks of the stone until it took on the desired shape. Machine-cut stone is much more precisely angled, with clean cut lines. Occasionally, they'll display circular markings on the surface of the cut. This would indicate that a spinning circular blade was used for the cutting.

The ruins of a stone structure in northern Nevada using native stones that are found in close proximity.

Were the stones shipped in? Take a glance around. Does the stone used on the building resemble any of the stones laying on the ground? Is there a quarry near by? If it's not local stone, look at the size of the individual stones and the overall size of the structure. The size of the stone and structure can indicate whether the foreign stone was brought in on rail/truck or horse and carriage. The use of large, foreign stone would have used considerable resources and cost a ton of money to bring in via horse and carriage. If you're in the boonies with nothing around, it's unlikely a person with those means would build the Taj Mahal in the middle of the boondocks.

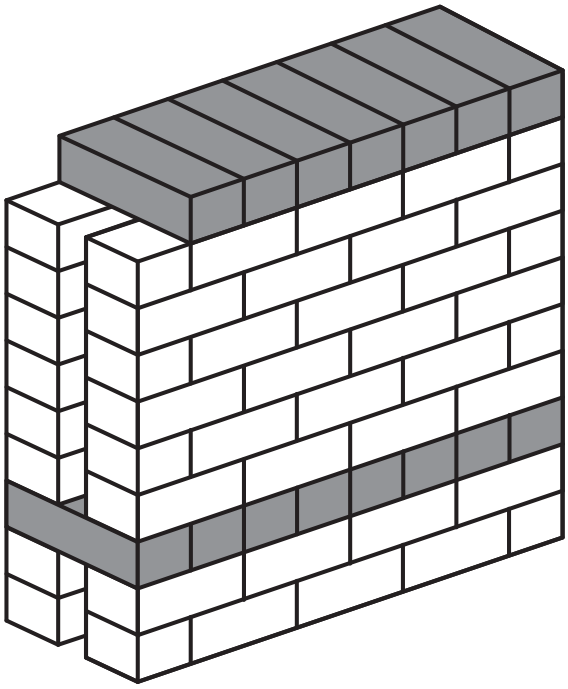
Take a look at the integrity of the mortar. Is it white and powdery? Does it crumble with the slightest scrape from your fingernail? If so, it's either over 80 years old or was poorly mixed. If the mortar is sloppily applied and the stones don't seem to have any uniformity or eye appeal, it's likely built after 1920 using a method called slipform masonry, a technique that uses hollow, wooden forms filled with alternating layers of stone and mortar. Once the mortar has cured, the forms are removed, revealing a perfect stone masonry wall.

BRICK AND MORTAR

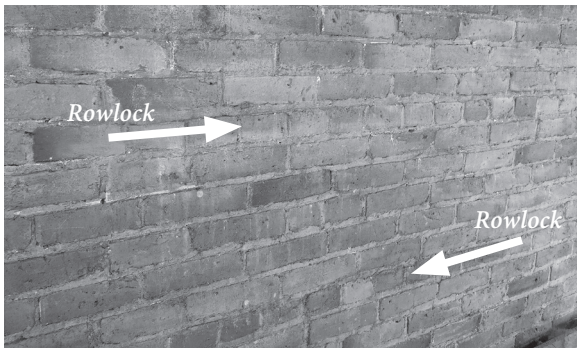
Brick and mortar is one of the most structurally sound construction methods of all time. So much so that several brick and mortar buildings/structures over 2,000 years old are still occupied and used regularly today!

The building techniques surrounding brick and mortar masonry haven't changed much. Rows of brick (courses) are interlocked using mortar (joints) in a staggered "one on top of two" fashion, creating an interlocking system.

To the layperson, brick buildings all look the same, but to the trained eye, a wealth of info can be obtained from that crusty, old brick wall. One of the biggest things you can look for? Rowlocks, or headers.



Rowlocks (bottom gray area) and headers (top gray area)



Rowlocks shown in a brick wall.

These are only used in load-bearing brick structures (non-veneers). A brick veneer, on the other hand, only serves as a decoration attached to the actual load-bearing wall. When looking at a solid, load-bearing brick and mortar wall, what you're actually seeing is in fact two (or more, depending on the height) brick walls built a couple inches apart. Every sixth or seventh course, the walls are tied together by laying a course of bricks small side out across the top of the two walls to be joined. That course—you guessed it—is the aptly named "rowlock," also known as the "header" because, well, the head of the brick is showing instead of the face.

Solid masonry construction is very costly and labor intensive. It also lacks the elasticity to flex under lateral forces and doesn't perform well in earthquakes. As a result, solid brick and mortar structures started going out of style in the early 1900s. The 1906 San Francisco Earthquake and Fire helped reaffirm the need for improved and more flexible designs. Architects of the period began to gravitate away from solid brick and mortar structures in an effort to improve building integrity while cutting down on cost and labor. By the 1950s, solid brick and mortar designs were few and far between. Nowadays you'd be hard-pressed to find modern solid brick and mortar designs.

Next let's take a look at the bricks themselves and some of the other masonry-related components that can help date a building. Before the late 19th century, most, if not all, bricks were heavy, solid chunks of fired or sun-baked clay. Then, we

discovered we could save on raw production materials, decrease firing time (and the amount of fuel needed to fire), decrease shipping weight, and increase structural integrity, all by simply adding three or four holes to accommodate reinforcing the bricks.

If you're out hunting and you happen across some solid bricks, you can almost certainly bet the building was built before or around 1900.

Modern brick

Steel masonry reinforcements.

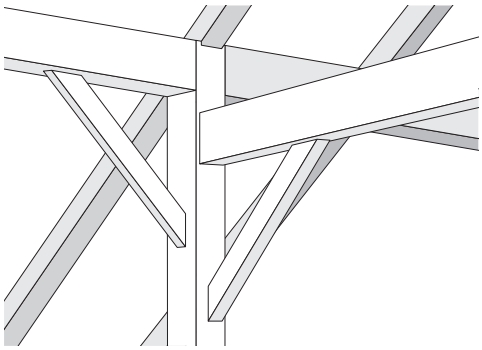
However, solid bricks are still being made as end caps and pavers, so it's important to investigate further instead of relying solely on a brick or two. While you're ogling that brick, be sure to look for a manufacturer's name stamped into the face. If you can obtain a manufacturer's name, you can do a quick Google search and find a date range of their operations.

If the building is still intact, look for signs of significant aging of the brick and mortar. After the better half of a century, brick and mortar began to need reinforcements. The popping and spalling of the bricks and the rotting mortar of the joints become an issue to the integrity of the older structures. Masonry reinforcements come in the form of iron stars, plates, and bars. Some are more decorative than others and will blend in with the building. Others are more blatant attempts at holding a dilapidated building together.

CMU

Concrete masonry units are essentially big bricks made out of concrete with two giant holes in them. They were invented around 1882, and by 1900 they were being manufactured in mass quantities by commercial machines. They're laid in courses like bricks are, but that's the extent of the similarities. CMUs, or "blocks," are designed to be reinforced by vertical and horizontal steel bars. About every 4 feet up, the blocks get stabbed with rebar and pumped full of grout. The walls are allowed to dry and the next courses are laid on top of the filled, dried block wall. The addition of rebar provides flexibility and tensile strength and allows the height of the building to be increased substantially while withstanding greater lateral forces. The big takeaway from this—if the structure has a CMU foundation, walls, or a chimney, it was *definitely* built after 1882, but most likely, it was built after 1900.

FRAMING



Wood framing

Wood framing can be broken into two main categories: heavy frame and light frame. Heavy timber uses unconventional lumber that has been hand cut and planed to serve its individual purpose in that particular structure. The name "heavy frame" comes from the actual dimension of the lumber as compared to today's dimensionally challenged, milled lumber. These large timbers were assembled in a post and beam fashion and were held together by mortise and tenon joints that look a lot like interlocking fingers fastened together by wooden pegs.

This construction method was extremely labor intensive, required large dimensions of lumber, and required a skilled framer to construct it. That all changed with the invention of the water-driven sawmill in the early 1800s.

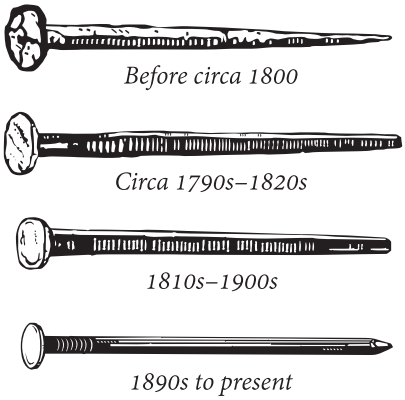
The use of the circular saw meant standardized sizes (rough cut at first) of lumber could be churned out and easily transported to construction sites. Although the new dimensions of lumber were far smaller in diameter and lighter than the previous hand-fashioned components (hence the name "light frame"), the lumber was still extremely long in comparison to today's standards.

One of the biggest pluses to the new lightweight lumber—it didn't require the use of mortise and tenon joints to connect components. Enter the machine-cut nail, often referred to as a "square nail." With a wagon full of lumber and a pocketful of nails, the average Joe could frame up a homestead in no time flat. The new construction materials and techniques weren't an instant hit, though. The new, flimsy-looking components earned the name "balloon frame construction" because people often thought the structure would fly away with a good gust of wind.

Classic balloon frame–constructed house. Note that all the doors and windows line up vertically and are the same width.

Balloon frame construction became increasingly popular throughout the mid-1800s, and by the late 19th century, it was accepted as common practice and was even the preferred method in the West. But by the early 1900s, big timber was becoming sparse. Balloon framing in the US started tapering off in the 1930s and was abandoned for the modern platform framing construction of today. Many of these balloon frame structures are still standing and are easily identifiable by the uniformity of the doors and windows. The dead giveaway? All the doors and windows line up vertically and are the same width. This is because the longer dimensions of lumber from that time period meant that each stud could run all the way from top to bottom.

Balloon frame construction was problematic when it came to fires. A fire in the wall on the ground floor could easily travel the length of the wall and into the attic where it would often result in a total loss.



Before circa 1800

Circa 1790s–1820s

1810s–1900s

1890s to present

The machine-cut, square nails that provided fastening for these early structures will most certainly cause you headaches, but they can also be a great indication as to the time period of the structures. Although square nails are still made today, the vast majority of structures only used them up until the mass production of wire nails in the mid-1890s. Here's an image of some nails to help you put a date on things in the field.

OTHER STYLES AND THINGS TO LOOK FOR

Second Empire style of construction.

In North America, some of the more popular building styles during the 18th and 19th centuries were the Second Empire French designs, and later on, the Queen Anne designs. The Second Empire designs featured the appearance of rectangular or circular tower-like structures accompanied by a mansard roof. The towers could be the same height as the adjoining floors, or sometimes, one to two stories higher, featuring lightning rods that tied into the iron mansard roof cresting.

Queen Anne style architecture.

The Queen Anne designs in the US from about 1880 to 1900 feature a cylindrical tower, usually in the 90-degree angle of two rectangular adjoining structures. They almost always have an elevated front porch that encompasses the full address side of the building. The bohemian architectural movement of the time called for intricate trim, wooden side shingling, and gable decorations.

Queen Annes are some of the my favorites to hunt because the timeframe puts them in the right date range for key date coins, and the people that owned those homes usually didn't have any shortage of money to lose.

One of the first things I look at when trying to date a structure is the chimney. For some reason or another, when people make improvements to their houses, they usually don't think to update the chimney. It's not uncommon to see a home built in the 1880s updated with vinyl siding, double-paned windows, a new roof, and modern heating/HVAC, but nine times out of ten, that old chimney will stick out to you like a sore thumb. With its dilapidated joints and leaning to one side, it probably even has a few bricks around the top that are more or less just sitting there because the roofers knocked them off when they put that shiny, new roof on. Most people that ask permission to detect on old properties miss these gems because they're so cleverly disguised, but if you're paying attention, you can score some sweet goods on those virgin yards.

