SECRETS TO FINDING WEALTH WITH METAL DETECTORS

by Charles Garrett
METAL DETECTORS can help you FIND WEALTH
By Charles Garrett

INTRODUCTION
Treasure hunting with a metal detector appeals to men and women of all ages. It is an absolutely
universal outdoor hobby! Treasure can be hunted with equal intensity anywhere on the face of the earth or
under its waters. Each individual decides how much energy is required to excel at the hobby, and the
decision can be changed from day to day or even from one minute to the next. The hobbyist can hunt for
hours a day or for just a short while; the hunting may be strenuous or involve little exertion. Hidden wealth
can be sought with equal vigor and satisfaction at exotic foreign locations or literally in one’s own
backyard.

Hunting for treasure with a metal detector is an ideal hobby for young people, full of energy an
curiosity, with a desire for adventure and excitement. The hobby is perhaps even more suitable for mature
men and women—yes, senior citizens—whose health permits (or requires) light outdoor exercise and who have
maintained their zest for adventure. Treasure hunting offers the opportunity to satisfy this quest for
excitement and mystery without lengthy travel or elaborate equipment.

Truly, seeking lost treasure fascinates everyone, and it is a hobby that offers financial rewards as
well as the benefits of healthy exercise and outdoor activity. Finally, nothing can compare with the sheer
thrill of discovery—whether it be that first coin...a ring...a gold nugget...a lost outlaw cache. The joy and
excitement enrich both the spirit and the pocketbook.

This Garrett Guide provides basic information on the development and operation of equipment
designed to detect all forms of metal, but especially treasure. The Guide will include simple explanations
of scientific principles that govern the process of metal detection. It will also point out various ways in
which detection devices are used. How metal detectors find lost or hidden objects both on land and in the
water will be described. Modern detectors designed and manufactured by Garrett Electronics serve as
illustrations.

This Garrett Guide answers three simple questions:
-What is a metal detector?
-How does a metal detector operate?
-How can a metal detector be used to find treasure?

WHAT IS A METAL DETECTOR
A metal detector is simply an electronic device that detects the presence of metal, primarily
through the transmission and reception of radio wave signals.

A metal detector is NOT an instrument (geiger counter) that detects energy emissions from
radioactive materials. It is not an instrument (magnetometer) that measures the intensity of magnetic fields.
It does not point to metal; it does not measure the abundance of metal. A metal detector simply detects its
PRESENCE and reports this fact.

Computerized metal detectors such as the Grand Master Hunter with microprocessor control are as
modern as tomorrow, but the metal detector scarcely represents a new scientific development. Ancient
documents indicate that a Chinese emperor over two thousand years ago developed a metal detecting device
using magnets. It was designed to find weapons before they were used to assassinate him.

When President James A. Garfield was shot in 1881, doctors asked Alexander Graham Bell,
inventor of the telephone, to help locate the bullets with metal detection equipment. As American industry
grew in the early 20th century, detectors were developed to monitor metal tools and products and control
their possible theft by employees and visitors to manufacturing plants. Other uses were also found in
industry.

During World War II rapid advances were achieved in the technology of metal detection, as new
equipment was developed essentially to locate land mines and similar weapons. In 1945 mine detectors
joined countless other items of war surplus available in the public marketplace at a fraction of their cost.
Veterans familiar with this equipment were quick to recognize its value in locating buried treasure.

A new hobby was born. Many companies produced, first, bulky instruments using vacuum tubes,
then, smaller and lighter detectors with transistorized circuitry. It was not until the late 1960’s, however,
that real progress began to be made in developing stable and sensitive detectors that featured rudimentary
target identification and ground mineral rejection.

Garrett Electronics, founded in 1963 by my wife Eleanor and me, has been and remains a leader in
the development of all types of new and advanced metal detection equipment.
During the early years after World War II “mine detectors” were used almost entirely to prospect for precious metals. With technological advances, it became evident that metal detectors could find far more than nuggets and ore veins. Soon, they were being used to find such other types of treasure as lost coins and jewelry, caches and relics. We used metal detectors to explore ghost towns and find lost storehouses of treasure. Finally, we developed detectors that could be taken deep under the ocean where successful location of lost treasures worth millions and millions has brought them widespread notoriety.

The need for metal detectors in law enforcement and security applications was obvious; demand actually anticipated product development. Such uses have grown as technology has permitted, particularly in recent years. The walk-through metal detector is a familiar sight in airline terminals, but they are also used widely in numerous other locations where discovery of weapons is essential.

The actual “science” of metal detection, thus, is a relatively new one, and its applications are growing daily. Fields in which detection is growing in importance include medicine, archaeology, lumbering, food-processing and traffic control, to cite only a few.

**HOW DOES A METAL DETECTOR OPERATE?**

Just as knowledge of an internal combustion engine is not required for driving a car, it is not necessary to understand the scientific principles of metal detection to use a detector to find coins or lost jewelry—or to detect hidden weapons in an airport.

Similarly, just as knowledge of a gasoline engine makes one a better OPERATOR of a motor vehicle, understanding the how and why of metal detection results in a better TREASURE HUNTER. As its name indicates, this Garrett Guide explains these basic principles.

Metal is detected essentially by the transmission and reception of radio wave signals. This is true of any device designed for that purpose. What distinguishes quality metal detectors such as those manufactured by Garrett from those of lesser quality are the methods by which signals are transmitted and the sophistication with which they are received and interpreted.

When a radio signal is produced in the searchcoil of a metal detector, an electromagnetic field is generated that flows out into the surrounding medium, whether it be earth, rock, water, wood, air, or any other material. Electromagnetic field lines penetrate metal whenever it comes within the detection path. The extent of this pattern depends upon the power used to transmit the signal and the resistance of the medium into which the signal is transmitted.

The electromagnetic field generated by transmission from the searchcoil causes “eddy currents” to flow on the surface of metal detected by this field. Generating these currents on the metal causes loss of power in the electromagnetic field and the power loss can be sensed by the detector’s circuitry. Electromagnetic field lines passing through metal and generating eddy currents distort the normal electromagnetic field.

These currents and their resulting distortion of the electromagnetic field are sensed by a metal detector. Simultaneously, a secondary electromagnetic field is generated by the eddy currents into the surrounding medium. A receiver in the searchcoil detects these signals at the same time the loss of generating power is being detected. Circuitry of the metal detector interprets all these sensations and generates appropriate signals.

Eddy currents flow on the surface of any metal object (or mineral) having the ability to conduct electricity. Precious metals such as silver, copper and gold have higher conductivities and, appropriately, more flow of eddy current than iron, foil, tin or other less desirable minerals. Since metal detectors can “measure” the amount of power that is used to generate eddy currents, the detector can “tell” which metals are the better conductors.

Quite simply, the quality of these signals generated, received and interpreted by the metal detector and the ability of the treasure hunter to act upon them determines the difference between “digging junk” and finding treasure.

*Oh, that is could be that simple!*

Penetration of the electromagnetic field into the “search matrix” (that are over which a metal detector scans) is described as “coupling.” Such coupling can be “perfect” into air, fresh water, wood, glass, and certain non-mineralized earth.

Unfortunately, life is seldom perfect. The search matrix which a metal detector “illuminates” (through transmission and reception of signals) contains many elements and minerals – some detectable and some not, some desirable and some not. A metal detector’s electronic response at any given instant is caused by ALL conductive metals and minerals and ferrous non conductive minerals illuminated in the search matrix by the electromagnetic field. Detection of minerals is, in most cases, undesirable. Two of the most undesirable are also two of the most common: natural iron (ferrous minerals) found in most of the
Earth’s soil and wetted salt found in much of the earth’s water. Not only do these minerals produce detection signals, but they inhibit the ability of instruments to detect metal.

When iron minerals are present or near the search matrix, the electromagnetic field is upset and signals are distorted. Iron mineral detection, therefore, presents a major problem to manufacturers and users of metal detectors. Although detection of such minerals may be desirable when a prospector is seeking ferrous magnetite that could contain gold or silver; it is a nuisance to the hobbyist who is looking for coins, relics or jewelry.

A primary design criterion of any detector, therefore, must be to filter or eliminate responses from undesirable elements, informing the treasure hunter only of those from desirable objects. This is accomplished in a variety of ways depending upon the type of metal detector.

Such words as ground canceling, discrimination and elimination are used to describe the ability of a detector to seek out only desirable targets.