Another great indication of an older house is exposed rafters under the eaves. This was a very popular style of building up until around the 1940s, or the era of the so-called "American Craftsman." The economic boom that followed WWII meant that people had more money to lose. Houses built in the early '40s are great places to hunt for silver coins. Although the coins won't be of any significant age, they'll still be silver!

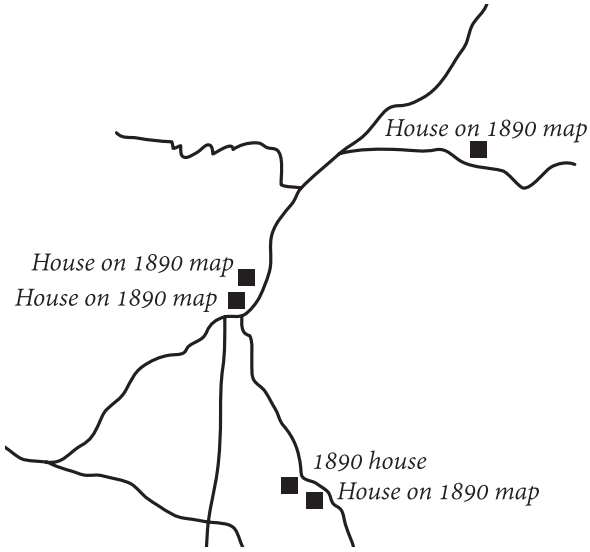
Houses with exposed rafters under the eaves. Landscapes surrounding these types of buildings are great places to find silver coins!

All of the houses described thus far should be good candidates for silver coins. In the US, silver coins were mass produced up until 1964. Houses built before then, if you can identify them, all have potential for hiding silver coinage. Here's a secret: If you're unsure about the age of the house/property, Google the address. Typically, a real estate website like Zillow or Trulia will show up. Zillow, Trulia, and many other websites will list the "year built" in the description of the address you've searched. This can be a good way to search for the older properties in neighborhoods of interest.

A Depression-era home in the middle of a remodel. Note how the chimney's condition remains untouched.

HISTORIC MAP OVERLAYS

The Internet is my number one resource when looking for places to detect. Websites like HistoricMapworks.com can provide you with detailed historic maps of your area. In other cases, you might have to use the archives at your local university. I use the digitized historic maps to provide an overlay on top of the satellite imagery provided by Google Earth. Using the transparency function on Google Earth's toolbar, I can then toggle between the historic map and the satellite imagery, revealing where old towns, homesteads, hotels, stores, stage stops, etc., were in relation to today's topography. I mark all the potential sites I've found with waypoints, or "pins," in Google Earth and then I import the waypoint KML files into my handheld GPS unit.



Waypoints marked on map.

Once I've got the coordinates loaded into the GPS, it's just a matter of physically getting to the site.

Before you just show up and start detecting, you're going to want to make sure you're allowed. Be sure to research your local rules and restrictions regarding detecting in the areas of interest. If the sites you're interested in are on private property, you're going to need permission. I use a couple different resources to find out the current status of land ownership. The first is ReportAllUSA.com/map. Use this website to zoom into points of interest to reveal information on land ownership. The second is a mobile app version of the same thing (iOS only) called LandGlide. These sites/apps will tell you if it's Bureau of Land Management (BLM), forest service, or private property. In the event the land is privately owned, ReportAllUSA.com and LandGlide will provide you with the current owner's name.

If the property is unoccupied, a quick Google search of the landowner's name and the county or state you suspect them to be residing in will usually turn up either an address or a phone number. So suck it up and put on your game face—it's time to convince a total stranger to let you metal detect on their property.

CHAPTER 5

GETTING PERMISSION

In all, 99.9 percent of my metal detecting takes place on private property, and there are a few good reasons why. My number one reason might surprise you: antiquities laws and other government regulations. You see, if you find something awesome on public lands, there's a really good chance you won't get to keep your find and an even better chance that you'll have to pay some sort of fine for disturbing endangered snail habitat or something else ridiculous.

The second reason I prefer private property is simply because most of the public places worth hitting have been pounded to death over the past five or six decades. The once-fruitful public honey holes are all dried up. Private property gives you better odds of finding keepers and keeping finds. Unless you own a buttload of private property worth detecting, you're going to have to knock on some doors and sell a stranger on why they should let you retrieve targets on their nice, manicured lawn.

In this chapter, I'll share my secrets to gaining access to the goods. It's never easy. But, if you follow some of these simple tips and strategies, we'll have you getting the "go ahead" on about 80 percent of your attempts.

Be selective. Up your odds by taking the time to look around. If you're doing online research or just driving around looking for old properties, take a look at the property itself. Note: Be sure to use both satellite imagery *and* street view if online. Is the property well kept? Or does it look like someone's running a hillbilly recycling center on the front lawn? Are the weeds too tall to justify swinging through? Are there "No trespassing" and "Never mind the dog, beware of the owner" signs posted everywhere? Topography should also be taken into consideration. If you're in less-than-perfect shape and you don't feel like hiking up steep terrain all day, take a pass. If it's old but doesn't look like it would be an ideal environment to sort through, keep it in the back of your mind and save it for a rainy day (figuratively speaking). You can always come back to those properties in times of desperation. It's all about odds. What can *you* do to increase *your* odds of finding stuff without wasting time and money?

INTERNET RESEARCH

Here's where it gets a little creepy, but stay with me. Using websites like ReportAllUSA.com and apps like LandGlide, you can find out who the property is owned by. After you've found the property owner's name, do a Google search, including the owner's name and address. For this example, I'll use a fake name. Go to Google and type "Bob Smith, 1234 1st Boise Idaho 83734" in the search field. The search results can vary depending on how common the person's name is, but generally speaking, by adding the address to the search you'll come up with info on the individual you're searching for. Things like Facebook pages, employers, newspaper articles, awards, donations, clubs, arrest records, and all sorts of other information are readily available. Getting creeped out yet? Try your name and address. There's a reason why they call it the information age. Using these resources you might find out that Bob Smith works at the gym that your buddy goes to and that Bob likes to dabble in fly fishing, a hobby that you also enjoy. You might ask your friend that goes to Bob's gym if he knows Bob and if he might be able to introduce you. You get a meeting with Bob after your friend breaks the ice and after talking a little bit about dirt fishing (metal detecting), you explain to Bob that it's kind of like fly fishing.

See what we did there? We used some simple research to find some common ground. Once you do a little digging on the Internet, you'd be surprised how many people you know by proxy. It's like playing that Six Degrees of Kevin Bacon game. Some of you might think this technique is a little shady or dishonest, but really, all you're trying to do here is find a way to break the ice. Preferably, have someone else break the ice for you. It's always best to be introduced by a friend, *as a friend*. It helps to take some of the distrust out of the equation. It's like going to a job interview with a letter of recommendation and knowing that your potential boss likes donuts as opposed to showing up unprepared and without donuts. If it's an awesome property that you've deemed full of potential, do your research and give yourself a fighting chance. You only have one. At the same time, don't overdo it. You don't want to creep Bob out by showing up on his doorstep wearing his favorite team's shirt and alumni hat, blasting his favorite album from your car while holding a fly rod. Use some common sense, ya dingus.

Like I said, you might be thinking this method is a little dishonest, but it's actually for your safety. I can tell you from experience, some doors just aren't worth knocking on after you see that the owner has been convicted of molesting an unsuspecting detectorist attempting to gain permission to detect their yard. You can thank me later.

For now, we'll focus on obtaining permission. Things like who gets to keep your finds and other "what ifs" will be discussed in detail a bit later.

YOUTUBE APPROACH

The YouTube approach works really well, but you'll need to have actually filmed a dig or two and posted your videos to a social media site like YouTube. It doesn't have to be a major Hollywood production. In fact, most smart phones these days have the ability to shoot decent footage and upload the video directly to YouTube straight from your phone.

Here is a GoPro Hero4 Session mounted to my detector via a flexible grip mount.

For the more artistic folks, there are plenty of fancy POV (point of view) HD (high-definition) cameras available to film your adventures. I personally use GoPro cameras to do the majority of my filming. They're small, waterproof, and tough as nails with great image and sound quality and ample battery life. Plus there are ample ways to attach it to you or your detector. If you choose to use a digital video camera, like a GoPro, the footage will need to be imported into a software-based editing program on your computer. Most computers these days come with a basic video editing program that is very

user-friendly, but there are plenty of aftermarket programs to choose from that offer more options in the way of professional quality video production.

Video production software is constantly evolving. Whatever program you choose, just make sure it meets your system's minimum operation requirements. This will require actually reading the box that the software comes in and then cross comparing the requirements with your computer's hardware and operating system. Just ask the guy at Best Buy if you're not sure.

Seriously, though. It doesn't have to be complicated if you don't want it to be. Be creative. Find cool stuff and point your video camera at it—and make sure it's rolling! For some examples of metal detecting videos, go to www.YouTube.com/Dr.Tones24k. But I'm no Steven Spielberg, so lets get back to gaining permission using your feature presentation. My YouTube pitch goes something like this:

> "Hi, my name is Brandon and I run a popular (moderately popular) Internet-based treasure hunting series called *Dirt Fishin America*. It follows me and a couple of my buddies around the world in search for lost or hidden coins and artifacts. We were in the neighborhood and couldn't help but notice your property meets our criteria and might in fact have some cool coins and other doodads worth preserving. Here are some of the things we found at Hal's place across the street. (Show off some finds.) If you'd be interested at all in letting us do some detecting today, I can show a quick clip of us in action to give you a better idea of what we do, how we do it without wrecking the yard, and why we love to do it."

Be ready with one of your videos cued up on your phone or tablet. Make sure it's one that shows you finding something cool and also, how well you preserved the property. Be sure to stress that the video is something they can show their friends and family and that it's something they'll have for years to come.

The best thing about the YouTube video approach? You have the ability to grow your YouTube subscriber base by posting your videos on different treasure-hunting social media sites like Facebook's metal detecting group pages and other online metal detecting forums (e.g., Treasurenet.com, Findmall.com, andMetalDetectingForum.com).

Once you start getting a few people tuning in regularly to watch your videos, you'll start to develop friendships with other diggers. This can lead to being invited to detect with other people all over the world in excellent locations where permission has already been procured! Just be prepared to pay it forward by inviting them to some of your sites as well. It works both ways! You should also use these meetups as an opportunity to show off your stellar metal detecting ethics and encourage others to follow the same property-conservation techniques.

ARTICLE APPROACH

One of the most successful approaches to gaining permission has been what my buddy Eric Magnuson (a.k.a., Dirt Digler) and I call the "article approach." This is an excellent means of securing permission; however, it does take some devotion in the form of actually writing articles for treasure-hunting magazines, blogs, and historical society newsletters.

Some popular treasure-hunting, prospecting, and coin-collecting magazines include *Western & Eastern Treasures*, *American Digger Magazine*, *Lost Treasure Magazine, Gold Prospector Magazine, Coins*, and *Coin World Magazine*, just to name a few. The majority of these magazines can be found in the hobby section of your local bookstore's magazine racks.

There are also plenty of metal detecting forums that allow treasure hunters to post online articles about their finds and experiences. Treasurenet.com, Findmall.com, and MetalDetectingForum.com are a few of my favorites.

When I write articles, I don't set out with a "topic" in mind. Most articles that I've had published merely document my process of detecting a site or of the events leading up to a notable find. Include the following details in your articles:

- Why you chose to hunt a particular site
- How you gained permission to hunt that site
- What tools (e.g., detectors, coils, detector settings, and digging tools) you started with/finished with, and why
- What items you recovered, and why you suspect those items were found in that location
- What you ended up doing with the items you recovered

Once you've put your article on paper, it's time to decide what venue you'd like to publish it in. Most treasure-hunting, prospecting and coin-collecting magazines offer detailed instructions and contact information inside that explain how and where to submit your article for review. If your article gets chosen for publication, you'll be contacted by a representative of the publication and the details will be hashed out in a short contract. Usually, you'll get paid a reasonable amount for your efforts.

If you plan on posting your articles on forums or blogs, the process is as simple as signing up and creating an account. Once your account has been created, you can post your articles and photos as frequently as you'd like. You don't get paid to post articles on forums; however, some blogs can generate income by allowing advertisements to be posted to them.

Once you have a tangible example of your literary competence and a location in mind to inspire a future feature article, you can use that to help you procure permission as follows using the article approach.

In the article pitch, introduce yourself and state that you're doing some research on the county's history in an attempt to provide better information about the area's past so you can write an article for your publication (whatever it may be). Mention that the property of interest has shown up on several early maps, and then ask the homeowner if they can tell you a little bit about the history of the property or house, etc.

Most owners of historic or old properties can tell you a bit about the house/property because the info was either handed down with purchase or because the property has been in the family for a long time. More often than not, the people who purchase these historic homes also have an interest in history and respect for historic preservation. You'll find that these homeowners relish the opportunity to share the story of the property and will go into great detail about renovations they've made and the things they've found during the process, all of which can be very helpful and add great depth to your future article.

After you get the skinny on the property, explain that the publication you write for revolves around relic recovery in an attempt to better understand history and that your goal is to share it with others. Show them your previous articles (if you have one), including pictures of items you've recovered. Your article examples can be in the form of actual magazines that you've been published in or as simple as a thread that you've posted on a forum. If you haven't written an article, you can show them examples of similar articles in your publication of choice. A framed article presented to the owner for display can go a long way when it comes to gaining access to detect.

Emphasize that the property won't be damaged in any way whatsoever. I always offer the owners a copy of the final publication (or a link to it) and their choice of one or two of the items recovered. We'll touch more on bargaining agreements in a little bit.

COLD KNOCKIN'

Cold knockin' is simply that: knocking on the door of a house with absolutely no idea of who's going to answer or what to expect. This is my least-favorite approach, but nonetheless, it's produced some of the most spectacular hunts I've been a part of. It's never easy and, in my experience, the success rate with this method is only about 60 percent. But with some practice, it gets a little easier. Follow some of these tips to help increase your odds.

Dress the part. I say dress the part because the attire you choose is the first impression you're going to make on your unsuspecting victim. Although your hole-ridden camo pants, flannel shirt, and "Coors Light" trucker's hat might be perfect for digging, at first glance you look like you should be holding a sign on the street corner in front of Walmart. If I caught a glimpse of you through my peephole, there's no chance in hell I'd open the door. In fact, I might even call the cops on you.

On the other end of the spectrum, if you show up looking like you're taking someone to prom, you'll most likely be written off as a missionary or a vacuum salesman. Again, the door won't even open. What you're going for here is something that says, "I'm just your friendly, normal, overly average neighbor." At the same time, if you get a "yes," your attire should be something appropriate to detect in without being too uncomfortable or too worried about getting dirty. I prefer a button-down shirt of a solid color, a pair of khaki cargo pants, some decent-looking and functional shoes, and either groomed hair or ball cap. I will mention, it's important that your ball cap doesn't have a team logo. Your favorite team might just ruin your chances of getting permission if the property owner disagrees with your choice. It would be like wearing a Boston Red Sox hat to a New York Yankee's game. You'll wear out your welcome real quick. Some people take their sports *very* seriously. The right clothes convey your professionalism after it gets them to open the door. If I had to describe it, I would say you should look like a mix between Ned Flanders and Indiana Jones. Here's some examples of what to do *and* what not to do.

Left: Too dressy and you'll look like you're selling something. Middle: You wouldn't let this guy dig up your yard. Right: This guy looks pretty normal and harmless.

Don't carry *anything* up to the door with you, especially your detector! People see your detector in hand and automatically assume you're going to destroy their yard. Likewise, carrying a computer bag, briefcase, or even a couple papers in your hand will automatically give the property owner the idea that you're selling something. If you're bringing an article or some maps up to the door with you, roll them up and stuff them in your back pocket or just offer to grab them out of your car if they're interested in seeing them. I do highly recommend showing the landowners some maps or documentation proving your interest. It's a great way to spark curiosity about the property's past if they weren't already aware of previously existing structures, camps, battles, etc.

As you're walking up to the door, take a look around. Everything you see on the property should be considered a clue or, at the very least, a topic of conversation to help get your foot in the door. What vehicles do they drive? Are they clean? Are there any bumper stickers or work-related decals? What flowers are in the garden? Are there children's toys lying about? Is the yard kept? All of these things not only give you clues as to the lifestyle of the property owner, but should also give you insight as to some of their personality traits. The more things you can identify with, the faster you can build trust with your prospect.

When you knock on the door or ring the doorbell, take a good couple of steps back. This will give the impression that you're nonthreatening and should help the person who answers feel less intimidated. No one likes their personal space invaded. Remember to keep both hands visible. Standing with your hands behind your back or in your pockets gives the impression that you're hiding something.

Pay the same meticulous attention to detail to the person who opens the door. What are they wearing? Does their clothing reflect how they make their living? Are they well groomed? What is their age? Sex? Posture? Ethnicity? Accent? Nail color? Hair color? Physical fitness level? Smell? Are they relaxed and intrigued? Fidgety and pressed for time? Do they have a wedding ring? Tattoos? Pets? Missing teeth? Glasses? Medical conditions? Is there music playing or a TV show on in the background?

All of these are things typically bombard our subconscious to form an impression of someone, but if you look at these clues with the intent of reading into a person, you can learn an extraordinary amount in as little as 30 seconds. All of the intel you gather during your inquiry should help you relate to your prospective permission granter. The quicker you can establish commonalities, the stronger your initial bond will become, thus increasing your odds of getting on the grounds.

The author's personal business card that he leaves with property owners.

On one occasion, I was attempting to gain permission to detect a private residence and was greeted by an elderly man. I instantly noticed that he was wearing golf shoes, smelled like freshly applied sunscreen, and upon opening the door, his hand never left the brass doorknob. Before I could get my name out of my mouth, he began tapping his ringed finger

nervously on the doorknob. The ring was a familiar-looking class ring from a local high school. Without hesitation, I blurted out, "I'm sorry, Sir. I know how seriously you Vikings take your golf game. You must be late for 'tee time.' Let me leave you with my information and you can give me a ring if you're interested." I handed the gentleman a business card that briefly explained who I am, what I do, and how to reach me. It also had a link to my YouTube channel so that he could see for himself what I do.

I try to keep my business cards on hand. You never know when an opportunity might present itself. The gentleman thanked me for being observant and for respecting his time. He took my card, shook my hand, and said, "I'll be in touch." I received a phone call later that night from the gentleman. He said he'd love to hear more about what I was looking for and invited me back to the house the next afternoon.

I showed up the next day with a couple of ice-cold Arizona Ice Teas. He got a kick out of that and long story short, I made a new friend, found some cool stuff, and got some leads from him on other properties in town that his friends owned. This is just one of many examples I have where being overly observant has paid off.

> It's important to note: Just because you notice all of these things doesn't mean you have to comment on all of them. Use what you can. Don't dwell on certain commonalities, unless you've got a chatty Kathy that enjoys your company. Remember, you came to ask permission to detect, not to talk about commonalities for hours on end. There's a fine line between gaining enough trust to get permission to detect and wearing out your welcome. Instead, try to slip in comments and compliments where appropriate. These remarks should be a side dish, not the main course. Keep your eye on the prize.

It's important to have your pitch memorized so you don't have any hiccups, but also be ready to field some common questions. Here's an example of a pitch that I have used while cold knocking:

> "Hi, there. My name is Brandon. I was just passing by and couldn't help but notice your home resembles some of the other historic properties in the area. I'm an amateur historian working on putting together some information about our county and I was wondering if you might have a moment to tell me a little bit about the history of your property? Like when it was built? Who it belonged to? And have you ever found any neat, old items laying around?"

At this point, the homeowners might take the time to talk about the property. Be sure to listen intently and engage. If they mention anything like "the home was moved to this location," be sure to ask if they know where it was originally located. You'd be surprised how many people pick up and move an entire house to the location of their preference. The house might be over 100 years old, but if no one's been dropping stuff in the yard for the past 100 years, your efforts are futile. Once the landowner has given you some background info, it's time to gear up for the big question. I usually present it like this:

> "Your property seems to have a pretty significant history. Would you be willing to let me do some metal detecting on the property? You might have some very neat things hidden just under the surface that can help us better understand the historic significance of the property. I'm very good at recovering artifacts while preserving the integrity of the estate. I use top-of-the-line technology and specialized tools. When I'm done, there won't be any sign of me having been here at all."

With any luck, the property owner says, "Sure! Go ahead! Let me know if I can get you some lemonade." Sometimes, that's the case. There are a lot of people out there that really don't care and would be fine with letting you detect the place as long as it means you're not wasting any more of their time. However, there are instances where you'll have to do some negotiating. Be prepared to make compromises and part with some of your finds.

NEGOTIATING

It's inevitable. When you're asking for permission to detect private property, you're going to run into a landowner that wants to negotiate terms. Here are a few things that typically come up and how I handle them. The compromises I make might differ from what you're interested in doing, but you get the idea. Here are some questions I hear a lot and how I respond:

Q. *Do I get to keep what you find?*

A. Most of what I find is garbage. Every now and then, I get lucky and find some wheat pennies or a neat button. If I find any coins or relics that I already have in my collection, I'd be willing to part with those items.

Q. *What if you find a hidden stash of gold coins or something else valuable?*

A. (This one is a little tricky. You can approach it however you feel most comfortable. I usually start by reaffirming most of what I find is worth next to nothing and then I give them a couple of options.)

If I find something worth over $30, I'll give you the option to purchase it from me at 75 percent of market value. *Or*, I would be willing to purchase the item from you for 25 percent of market value.

Q. *Why only 25 percent for me and 75 percent for you?*

A. Because finding these things isn't as simple as going to Walmart, buying a detector, and digging up treasure. My machine is state of the art, takes years to master, and was very expensive. The physical work of locating and recovering these items is also something that I have calculated into the offer.

(With a little explaining and maybe some haggling, you'll come to an agreement. It's important once the agreement is met that you have a contract written up to protect both ends of the bargain. In most instances, I try to avoid breaking out a contract right away because it scares people. Contracts should only be used in the event the landowner seems to think the Ark of the Covenant is hidden on their property. There are some really great generic contracts written up online that are specifically designed for metal detectorists. Just Google "metal detecting permission contract" and a few should pop up. I'm not a lawyer, so I can't vouch for the integrity of those contracts in a court of law, but I can say that something is better than nothing.)

Things that should be included in the contract:

- Your name
- Landowner's name
- Date
- Property address
- Duration that you're allowed to be on the property
- Release of liability
- Your bargaining agreement, including the percentages that you've agreed upon
- Both parties' signatures

For your records, include a photos of the property before you detect it *and* after you've detected it.

Q. *I don't know. What if you get hurt while you're on my property?*

A. In this day and age, I can't blame you for wanting to protect yourself from being sued. I keep a generic release of liability contract on hand if that makes you feel more comfortable.

Q. *"Can I watch you?"*

A. Absolutely! I'm glad to have someone that shares my curiosity for unearthing history! I even carry an extra metal detector with me and can give you a crash course if you're interested. (Giving them the option to engage in the activity has sealed the deal for me on several occasions and is a great way to promote the hobby.)