Electronic engineers accomplish this through various methods of circuitry which properly manage the normal electrical phase relationship among resistive, inductive and conductive voltage. Phase shifting is a phenomenon basic to the understanding of electricity. Management of it to enable a specific metal detector to “dial out” iron mineralization or other undesirable targets involves highly proprietary knowledge and circuitry protected by U.S. patents. Other members of the Garrett engineering team and I, incidentally, hold several dozen of these patents, including a number that are primary in the manufacture of metal detectors.

TREASURE HUNTING WITH A METAL DETECTOR

Metal detectors designed primarily for treasure hunting come in a wide range of sizes and shapes. They can also vary in price by hundreds of dollars with some models sold very inexpensively. It has been said, however, that a “cheap” detector has difficulty locating a penny lying on a vinyl floor. This Guide, therefore, will be concerned only with “capable” detectors…those with quality and the ability to find treasure.

Incidentally, “capability” should never be confused with “versatility” which will be discussed. A capable detector can be depended upon to perform the tasks for which it was designed-as long as the detector is operated properly.

What should a “capable” metal detector—one that will find treasure—cost? Answering a question with a question, one might respond, “What should a car cost?” The answers to both questions are the same. The price will depend on the quality of the detector (car) purchased and the features (options) it offers. And it is probably more important to rely on a good dealer when purchasing a detector than when buying a car.

Most detectors are designed to find coins because the vast majority of treasure hunters seek little more than coins. Some instruments, therefore, are designed principally for coins, and others are specifically designed for different hunting tasks. Some are made to operate in or under the water; others are primarily for cache hunting or prospecting. “Versatile” describes a most popular type of detector such as the Garrett Master Hunter series. This is the universal, or all-purpose, detector designed to fulfill any treasure hunting function on land. And, special submersible searchcoils available from Garrett permit the Master Hunter to be used for underwater hunting as well.

Let’s examine the basic features of a treasure hunting metal detector.

CONFIGURATIONS

Standard: The basic configuration of most detectors features a control housing attached to the handle and stem with a cable wound around the stem to the searchcoil. This configuration of the Garrett Master Hunter series is often called a “wrist action” model. Balance and weight are important in the selection of a standard configuration detector. Lightweight models can be used for long periods without causing much fatigue. Balance is defined as the ease with which a detector rests in the hand when held in normal operating position. Little effort should be required to hold the searchcoil in the air at operating height. Lightweight and good balance will result in minimal fatigue experienced both during and after treasure hunting.

Pistol-Grip: This type of detector usually features a built-in extension arm rest. Excellent balance and weight generally make it an instrument that a hobbyist can use for hours without tiring. With the detector as an “extension” of the arm and hand, its searchcoil stem lies along the same line as the forearm. Motion is accomplished without thinking since operation is almost as simple as “pointing a finger.”
**Hip-Mount:** This configuration features the control housing on a belt around the waist or slung over the shoulder with the searchcoil on an adjustable-length stem. An armrest is also usually supplied. This configuration to which some standard detectors can be converted is designed to relieve the arm of weight and to protect the control housing in some surf-hunting models.

**Environmentally Protected:** This type of detector can be standard, pistol-grip or hip mount configuration. Its distinguishing feature is that the control housing is protected against such environmental hazards as rain and blowing dust or sand. Some models are submersible in shallow water. Before any detector is submerged, the Owner Manual should be carefully checked or the manufacturer consulted.

**Underwater Designs:** The Garrett Sea Hunter detector is designed for use to depths of 200 feet. Designed for efficient land, surf and underwater hunting, it is built in the hip-mount configuration but the control housing can also be mounted on an arm, leg or the upper chest.

**SEARCHCOILS**

In considering searchcoils, the automobile analogy can be continued. Searchcoils have the same function as wheels on a car. Wheels take power from the motor and interface between the automobile and the ground. They roll along, take bumps and shocks to permit the car to perform its function of getting to a destination. Searchcoils take power from the control housing. Wheels take power from the motor and interface between the automobile and the ground. They roll along, take bumps and shocks to permit the car to perform its function of getting to a destination. Searchcoils take power from the control housing via the searchcoil cable. They are the interface between the metal detector and the ground. They take bumps and shocks as they scan to permit the detector to perform its function of finding targets.

A metal detector simply would not function without a searchcoil. Most searchcoils have transmitter and receiver antennas embedded within them. They come in many shapes and sizes. Roughly speaking, the smaller the searchcoil, the smaller the object that can be detected. Larger searchcoils detect deeper and larger objects.