Q. *What makes you so sure there's something here?*

A. It would be rare for a property of this age not to have anything. People lose things all the time: coins, rings, toys, keys, tokens, and all sorts of other things turn up consistently.

Q. *How about next week some time?*

A. I'm a pretty busy person, and I've got all of my gear with me today. But If you need some time to think it over, here's my card.

(Do anything in your power to convince the property owner that today is the day! I can't tell you how many times I've set up appointments to detect faraway properties only to arrive on scene to hear "Well, my husband doesn't think it's a good idea" or " I told my cousin about it and he wants to try metal detecting himself." Always take the opportunity immediately if it presents itself. In the event you have no choice, leave a business card with your contact information and attempt to get contact information from them. This way, if something changes, you can be reached/reach them.)

Q. *I lost a ring in the front yard. Can you help me find it?*

A. Yes! Just give me an accurate description of the ring before I start. This will help me listen for the proper signal.

(By asking for the ring's description, it also ensures that the landowner isn't just making a presumption that you're going to find a ring that they can claim was theirs all along. Sneaky, sneaky.)

PAY TO PLAY

If all else fails and you think there's something worth finding on a property, you can always make a cash offer to the landowner to let you detect for an allotted time. This can be a good way to open up an otherwise locked-down property. If this is the option you choose, make sure that you negotiate to keep ALL of the finds. It's not worth it if you do all the work, pay to play, *and* have to split the goods.

PERSISTANCE PAYS

You're going to hear the word "no." Prepare for it. Embrace it. Sometimes you won't even get the chance to talk to the property owner face to face because you're greeted by the "No soliciting" sign. If that's the case, try digging around on the Internet for a phone number. Use the same techniques detailed above and just pretend you're standing in front of them.

Whatever you decide to try, just know that you're going to hear a "no" from time to time. You think Robert De Niro or Tom Hanks never got turned down? You think Don Juan gets the girl every time? No. It's a numbers game. With practice, the numbers will sway in your favor. Just be okay with hearing no. Suck up your pride and move on. Go get 'em.

CHAPTER 6

SCOUTING OLD SITES

In this chapter, you'll learn where to search for old coins and relics once you've found a site worth searching. There's a lot to think about once you arrive at a new location. You should take a look at the lay of the land, try to figure out who lived there and why. Knowing some of these simple things along with taking a look at some basic human needs and habits will help put you on the treasure instead of wondering around aimlessly, hoping to hit a good target.

FROM THE AIR

Using your historic map overlays and Google Earth, you should be able to nail down an old site of interest to within a few hundred yards (even closer once you get the hang of it), but sometimes, old maps aren't very accurate compared to today's standards. These inaccuracies can leave you scouring the satellite images for hours in the hopes of coming across anomalies. Sometimes I search satellite images of historic areas in hopes of spotting anomalies that for some reason or another weren't on historic maps.

What are these "anomalies" I keep droning on and on about? An anomaly, when speaking in terms of reviewing satellite imagery for the purpose of locating ruins or other potential sites, is something that stands out as being unnatural or manmade. I look for 90-degree angles. Perfect 90 degree angles are almost nonexistent in nature, especially when it comes to spotting two or more connected to each other. Squares and rectangles when spotted from the air can indicate property dividers, tree line wind breaks, corrals, foundations, or standing structures. Spotting foundations from the air takes a little bit of patience and practice, but once you know what to look for, you'll start seeing them everywhere.

Near-perfect circles are also an anomaly worth investigating. Even if you don't see a foundation or a line of trees that would indicate a structure having been there, look closely at the color and contour of the ground. Does the ground look trampled? Is it bare of vegetation? Is the dirt a different color than the surrounding ground? Look even closer. Is there an old, two-track road that would indicate consistent travel in and out of the location? Most old, two-track wagon roads are difficult to see on the ground; however, they're often identifiable from the air even hundreds of years later.

FROM THE GROUND

Spotting potential sites where structures used to be is far more difficult from the ground. Things that stand out on aerials can be difficult to see once you're actually on location. You would think that finding prior locations of homesteads and town sites would be easy, but over the years, Mother Nature reclaims them via fire, flood, wind, and other types of decay and erosion.

Keep an eye out for flat, level plots of ground that are slightly elevated and free of old growth. Some structures had cellars. Depending on the environment, the cellar may or may not have been stone-lined. Out West, in the high deserts, it's common to find a single 20 x 20-foot unlined hole in the ground with absolutely no remains of the structure anywhere in site. Upon

closer inspection, you'll find time-period glass and other clues, but generally speaking, these types of unlined cellars can be very difficult to spot, especially if there's any sort of overgrowth. Sometimes the ground around where these structures once stood can be harder than the surrounding ground due to heavy or consistent foot travel.

When you're searching for these lost establishments, keep your head on a swivel for trees that seem out of place or are planted in rows. People often planted rows of trees around their houses to provide shade and protection from the wind. If you're up on your trees, you can estimate the age depending on the size and girth. Take note of what types of trees and plants grow there naturally. If you see a variety that isn't indigenous, it was probably brought in with a purpose. Fruit trees are a prime example of a nonindigenous species that was planted near homesteads to provide some occasional food.

Lilac and lavender plants were often planted next to the privies (outhouses) to help cover the smell. If lilacs or lavender aren't native to the area, you can almost bet that they were brought in for that purpose.

Lye was also used in the privies to help break down the organic waste. After years of use, the alkali saturates the ground, resulting in the inability to grow anything in that location. If vegetation does start to grow back, it can have a yellowish hue. Big, brown or yellow spots in the middle of otherwise green surroundings can be an indication of a prior privy.

Surface items gathered by the author at a Wild West ghost town.

When you start getting close to an old location you should start seeing broken glass, tin cans, and other time-period garbage littering the surface. People back then didn't have garbagemen that came around every Monday to haul off their waste. Everyday items were usually tossed out in the yard, burned in a pile, or buried out back.

Pre-1900s bottles collected from various sites in the US.

Taking a close look at the glass that's lying around can give you a good idea of the time period that the establishment was utilized. Ideally, a fully intact bottle would give you the most information, but fully intact, time period bottles are scarce. Up until the 1860s, lead was used as clarifying agent in glass products. After that, lead was replaced by manganese. After a prolonged exposure to sunlight, clear glass containing manganese will develop a lavender, purplish color. Manganese was used up until about 1915. The presence of violet-colored class when used in conjunction with the bottle type/style can give you a figurative timeframe when dating locations. Also, look for seam lines on the bottles that would indicate molding (1860 to present) and pontil marks on the bottom of the bottle from being hand blown and mold free (3rd century AD to 1860). Any type of glass or glass bottle that exhibits obvious imperfections in the form of bubbles in the glass, torsion marks (a twisting pattern on the neck of the bottle from where the craftsman used a tool to shape the bottle while spinning it), or applied lips and blob tops would indicate non-mechanized production and can reasonably be assumed to have been made before the 20th century.

If you suspect you're on a site but you're having trouble finding time period clues, take out your detector and scan the ground for iron. Iron is by far the most abundant metal left behind by humans. If there was an establishment nearby, you should have no problem following the trail of iron to the location with the most activity.

CONSIDER HUMAN BEHAVIOR

I'm not calling you out when I say this, but humans in general are among the laziest creatures to have ever inhabited the earth. It's like my buddy Ty says, "People are like electricity. We follow the path of least resistance."

When you set out looking for items that people have lost, you have to search for two things: Places where large numbers of people have gathered and places where small numbers of people have frequented. We humans are not only lazy, we're also creatures of habit. Taking a simple assessment of our minimum physiological survival requirements (air, water, food, shelter, clothing, sanitation, touch, sleep, and personal space) and knowing that we're lazy and habitual can make the tracing of human activity extremely predictable.

For the purpose of this discussion, let's pretend that you're looking for coins and relics at an 1850s homestead located in rural America. You know that in order to find lost items, you need to look in probable locations. Looking at the basic needs of a person, you can make assumptions as to where the inhabitants of this homestead would have frequented. Homes in the 1850s in rural America didn't have indoor plumbing, which meant that these occupants would have had to fetch water from an outside source. Since water is one of our most important necessities, this is where I would start.

TRACK THE WATER PATHS

Barrel bands litter the surface of a Gold Rush ghost town in Nevada.

Water wasn't just used for drinking, it was also used for washing things like clothes and dishes. Ask yourself, "Where is the closest clean source of water?" Remember, we're lazy, so water probably wasn't too far off. Sometimes in dry, desert environments water, beer, and whiskey would have been shipped in wooden barrels. These wooden barrels were held together by metal straps called barrel bands. Once the wood was burned, salvaged, or rotted away, all that's left is the metal barrel bands. Keep an eye out for those.

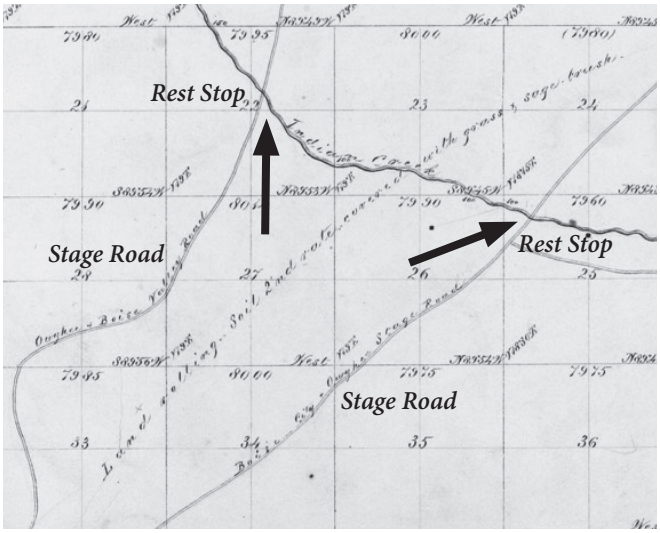
- Once you find the water source, walk from the homestead directly to the water source using the easiest possible route. The line that you just walked is what I would refer to as a "high traffic area" and should be the first place that you detect.
- Second, look for a probable location for an outhouse/privy. These were separate structures from the house, close enough to be easily accessible but far enough away to distance the smell. They would have been built down wind, downhill, and a reasonable distance from the source of drinking water. Look for slight depressions in the ground, lilacs, and bare spots or discoloration of vegetation. Once you've found a couple probable privies, focus on detecting the high-traffic area between the house and the outhouse.
- Third, take a look around for where people would have stored their modes of transportation. Since the folks in this example are from the 1850s, we'll go out on a limb and assume that they had horses instead of cars. That means that they would have had to keep the horses somewhere like a barn or a corral. Investigate the path between the suspected corral and the home. Keeping horses requires lots of work in the form of feeding, watering, and cleaning, so you can bet that the path between the house and corral/barn/stable would've been an area of high traffic.
- Fourth, look for a place that would have been conducive to hanging a clothesline. Maybe a set of trees that are spaced 20 feet or so apart, or even remnants of posts in the ground. Not only would this have been a place that was frequented, it's also an excellent place to find coins. It's easy to forget you've got some loose change in your pockets. Before you know it, you're hanging your pants out to dry while simultaneously dumping out your change in the yard. Anyone who has ever listened to a load of pocket change on tumble dry knows exactly how easy it is to forget to empty your pockets before washing your clothes.

Other areas of high traffic to be on the lookout for are fruit trees, berry bushes, and any other renewable food source, be it a fishing hole or a chicken coup.

ROOT OUT FORMER GARBAGE PILES

Copious amounts of garbage was a problem for our ancestors. If you were homesteading, this meant starting a trash pit or a burn pile. Like the outhouse, these would have been close enough for convenience but far enough to distance the smell. There are cases, however, where trash was put into a small trailer and carted off a slight distance to the tree line or a gulch. This provided both convenience and distance. These dumpsites can be modern-day goldmines, rich with highly collectible antique bottles and more. If you suspect an area as a probable dump site, it would be worth your while to do some investigating.

FIND PIT STOPS



Pit stops marked on a map of a stage route.

Taking a closer look at basic human needs when referencing roads from point A to point B can also be helpful in locating old places frequented by travelers. For instance, looking at a map of a stage route, you can assume that travelers would have stopped to rest in places that had water, shade, and maybe an opportunity to gather up some grub. Compare historic routes to modern satellite images to choose a place where your tired, lazy ass would consider stopping for the night. I meant your donkey ... not you!

FIND GATHERING SPOTS

It's worth researching old newspapers of the area, too. These can be filled with valuable information. County picnics, dances, elections, funerals, circuses, and other holiday celebrations were advertised in the papers along with the location of the event. You'll find the locations are used for multiple things throughout the year and can bring in several hundred people per event. These areas are goldmines when it comes to finding old coins and relics. Local libraries, universities and historical societies can be a good place to start your search. Bring along your phone or digital camera to snap some pics of historic microfilm maps and articles. There are tons of old maps and articles at your local university libraries that have yet to be digitized. The only place you'll find them is in the flesh. Internet research is awesome, but it will only take you so far.

CHAPTER 7

HUNTING BEACHES AND PARKS FOR JEWELRY

Metal detecting for rings and other jewelry is tough. Unlike coins, which for the most part are uniform in size, shape, weight, and metal content, jewelry doesn't have consistency. That's why we're able to recognize coins by the tone and TID numbers when we're detecting. Rings, bracelets, necklaces, earrings, and other jewelry, on the other hand, are made up of all shapes, sizes, weights, and karats. These inconsistencies are what make jewelry hunting so difficult.

There's no set tone or target identification display number for gold. As discussed in Chapter 1, pure gold is an excellent conductor, but gold jewelry is seldom 24k. This means that gold is going to be giving you low to medium tones and TIDs that are associated with pull tabs, foil gum wrappers, can slaw (when a lawn mower hits an aluminum can), bottle caps, and all sorts of other unwanted targets. If you want to get out and score some nice gold rings and other jewelry, be prepared to dig a ton of trash. It's a numbers game, though. Eventually, you'll hit a nice ring. Follow these steps to help increase your odds and decrease your unwanted targets. We'll keep it brief. The main takeaway is, if you want jewelry, DIG IT ALL.

PARKS

Parks are an excellent place to find rings and other jewelry. Unfortunately, they're also a great place to find pull tabs, foil, and can slaw left behind by groundskeeper Willie. If it's gold rings that you're after (which it should be), you're going to need to make a few minor adjustments to your metal detector to help put the odds in your favor. Since ring/jewelry hunting is a numbers game, the first thing I recommend is to reduce the sensitivity of your metal detector. Yes, gold is heavy as hell. Yes, gold sinks pretty dang fast. But, if we're playing the numbers game, we don't have time to excavate every target at depth. The more targets we retrieve, the better our odds become. Focus instead on targets that are within 1 to 2 inches of the surface. You know, targets that your handheld pinpointer can reach without digging. Focusing on targets that you don't have to chase after will keep you from wasting time on deep garbage. Otherwise, you'll waste 5 minutes retrieving a pull tab when you could have retrieved three to four surface-to-slightly-subsurface targets instead.

If your detector has discrimination capabilities, it would make sense to make adjustments that tailor to the numbers and tones associated with your machine's foil, nickel, pull tab, and can slaw range. In other words, make a backward coin program. Instead of accepting high conductors associated with copper and silver coins, try inversing the program to block out high conductors like coins and big, high-tone targets, while accepting everyday garbage targets. This will keep you from diggin' those sweet-sounding signals that we associate as being coins. Again, this is strictly if you're going for some jewelry. Keep your eye on the prize. Remember that you're out there looking for some GOLD!

BEACHES

I'm not an expert beach hunter by any means, but I'll give you some advice that I've learned/experienced over the years. Saltwater beaches are often more problematic than freshwater beaches. When we introduce salt, an alkali, into an otherwise normal environment and add water, we experience a huge loss in sensitivity. The extra mineralization acts as a masking agent and hampers your detector's ability to punch through the ground. Some higher tech, more advanced machines have built-in algorithms that are specifically designed to handle saltwater environments. If you have cutting-edge technology at your disposal for saltwater detection, or a pulse induction machine, impervious to mineralization, use it! Otherwise, if you're experiencing erratic, sputtering, R2-D2 on crack sounds from your machine, you'll need to make a few adjustments.

If you're using a VLF or FBS machine, and you're struggling to keep your machine from falsing over wet, salty beaches, try reducing your machine's sensitivity. This will give you the biggest improvement outside of staying off the wet sand. Obviously, this isn't ideal. You're going to lose depth. Period. End of story. Depth on a beach can be crucial! Things on sandy beaches sink at incredible rates. Unless you're hunting daily at ridiculously populated beaches, you're going to need to make some adjustments to your hunting programs and/or habits. Stability is the key. Again, this theory kind of goes back to the "driving with the high beams on in the fog" analogy. If you're experiencing a bunch of chatter, back off the sensitivity a bit until it's tolerable and remember to constantly check your ground balance.

Beach cuts are the best places to metal detect on the beach.

When working ocean beaches, you'll want to focus on the cut. The cut is basically a sand shelf made by the high water mark. The cut can change with each new high tide, or it can remain the same until acted upon by large swells from offshore storms. Working the cut will give you access to goods that have been redeposited by the motion of the ocean. New cuts also expose older items at depths that have been out of detecting reach. Some of the best times to go beach detecting are after big storms like hurricanes. The excessive water movement stirs up the ocean floors and exposes/redeposits new material.

Just like jewelry hunting in parks, the more targets you can retrieve on the beach, the better your odds are of striking gold. A nice, solid sand scoop can speed up your recovery process exponentially. I prefer the long-handle scoops because you don't have to kneel down or bend over to retrieve targets. Digging a hundred-plus targets to find one gold ring can be hard on the back. Spend the extra forty bucks and get yourself a decent scoop. You'll thank me later.

Freshwater beaches can present their own set of problems. Sometimes, heavy mineral deposits can make your machine go crazy! Black sands, alkaloids, and other anomalies can make things tough. Freshwater beaches generally don't get turned over as much as saltwater beaches. This means that at populated beaches, maintaining proper ground balance and sensitivity to obtain extra depth will be especially important. Crank up your sensitivity as high as it will go without driving you nuts, and dig everything repeatable.

To increase your odds even further, look for popular places that take a little physical fitness to procure. Metal detectorists, like everyday people, are lazy. Make an effort to get into spots where no other detector has been and the rewards can be spectacular.

DON'T BE AFRAID TO GET WET

If you plan on doing mostly beach detecting for jewelry, cough up a few extra bucks to get a fully submersible metal detector. Less than half of the detectors on the market today are fully waterproofed and rated for submersion. This means that if you've got a fully submersible detector, you're going to have access to places that over half of your competitors can't go. Don't be stuck on the beach with 60 percent of the detectorists looking for 20 percent of the treasures.

JEWELERS MARKS AND KARAT MARKINGS

Rings are easily lost in cold water environments due to vasoconstriction (shrinking of blood vessels) in the fingers.

Sometimes, we get lucky and find a piece of jewelry. But how do we tell if it's real gold or silver? Over long periods of time, corrosion can set in and make things very difficult to identify. Generally speaking, gold doesn't tarnish at all. Real gold should shine right up with a light finger rub. Some of the lower-karat gold 12k and below might develop a tarnish from other alloys in the gold. Typically, copper is the main culprit when it comes to corrosion on gold. Rose gold (copper and gold) can be especially nasty looking when unearthed. In sea water, over long periods of time, gold jewelry with numerous cracks and crevices can become encased in coral and other organisms. Sometimes the coral can be removed easily by soaking it in lemon juice.

In the 1940s, the US government federally mandated that gold alloys 10 karat or higher be marked according to the karat. On rings, the karat marking can be found on the inside of the band. 24k would indicate 100 percent gold, where as 18k would indicate 75 percent, 12k 50 percent, etc. Alongside of the karat marking, you can usually find a maker's mark, too. This mark can tell you a lot about the jewelry, like where it was made, who made it, and how old it is. There are books and online resources that have most of these maker's marks cataloged. A little research can give you the answers you seek. If you see the markings "gold plate," "GF," "EP," or "RGP," that means the item is gold plated. In other words, it's not solid gold.

Silver ring marked sterling.

Silver jewelry can acquire a blackish tarnish over time, but should shine right up after a little spit and elbow grease. Like gold, silver usually has a purity marking. Common markings include sterling (92.5 percent), 925 (92.5 percent) or coin silver (90 percent).

A late medieval period gold and turquoise ring found in England by the author.

In the off chance that your suspected gold or silver jewelry doesn't have markings, there are several different tests that can provide authentication and proof of purity. Acid-based tests are probably the most commonly used. They consist of a few different bottles that contain nitric and hydrochloric acid of different strengths. The jewelry in question is rubbed against a black testing stone, leaving a streak of the metal on the stone. The acid is then applied to the metal streak on the stone. The higher the gold content, the stronger the acid will have to be to dissolve the metal on the stone. There are some newer electrical conduction tests out there that decipher the gold content by using a test probe to analyze the alloy. If you want to try an old school method, you can always bite the gold. Gold is soft and you should be able to leave a mark in it with your chompers.

Silver conducts heat better than most any other metal, including copper. If you have an item that you suspect is solid silver, put an ice cube on top of it. Because solid silver conducts so well, the ice will melt at an incredible rate. It's not foolproof, but it works in a pinch.

CHAPTER 8

PROSPECTING

Metal detecting for gold is, in my opinion, the hardest subcategory of metal detecting. The vast majority of natural placer gold (gold that has been deposited by way of erosion) is smaller than a pinhead. Gold this size is often referred to as "flour gold" because it's powdery appearance closely resembles flour. To make things worse, because it's a naturally occurring element, it's usually mixed in with other minerals that can drive your machine nuts. Specialized metal detectors are going to be your best bet if you want to dig some natural Au.

For the bread-and-butter nuggets, you'll want a detector with extreme sensitivity. A high kHz VLF machine can be a great entry-level choice and is always in the arsenal of any serious nugget shooter. The higher the kHz level, the more sensitive to small gold the detector will be. The trade-off? The higher kHz machines don't penetrate the ground very well. The small flakes of gold that you're after will have to be within an inch or two of the surface.

As with any other metal detector, different coils are available for different jobs. New detectors often come in different package configurations that allow you to choose the coil that best suits your needs. When you first purchase your machine, choose the coil you're going to use the most and purchase any other compatible coil configurations later on. Using a small elliptical coil on a high kHz machine can literally detect pieces of gold the size of fly poop! Needless to say, you can waste a lot of time chasing around itty, bitty lil' pieces of gold (well ... you hope they're gold).

Instead of chasing those targets around, stick the rare earth magnet on the end of your prospecting pick and attempt to get it to stick. Re-scan the area. If the target's gone, it's probably stuck to your magnet. If the target's still there, try scooping it up with your nugget scoop and then dump it into a bucket. At the end of the day, run your bucket of concentrates through a sluice or a pan. This allows you to cover more ground.

Although the gold is small, it adds up. The flip side to this is, unless you stick to one general area, you'll have no idea where your gold is coming from. On the other hand, the more targets you can retrieve, the more gold you'll get. If it's a stronger signal, use your nugget scoop to half out the material until you're left with your target. Hopefully it's a nice nugget!