Effective searchcoils must have electronic shielding, and they should be waterproof. Even if a hobbyist doesn’t intend to hunt in shallow water, searchcoils should be able to resist moisture that will occasionally be encountered. As a matter of fact, all Garrett searchcoils not only “resist moisture,” they can be submersed in water without damage. A good searchcoil is vital to the success of a metal detector. No hobbyist should seek a “bargain” in purchasing a searchcoil!

“Standard” size: This is a misnomer because there is no “standard” size searchcoil. The coil that operates ideally in a park may be next-to-useless on a junk-filled beach. The searchcoil that finds coins would rarely be used to search for a cache. Searchcoils come in a wide range of sizes:

**Diameter of seven to eight inches:** This size searchcoil is furnished with most detectors, which is proper because this is the best general-purpose size. They are usually lightweight, have good scanning width and are sensitive to a wide range of targets. Small objects can be detected, and good ground coverage can be obtained. Shallow scanning width is approximately equal to the diameter of the searchcoil. Depth of detection is satisfactory for most targets with a searchcoil of this size.

**Three to four inches:** This size searchcoil is generally referred to as a Super Sniper. Its intense electromagnetic field gives good detection of small objects, and its narrow pattern permits excellent target isolation and precise pinpointing. Depth of detection is not as great as that of larger sizes. Remember, however, that a searchcoil illuminates everything in the search matrix. In high junk areas it is possible to find targets with a Super Sniper that would be masked by junk signals if a larger coil were used.

**Ten to twelve inches:** Searchcoils of this size while able to detect coin-size objects at great depths are also classified as the smallest searchcoils to be used for cache and relic hunting. Precise pinpointing is obviously more difficult with the larger sizes, and their increased weight usually necessitates the use of an armrest of hip-mounted control housing, especially when the detector is used for long periods.

**Depth Multiplier Attachment:** This special attachment, which Garrett calls the “Bloodhound,” multiplies the depth that an instrument can detect. Larger searchcoil sizes can increase depth multiplication factors on the order of two to three times. For example, a large cannon or safe can be detected to a depth of seven feet with a 12-inch searchcoil, the Bloodhound can locate it to perhaps twice that depth.

**HEADPHONES**

For maximum success a treasure hunter should use headphones whenever searching with a metal detector. They are essential in noisy areas, such as the beach and near traffic. They enhance audio perception by bringing the sound directly into one’s ears while masking outside noise interference.

Most persons can hear weaker sounds and detect deeper targets when quality Garrett headphones are used. They come in several sizes and configurations, the most popular being stereo types that cover the
ears. For those detectors without volume controls headphones can offer the control that allow a wide degree of loudness adjustment without degrading the sound quality.

Reducing sound volume to silent on a detector is accompanied by loss of detection depth and sensitivity. Detectors should always be operated with the audio control adjusted so that just a faint sound (threshold) comes from the speaker. Headphones allow this threshold to be set even lower, giving improved performance.

**DISCRIMINATION**

Most modern metal detectors have controls that allow an operator to “dial in” the targets being sought: that is, the detector circuitry and controls permit the operator to indicate the desired target elimination (discrimination). With various targets placed on the dial in the order of their conductivity the operator sets his controls to indicate which targets the detector should accept and which it should reject.

The detector reports information on targets to the operator through meter deflections and increases or decreases in audio volume. Acceptable objects cause the audio or visual indicators to increase in amplitude; unacceptable objects cause the indicators to decrease. Target identification indicators can provide additional information to the operator concerning the possible “value” of targets.

**THE DETECTOR ITSELF**

Metal detectors over the years have been made with various kinds of circuitry to transmit and receive signals. Many of these, though considered obsolete today, still perform capably. Because the Very Low Frequency (VLF) ground eliminating (canceling) type detector is far and away today’s most popular, it is the type that this Guide will discuss. The VLF name comes from the operation of this detector in the Very Low (radio) Frequency spectrum of 3 to 30 kilohertz.

Because VLF’s can be designed with circuitry that is not bothered by the disturbing effects of iron minerals, circuit gain can be made higher; thus, improving sensitivity (smaller targets can be detected) and greatly increasing detection depth.

**HOW TO FIND TREASURE WITH A DETECTOR**

These exercises will be helpful in learning how to use a metal detector while gaining confidence in its abilities. No short course, however, can ever substitute for study, application and continual practice.