HOT ROCKS AND COLD STONES

One thing you'll be annoyed by right off the bat is the amount of hot rocks and cold stones that produce a signal on your VLF detectors. Hot rocks and cold stones are essentially rocks that have just enough mineralization in them to make your detector think that you've found a target. Iron, magnetite, and hematite are just some of the culprits that get in the way of hearing the gold.

The positive hot rocks will tend to give you a nice sounding "zip zip" that closely mimics the sound of gold, while the negative cold stones have more of a "boing" sound. Cold stones also typically only make a sound when the coil is moving away from them. Either way, most new machines have iron check features that can help identify these pesky rocks.

One method that can significantly reduce the presence of hot rocks is to perform a ground balance directly over one of them. Unfortunately, if you're detecting a place that has both hot rocks *and* cold stones, you'll only be able to ground balance out one or the other. I would recommend balancing over a hot rock as opposed to a cold stone because cold stones are easier to audibly identify than hot rocks. If you come across a stone that just refuses to balance out, you might want to hang onto it in case it's a meteorite. Meteorites come in all shapes and sizes and are mostly composed of iron and nickel. High desert climates and other places with low annual rainfall preserve meteorites near the surface for easy detection. It's not uncommon to accidentally find meteorites while hunting for gold.

Gold like this can quickly offset the cost of an expensive metal detector.

While pulse induction machines are almost impervious to hot rocks and cold stones, they'll still pick up meteorites and can punch though heavily mineralized ground to reach gold targets at depth. However, pulse induction machines and ZVT (Zero Voltage Tech) machines can be quite costly. With the current price of gold ever creeping toward $2,000 an ounce, these high-tech gold getters can pay for themselves if you have the time to find a good spot to swing them.

The earlier PI machines struggled with porous gold, specimen gold (gold in host rock), and small gold, but excelled at finding larger, more solid nuggets at depth. Later generations introduced fine gold timings and waterproofing. The newest Minelab ZVT machines have greatly improved sensitivity to small gold, built-in GPS, and even better depth on targets of all sizes.

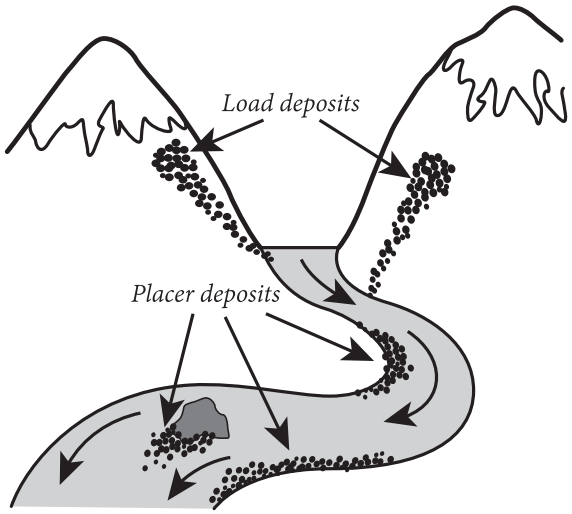
Alas, the major bummer: PI machines of today only have a crude method of iron discrimination that basically discriminates by processing the strength of the signal. This means that small items like boot tacks and tiny bits of wire won't register as an iron target until you get within a half inch of them or so. It also means that your 2-pound nugget when detected at close range can be mistaken for a large piece of iron. Be very careful were you decide to implement your PI machine's iron discrimination functions. That being said, iron discrimination on PI machines can save you a lot of backache in trashy areas if you stick to digging the softer, more subtle sounds that don't cause the threshold to null.

ZVT machines, on the other hand, currently lack the ability to discriminate, which means you're going to want to investigate everything that makes a signal. When using a PI or ZVT machine, I make it a point to find gold-bearing areas as faaaaaaaar away from human activity as possible. Nails, bullets, tin, and any other garbage laying around will keep you busy retrieving everything but gold.

WHERE TO LOOK

Honestly, a guy could write a whole separate book on how to find gold deposits. I'll just give you the *Reader's Digest* version, though. When it comes to metal detecting for gold, there are some really specific things that have to come together in order to put a nugget under your coil.

The gold deposits that you're after have to be big enough to detect and shallow enough to detect. Like I mentioned before, it also helps if you're far away from other man-made metal deposits (i.e., trash). One phrase that you'll hear prospectors say is to "look where it's been found before." There are excellent government records that provide information on gold mines, including the amount mined, type of deposit, purity, and general size and character of the gold. While looking through these reports, you should be looking for key words like placer, large nuggets, shallow, alluvial, eluvial or any other words that you can associate with gold that is big enough and shallow enough to detect.



Gold deposit examples.

The reports should also provide information on the associated host rock and other geological features linked to where the gold was found. It's important to make note of these features and know what they look like before you head out into the field to locate a gold deposit.

Tailing piles left behind by gold-dredging operations during the California Gold Rush.

The bad thing about going where gold has been found before? People have already been there mining it, and not only will it have the potential of being mined out or picked over, but it's also going to be full of man-made metal, and lots of it. However, it's still worth trying those spots. If anything, just to visualize the environment so that you can identify similar areas in close proximity that might also contain gold. Many of the older methods of gold recovery were subpar by today's standards and lost as much gold as they recovered. Tailing piles from old mining operations are great places to detect for gold. They can be small, hand-stacked piles of rocks. Or they can be massive, seemingly endless rows of rocks displaced by commercial dredging operations. I've had decent luck detecting the tailing piles that contain smaller rocks, about ping pong ball–sized and smaller.

Gold is 19.3 times heavier than water and nearly twice as heavy as lead. Because it's so heavy, it will always come to rest at the lowest place that will physically stop its descent. Looking for places with shallow bedrock or shallow false bedrock, like clay deposits, can put gold within reach of your detector. Areas like stream beds, gulches, and other potential waterways can not only expose new gold through the process of erosion, but also redistribute gold into low-lying areas. Sharp bends on the inside of the stream beds (dry or wet) can be hot spots to prospect. Water slows down along the inside bend, allowing gold to drop out of the current. Keep your eyes peeled for exposed bedrock, too.

So whatever type of gold deposit you're looking for, be sure to do your homework on the types of deposits in the area and make sure you're not claim jumping. Check with your local government officials before heading out. Your local BLM offices should be able to give you detailed information on what land parcels are unclaimed and open to prospecting. If you strike it rich on a parcel of unclaimed ground, you'll want to head back down to the BLM (or whatever government land management agency there is for that area) and file a claim of your own. Making a claim on the land doesn't give you ownership of the land. It simply means that you own the mineral rights to land. Claim jumping is a term given to prospectors who disregard claim rights and help themselves to land that has been claimed by others. It's a very serious offense!

Various gold nuggets resting on an 1855 Seated Liberty US silver quarter.

It's your responsibility to know where you are at all times. Just because a claim isn't posted doesn't mean it's not claimed. It also doesn't mean you won't get in serious trouble if you get busted claim jumping. If you're lucky, you won't get shot. There's still plenty of gold out there for everyone. Make it an adventure and go find some.

CHAPTER 9

HOW TO CLEAN, PRESERVE, AND SELL YOUR FINDS

Even a blind squirrel finds a nut every once in a while. Hopefully, by now, your odds are better than that of our sightless, furry friend. Whether you're a collector or a seller, it's important to know when it's appropriate to clean your finds, how to clean them, and how to preserve them. Sometimes, cleaning a find can absolutely destroy the item and any potential value associated with it. Other times, cleaning a find will enhance the visual appeal and increase the value tenfold. Knowing when to tamper with your finds or leave them be is a fine line to walk. In this chapter, I'll let you in on some trade secrets used to clean coins and other artifacts that you've dug.

WARNING: If you have recovered a coin or artifact of true rarity, please consult a professional before attempting to clean the item yourself. These tips and techniques are designed for use on common, everyday items of little to no historic significance or monetary value.

COINS

Coins are made up of a few different types of metals. It's important that we don't use any one technique on *all* types of coins. One cleaning method might work wonders on one denomination, while the same method could completely ruin another denomination.

A rare variety 1854 "Huge O" Seated Liberty US silver quarter found by the author in a remote gold mining district of Idaho.

It's also important to know the significance of the coin you are hoping to clean or preserve. Key date coins and rare variety strikes/mint errors can be highly collectible, but only if they're presentable. What are key date coins, rare variety strikes, and mint errors?

A key date coin is a low mintage of a particular year from a particular mint. Mint = Place the coin was made. Low mintage = They didn't make many. Rare variety coins usually come in the form of a coin design that was only minted for a short time before the design was altered or discontinued due to uneven wearing or some other design flaw. Rare variety coins can also be limited editions minted for special circumstances.

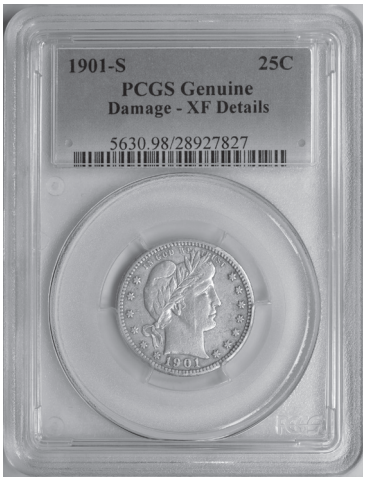
A mint error is exactly what the name implies. It's when the coin is flawed during production. Sometimes the dye strikes the planchet in a fashion that creates an imperfect coin. These imperfections can go unnoticed and make their way into circulation before the flaw is spotted and corrected. Some common mint errors include:

- Cracked Dye (the dye has a small, hairline fracture that transfers to the coin)
- Double Dye (when the dye accidentally gets engraved twice in slightly different locations, creating a shadow-like effect on the design and lettering)
- Off-Center Strike (the dye strikes the coin off center, creating a partially blank coin)

Whenever you find a coin that you're not familiar with, I would encourage you to look up some info on it using any number of coin reference books or Google. If you discover a rare, collectible coin, I would highly advise you to seek professional assistance before attempting to clean your coin. Rare coins should be submitted to PCGS (Professional Coin Grading Service), NGC (Numismatic Guaranty Corporation), or ANACS (American Numismatic Association Certification Service) for professional grading, cleaning, preservation, and holdering.

HOLDERING AND GRADING

Holdering or "slabbing" is something that the coin graders do to prevent the coin from being damaged or tampered with. When the coins are graded, they are placed in a vacuum-sealed, airtight plastic case. The case also houses a paper and tamperproof hologram identifying the coin's name, type, denomination, grade, and authentication number.



A 1901 S Barber Quarter in a slab after grading.

The grading process consists of high-tech analysis of the coin's surface condition, metal content, thickness, diameter, weight, sound, and even smell. This process is designed to uncover flaws in the coins, such as circulation, extensive wearing, environmental damage, improper cleaning, tooling, soldering, toning (when substances are used to create artificial patina), and anything else that would be considered damaging to the coin. Based on what they find, your coin will be assigned a grade.

There are a few different grading systems in use today but the most common grading system in the US is an alphanumeric system adopted from the "Sheldon Scale" developed by William H. Sheldon in 1949. The lowest grade for a circulated coin would be a 1 Poor (Never Abbr.); these coins can be identified but are badly corroded or worn smooth. The highest grade for a circulated coin would be a Mint State 70 or MS70. These mint state coins show zero sign of circulation and are as perfect as the day they left the dye. When metal detecting, the highest coin grade that you would be able to achieve would most likely be a Choice About Uncirculated 58 or Ch. AU 58. This is the highest grade a circulated coin can achieve. It's safe to assume that the coins you'll be finding were in public circulation during the time they were lost.

Some other key date coins found by the author, including an 1885 Liberty Head or "V" nickel (left) and a 1914 D Wheat Penny (right).

Coins with damage will be given a "details" grade, meaning the coin has been flagged for some sort of extensive damage. A details grade will cut the value of your coin in half (if not more) instantly.

One of the biggest problems you'll face as a detectorist is environmental damages. Environmental damages are almost unavoidable because your coin has been sitting in the ground acquiring corrosion. The high-tech analysis of your coin will, unfortunately, 90 percent of the time discover that your coin has come out of the ground. If your coin is certain to get a details grade for environmental damage *and* your coin has poor eye appeal, you can squeak out a few extra dollars at market if you take the time to spruce it up a bit. The worst thing that can happen is, instead of getting a details grade for environmental damage, you'll get a details grade for "improper cleaning." One isn't worse than the other. There's even a snowball's chance in hell that you'll avoid a details grade altogether. Like I said, this should only be done if your coin is either non-collectible or is absolutely hideous. If you find a 1913 Liberty Head V nickel, DON'T TOUCH IT!

SILVER

Silver coins that have been in or on the ground for a long time have a tendency to acquire a blackish tarnish. The blackish tarnish is the result of hydrogen sulfide. Because silver coins have 10 percent copper in them, they can also develop a greenish, hard corrosion. This is from the copper leaching out of the coin.

Whatever type of corrosion/tarnish your silver coin displays, it's important to acknowledge just how easily silver coins scratch. Once a silver coin is recovered from the earth, it will no doubt have soil stuck to it. *Do not rub the coin to remove the abrasive soil*! This will result in scratches all over your coin. Instead, carry some water with you to rinse the surface clean of any abrasive material. I use my CamelBak Hydration Pack to rinse my coins. I have friends that carry a small spray bottle

to get the job done. If the quick rinse doesn't remove all of the potentially abrasive material, wet the coin again and lightly dab the coin with your non-gloved finger while pouring water over it. Repeat this until the coin is free of abrasive materials.

The author with a recently dug 1920 Standing Liberty silver quarter.

Sometimes, you can't get all the gunk off, and that's okay. What you're doing in the field is simply trying to prevent any free-moving particles from rubbing on the coin. After the dirt has been removed, place the coin in a secure coin keeper. The coin keeper should prevent your coin from rubbing on other surfaces and should also keep your finds separate from one another. Once you get home, you get to decide whether or not to continue restoration of the coin.

To remove years of built-up crud stuck to the coin, I soak the coin in olive oil for about a week. Once the coin has had a chance to soak, I simply collect the debris with a Q-tip using a "roll on, roll off" motion. Repeat the process until the debris is gone. *Do not use a smearing motion to wipe off abrasive material.* To expedite the process, I will sometimes put the coin in a small pot and submerge it in olive oil and then bring it to a boil for a few minutes. The heat can help loosen the hardened material. It's important to note that while this method of heating the coin in olive oil works well with all coins, it will change the patina of copper coins and other copper-based alloys.

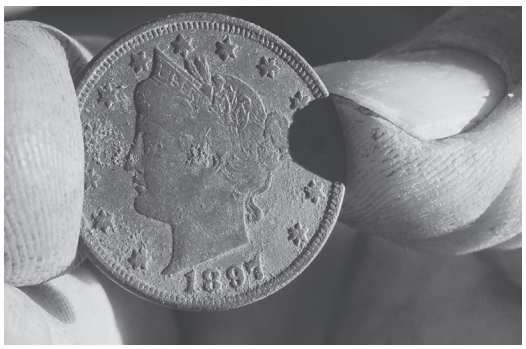
To remove blackish tarnish build-up on silver coins, I usually give them a gentle rub in between my thumb and index finger. Make sure that all of the abrasive material has been removed before attempting this method. If your silver coin is corroded to the extent that none of the above has worked, it's time to get out the zapper (see page 78).

COPPER

For the most part, I clean my copper coins by letting them soak in olive oil for a few days, wiping off the crud, and then repeating the process. However, as stated above, using heated olive oil to expedite the process will change the green patina of your old coppers into a dull, reddish orange. Take extreme care when deciding whether or not to clean old, crusty colonial coppers. In most cases, once the corrosion is removed, the detail will come with it. Try using a small wooden toothpick to gently remove the dirt, followed by a light coating of Renaissance Wax (a semi-synthetic wax used in antique restoration) to exaggerate contrast and preserve integrity. Electrolysis (see page 78) can also be used on coppers, but can result in removing corrosion that contains detail or a change in the color of the patina. Use of electrolysis on colonial coppers should be limited to 30-second durations.

NICKEL

I'll tell you right now that nickels are going to be the worst-looking coins that you'll dig. They come out extremely corroded and typically exhibit a heavy, dark-red patina. In minor cases, an overnight soak in ketchup, Worcestershire sauce, vinegar, or any other acidic solution will remove corrosion. In cases of heavy corrosion (most cases), removing the corrosion will expose pitting of the coin. Leaving a heavily corroded nickel for an extended amount of time in an acidic solution will not only expose pitting, it will also destroy the luster of the coin, leaving you with a dull-looking, pitted nickel.



Nickels don't fare well in the ground.

My preferred method of cleaning nickels (I can hear the screaming already) is an SOS pad and a little warm water. Something about the light gauge steel wool injected with Ajax just peels the corrosion off of nickels and can really shine them up. Nickel is a pretty hard metal, and it takes a lot to leave visible scratches on it. Again, not something you'd want to do to a key date coin, but if you're looking to create a little contrast to make the coin legible, this might be for you. WARNING: The SOS method will absolutely destroy other coin denominations and should only be used on nickels. Note: This method should never be used on "war nickels" minted between 1941 and 1945. These war nickels were minted during WWII and used a mixture of 40 percent silver in an effort to save nickel for the war efforts. The addition of the silver in these coins makes them softer and more susceptible to scratches, and thus, the SOS pad cleaning method should be avoided on these coins.

ARTIFACTS

For the most part, your artifacts can be cleaned by using a very fine, very soft brass wire brush, soap, warm water, and a light coating of Renaissance Wax to help with preservation. In cases of extreme rust, electrolysis can be used. Just make sure that if you're using electrolysis to clean things like cannon balls and other live rounds, they've been disarmed and are free of any potentially explosive gunpowders.

ELECTROLYSIS

The zapper, as I call it, is what I use to clean coins that contain the most stubborn dirt and/or corrosion. When used correctly, it's also a great choice for coins of potential value. Electrolysis is the process of using a direct electrical current to drive an otherwise non-spontaneous chemical reaction. Instead of getting to the specifics, allow me to just give you the rundown. Electrolysis strips microscopic layers of metal off of your coin while removing the corrosion and tarnish with it. Sounds awful, doesn't it? Well, it can be if you leave your coin in too long or if you're using too much electricity. It's important to use extremely low voltages in short increments.

You can buy your electrolysis kit or you can make your own. Before you start, make sure that you're in a well-ventilated area and nowhere near an open flame, as one of the by-products of electrolysis is hydrogen gas. Here's how you make your own electrolysis kit:

SUPPLIES:

- old cell phone charger between 6 and 12 volts
- red alligator clip
- electrical tape or splicers
- black alligator clip
- 1 tablespoon baking soda or non-iodized salt
- 3 cups warm water
- Tupperware container
- piece of pure carbon (Carbon electric motor brushes work great. Some people will use stainless steel instead of pure carbon. This can produce extremely toxic by-products and should be avoided at all cost!)

DIRECTIONS:

1. Cut the end of your cell phone charger off (make sure it's not plugged in, Genius), exposing the positive and negative wires.

2. Attach a red alligator clip to the positive wire (anode), leaving the alligator clamp free to grip your carbon or other catalyst metal. Hint: Your positive wire is usually marked with a white stripe.

   Attach the black alligator clip to the negative wire (cathode) leaving the alligator clamp free to grip your coin or artifact. Hint: It's the other wire. It's usually black with no other markings. If you're not sure which wire is positive/negative, you can use a multi-meter (refer to your multi-meter's manual). If you don't have a multi-meter (or if you don't know what one is), there's still hope. Finish constructing the unit and submerge the alligator clips in the electrolysis solution. With the clips submerged and the unit plugged in, the negative side should start fizzing and producing small bubbles. This will be the side that you attach your coin to.

3. Use electrical tape or splicers to cover your connections so you don't have any exposed wire when you're done.

4. Take 1 tablespoon of baking soda or non-iodized salt and add it to about 3 cups of warm water. Mix it until it's completely dissolved.

5. Pour the concoction into your Tupperware container. I like to use one that's about 10 inches x 6 inches and about 3 inches deep.

6. Attach the positive (red) alligator clip to the carbon (catalyst metal). Submerge the carbon into the solution but DO NOT LET THE POSITIVE ALLIGATOR CLIP (RED) TOUCH THE SOLUTION. This will result in destruction of the clip and discoloration of your coin or artifact. Also, make sure your carbon and your coin are on opposite sides of the container. If they're too close or touching, they'll arch and can destroy your coin or artifact.

7. Using the negative clip (black), clasp onto the coin or artifact and submerge it into the solution. The negative alligator clip can be submerged in the solution without affecting your coin or clip. Be careful not to scratch the surface of your coin or artifact with the alligator clip. It might even be a good idea to file down the teeth on the negative alligator clip to avoid scratching your treasures.

8. Now, cover your private parts and plug the sucker in.

If you did it right, you're still alive and you're starting to see small bubbles forming on your coin. If the bubbles don't develop over the course of a minute or two, unplug the unit and swap the clips around. You probably had it hooked up backward. It's not recommended that you touch the water or any of the attached, exposed metal parts of the unit/coin/carbon while the unit is plugged in. Doing so could result in getting tickled to death by electricity, although that's the worst-case scenario. You'll most likely just get a little zap.

Once you're up and running, keep a close eye on your coin. You should shut down the unit every minute or so and remove the coin. Gently rinse the coin and give it a gentle rub between your fingers. Using a dab of regular toothpaste and VERY gently rubbing it into the coin helps remove some of the particles that the electrolysis broke loose and exposes more base metal to be treated by the next round. It will also make things excessively shiny if overdone.

Repeat the process of zapping, rinsing, and rubbing until you've reached your desired results. I recommend removing just enough to make the coin's high points pop. Having some contrast on the coin will make it more aesthetically appealing and should give it some character. Over-cleaning coins is very problematic, easily observed, and will definitely net you the dreaded "improperly cleaned" stamp.

While this method will work on any metal, it should be avoided on nickels. Unless, that is, you're trying to purposefully create pink nickels. Then, it works great! Try experimenting on different test coins before you commit to zapping your key dates. Once you perfect this method it can help you achieve amazing results without destruction.

THERMAL SHOCKING

Thermal shocking is a method of cleaning coins that uses extreme variances in temperature over short periods of time to remove debris that is difficult to remove. This method requires putting the coin to be cleaned in the freezer for approximately 15 minutes.

While you're waiting for your coin to chill, pour a cup of hydrogen peroxide into a tall glass. Heat the glass of hydrogen peroxide to a boil in a microwave and carefully move the glass to a flat, level surface. Using dry hands, remove your coin from the freezer and plop it into the hot hydrogen peroxide. Be careful not to splash yourself (or others). The nearly instant, extreme temperature change that the coin undergoes creates a rapid expansion of the molecules within the coin. The molecules in the coin expand faster than the debris on the surface of the coin, causing the debris to crack and flake off. Bubbles from the heated hydrogen peroxide enter some of the microscopic cracks in the remaining debris and assist in loosening hardened grime. Repeat this process until you're satisfied with the results. As stated above, the process of heating copper and other alloys can change the patina of the treated metal.

PRESERVATION

Stopping (or slowing) the processes of corrosion and oxidization is what preservation is all about. When you take your old rusty bucket of a car to the body shop to get painted, do they paint right over the rust? Or do they remove the rust prior to painting?

Cleaning your item is the key to proper preservation. However, as mentioned before, cleaning can also ruin your coins and artifacts. Left uncleaned and untreated, corrosion will continue to snowball and eat away at your coins and artifacts until there's nothing left to identify.

The good news? Corrosion can take a long time. Sometimes, the simple act of removing the item from the environment you found it in and storing it indoors will drastically slow oxidization and corrosion. Preserving items of value and historic relevance should be done by professional curators and shouldn't be attempted by untrained persons. If you're not sure, just take the item to your local museum for some guidance. They might even offer preservation services.

If you do decide to preserve some of your finds, your main goal is to decrease the items' interaction with moisture and oxygen. The very things you need to live are the things that will kill your treasured metallic items. Products such as Renaissance Wax or natural bee's wax can be used to create a barrier between the atmosphere and the surface of your item. Applying these products to your item without first removing the corrosion will slow the process of oxidization and corrosion drastically, but it won't stop it completely. This technique should be done when it's been determined that removing the corrosion would also remove the details and key features, rendering your item ruined and unidentifiable.

If you've decided that your item would benefit from cleaning prior to preservation, your goal is to remove the corrosion, exposing the base metal. Once the base metal is exposed, the item can be treated with Renaissance Wax or bee's wax to prevent the reoccurrence of corrosion. The wax products will need to be reapplied every year or so to prevent moisture from getting to the item. Items should be stored indoors, in low humidity, out of direct sunlight, and within moderate temperatures (40°F to 80°F).

Coins can be kept in airtight coin holders sold by your local coin shop or found online. Coins that have been holdered by a grading service are sealed in a vacuum-tight holder to ensure longevity of the coin. Whatever method you choose, be sure to practice on some similar items before just jumping in. Please remember to consult a professional before cleaning and preserving.

SELLING YOUR ITEMS

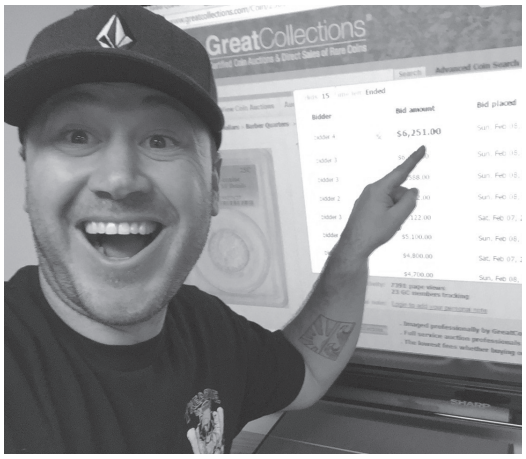
Selling your more significant finds can bring in a few bucks here and there to help fund your next adventure or upgrade to the next, best, latest, greatest metal detector. Finding people that are willing and able to pay you top dollar for your finds can be difficult, especially if you're not familiar with where to look.

The first thing I do when I'm thinking about selling an item is an online search for similar items in similar condition. Finding out how much similar items sold for and then comparing them to the current condition of my item gives me an idea of what my item's worth. It also tells me what venue those items have been sold at in the past.

Sometimes it makes more sense to sell things at auction houses, while other times online auctions or social media might be more attainable.

AUCTION HOUSES

Auction houses are professional consignment venues that deal in selling high-end coins and antiquities. You should seriously consider using an auction house for items of extreme rarity and value. They offer more security and documentation than selling the items independently. Some auction houses are held at an actual physical location where potential buyers bid on the floor, by phone, or online, while other action houses are strictly online venues.



The author sells his 1901 S Barber Quarter at auction for $6,251.00!

Some notable auction houses with physical bidding floors are Stack's Bowers and Heritage Auctions. GreatCollections is another notable auction house for coins but is currently only an online bidding forum. I used GreatCollections to sell my 1901 S Barber Quarter and it was a wonderful experience.

Auction houses can bring in high bids from serious collectors. They have extensive access to private collectors worldwide and can help bring more bidders to the table. That service, however, comes at a cost of about 17 percent. Although the percentage is usually paid by the buyer, it doesn't take the sting out of knowing that you could have privately achieved another 17 percent for your item. Percentages can be negotiated and vary with different auction houses, so be sure you do your homework.

Negotiations resemble haggling with a used car salesman, but if you know how to wheel and deal, you can shave a few percent off your item's commission. Getting in touch with these venues is as simple as typing the name in the Google search bar and following the submission instructions on the venues' website. They usually have contact information on the site in the form of an email address or phone number.

Be sure, if you use an auction site, that you set a reserve price. This will allow you to keep the item if the high bid doesn't meet your minimum required sale price. But beware: Some auction houses require *you* to pay a listing fee of about 10 percent if your item doesn't sell. Either way, the house *will* get a cut.

SELLING ONLINE

eBay is a great way to sell your finds, but it also comes with heavy fees and increases your chances of a fraudulent transaction. I personally have had good experiences with eBay, but have heard horror stories of less-than-ideal transactions. In a few cases, I've heard of sellers selling raw coins (ungraded and un-holdered) to a party. The buyer then swaps the coin with a coin of a lower grade and claims the seller failed to accurately describe the item. In this case, the buyer files a complaint with

eBay, and eBay withdraws the funds from your account and refunds the buyer's money. The buyer ends up with your coin *and* your money. All you get is a crappy coin and a huge middle finger. It's for this reason alone I recommend only selling graded, holdered, and authenticated coins and stating a no-return policy in the item's description.

I use eBay for transactions limited to about $1,000.00. This is just a figure that I feel comfortable with. For transactions involving a higher price tag, I prefer to use a professional auction site.

Craigslist can be a good forum to find buyers, but it can also be a great place to get robbed. If you decide to use Craigslist to find a buyer, I highly recommend using a secure email account to communicate instead of your personal phone number. This will prevent the buyer from being able to obtain your personal address. Always set up the transaction in a high-traffic, public place with good lighting and bring your biggest, most intimidating friend along to keep potential assailants on their toes.

SOCIAL MEDIA

Social media can be a great way to sell. Same rules apply, though. You must, must, must use caution when committing to online sales with people you don't know. Facebook metal detecting group pages, coin collector group pages, and "buy sell trade" Facebook pages are all great potential forums to reach potential buyers. They offer a free venue to post pictures of the item and a way to chat privately with potential buyers.

Like Craigslist, these options are uninsured and require a lot of trust between both parties. I would recommend finding the buyers via these venues and then directing them to a secured site like eBay to make the transaction. This way, you have better documentation of the transaction and the buyer (and seller) will face legal repercussions for dishonest/fraudulent transactions.

PAWN SHOPS AND COIN SHOPS

If you don't care to use an online forum and you don't feel like your item requires an auction house, pawn shops and coin shops will always be happy to take a find off your hands. If you decide to use this route, you're going to take a pretty big financial hit. These options rarely offer you more than 30 to 40 percent of market value for your item. But they're quick and easily available.

CONCLUSION

THAT'S ALL, FOLKS

I've told you everything that I know about metal detecting. I hope you'll use everything in this book to responsibly recover some incredible things. I encourage you to get out there and to have some adventures! Find cool stuff! Create some memories! Save some history! But most importantly, have fun and stay safe! I leave you with some pictures of my most memorable finds. Godspeed and God bless. "It's out there. I promise!"

APPENDIX

INFORMAL METAL DETECTING PERMISSION AGREEMENT

I _____, Property Owner, agree to provide metal detector Hobbyist _____ _____, subject to conditions in this agreement, temporary right to enter the property described.

Property Address: _____

City: _____ State: _____ Zip Code: _____

Description of the property portion that can be entered/searched: _____

_____

_____

_____

PURPOSE: Hobbyist is allowed access to property only for the purpose of metal detecting to locate, dig and recover metal items. (Items maybe coins, iron relics, jewelry, metal/brass buttons, and other miscellaneous metal objects.)

LIABILITY WAIVER: Hobbyist will not hold Property Owner responsible for any Hobbyist loss, damage to equipment or personal injury or for any claim made by others that may arise from items found on Owner's property.

FOUND ITEMS OWNERSHIP: Hobbyist will gain ownership to all items found while metal detecting on described property unless otherwise noted. _____

_____

_____

_____

PROPERTY CONDITIONS: Hobbyist will leave property in like condition before metal detected to the extent that is practical. All holes made by Hobbyist will be filled.

TERM: Metal Detecting

Start Date: _____ Time: _____

Stop Date: _____ Time: _____

Termination: Owner may terminate this agreement at any time unless otherwise noted.

_____

_____

_____

_____

AGREED TO:

Date: _____ Time: _____

Property Owner: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Email: _____

AGREED TO:

Date: _____ Time: _____

Hobbyist: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Email: _____

FINDS JOURNAL

Date: _____

Property Owner: _____

Address:_____

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GPS Coordiates _____

ITEMS

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RESOURCES

AUCTION HOUSES

Stack's Bowers
www. stacksbowers.com
This prestigious house auctions coins, collectibles, and high-end antiques.

Heritage Auctions
www.ha.com
Based in Dallas, Texas, Heritage Auctions is the largest collectibles auctioneer in the world.

GreatCollections.com
An online-only auction house for numismatics and other collectibles.

MAGAZINES

Western & Eastern Treasures
www.wetreasures.com
This family-run business is the leading magazine in metal detecting and treasure hunting.

American Digger Magazine
www.americandigger.com
Specializing in metal detecting in the US, this magazine also provides information on identifying finds.

Lost Treasure Magazine
www.losttreasure.com
Feature stories revolve around caches, hordes, and other large treasures from around the world.

Gold Prospectors
www.goldprospectors.org
Articles in *Gold Prospectors* focus on locating, excavating, and processing native gold.

Coin World
www.coinworld.com
You'll find all things numismatics in this publication, which specializes in articles about collectible coins and how to identify them.

LAND OWNERSHIP

ReportAllUSA.com
Search with an interactive map that zooms into points of interest to reveal information on land ownership. There's also an option to search by address.

LandGlide
This is an iOS-only mobile app that shows property lines and land ownership for the vast majority of the US.

METAL DETECTING FORUMS

These forums offer the metal detecting community a place to share finds and talk shop about brand-specific machines and settings. They also offer metal detectorists a place to buy, sell, and trade used metal detecting equipment.

www.treasurenet.com
www.findmall.com
www.metaldetectingforum.com

METAL DETECTORS

www.minelab.com
While there are specialized metal detectors for every situation, Minelab continues to push the envelope of metal detecting technology, ease of use, and practicality. Learn more about the machines they offer by using the link above.

COIN VALUES

Official Red Book: A Guide Book of United States Coins
This is the definitive guide to US coins and their value.

PROFESSIONAL COIN SERVICES

These professional coin services offer coin grading, cleaning, and preservation.

PCGS (Professional Coin Grading Service)
www.pcgs.com

NGC (Numismatic Guaranty Corporation)
www.ngccoin.com

ANACS (American Numismatic Association Certification Service)
www.anacs.com

ACKNOWLEDGMENTS

This book is dedic**ated to my wi**fe, Katie, the most understanding woman on earth. I love you with all my heart. You have made all of this possible. You're the best treasure I will ever find. I love you Beebee.

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ABOUT THE AUTHOR

Brandon Neice, a.k.a, Dr. Tones, has traveled the world with a metal detector and a video camera in hand, searching for coins, relics, gold nuggets, meteorites, and lost treasures of all sorts. Over the years, he has made discoveries that have circled that globe, resulting in various publications and major network television opportunities. With over a decade of experience using metal detectors, Brandon and his YouTube series "Dirt Fishin America" have become household names in the metal detecting and treasure-hunting community. A true ambassador of saving history and promoting the hobby of responsible metal detecting, Brandon has worked alongside archaeologists in an effort to bring history to light.