These instructions are for the popular manually adjusted VLF detector.

1. Read carefully the Owner Manual accompanying the detector; read it again; study it.
2. Follow instructions to assemble the detector, using the smallest diameter searchcoil, if more than one is available.
3. Set all dials to “Preset Points” if they are specified in the manual or on the detector’s controls.
4. Hold the detector with the searchcoil about three feet off the ground. Turn the detector on.
5. Adjust the audio control to dial out all sound, then turn it on slowly until just a faint sound is heard. This is called threshold level.
6. Lower the searchcoil to a height of about two inches above the ground and begin scanning.
7. While scanning, when the sound increases and/or an indication is shown on the meter, a target is buried in the ground below the searchcoil.

Techniques of treasure hunting with a metal detector are many and varied. This Guide will offer only a few simple recommendations:

- Set the volume control to a minimum threshold level. If silent operation is desired, always make certain that such operation is just below an audible level. Silent audio, however, should NEVER be used when operating in the All Metal mode or targets will be lost.
- Never dial in more Trash Discrimination than you need; too much may reduce detection capability.
- Run down batteries are by far the single most common source of detector “failure,” be sure to check your batteries before venturing out, and carry spare batteries whenever you are searching.
- Learn to use a probe to locate the exact spot where coins are buried; this will help you retrieve coins with minimum damage to grass and the target.
-Always fill in your hole after you dig a target; holes are not only unsightly, but they can be dangerous. Before filling a hole, however, be sure to check it again with our detector to make certain you have recovered everything in and around it. It’s embarrassing to have someone recover a target from a hole you originally dug. I know; it’s happened to me!
-Don’t expect to find lots of treasure every time you go hunting; there may be times when you find nothing. The hobby’s real joy and reward is the thrill of never knowing what you’ll dig up next!

**MODE SWITCHING**

Some detectors now permit the operator to change the instrument’s mode of operation simply by turning a dial or flipping a switch (or pressing a touchpad on the Grand Master Hunter). Perhaps the questions I receive most often-and, not only from novice metal detectorist-concern these various modes of operation. “Which mode should I use?” or “When do I change modes?” are typical of the questions that I hear.

Listed below are descriptions of modes presently in use on the VLF ground-canceling detector with a recommendation on the use of each mode:

*Automatic (Tuning):* For use when drift becomes a problem or simply when it is preferred. Compare Manual and Automatic operating characteristics such as detection depth and discrimination before using.

*Automatic (or Motion):* Very popular in newer models, this type detector is especially suited to coin hunting but is quite capable of performing other THing tasks.

*Coin Depth Measuring:* For use when searching for coins and estimate of probable depth is desired.

*De-tuning:* For use when searching only for very shallow targets and the most precise pinpointing is desired.

*Electronic Pinpointing:* For use to achieve fast, quick pinpointing that is more accurate than regular pinpointing.

*Retuning:* For use any time the audio drifts away from preset threshold. Threshold should be maintained by retuning as often as necessary.

*Silent (No Audio) Tuning:* For use when the steady tone of audio threshold is not desired. This mode will lose some detection depth and sensitivity no matter what type of detector is used.

*Threshold (Audio) Tuning:* For use when the greatest detection depth and sensitivity is desired.

*All Metal:* For use when the operator desires to dig every target; when gold (precious metal) searching; when cache and relic hunting and at all other times for detecting to maximum depth. For use over both mineralized and non-mineralized ground.

*Calibrated:* For use when ore sampling (high grading) or identifying hot rocks.

*Discrimination:* For coin hunting when the operator does not want to dig every target or especially when “trash” targets are not to be dug. Not for cache hunting or prospecting. For use over both mineralized and non-mineralized ground.

**CODE OF ETHICS**

Filling holes is but one requirement of a dedicated metal detector hobbyist. A sincere request that I make to every user of a Garrett detector is to leave each place searched in better condition than it was found. Thousands of individuals and organizations have adopted a formal Metal Detector Operators Code of Ethics:

“-I will respect private and public property, all historical and archaeological sites and will do no metal detecting on these lands without proper permission.”

“-I will keep informed on and obey all laws, regulations and rules governing federal, state and local public lands.”

“-I will aid law enforcement officials whenever possible.”

“-I will cause no willful damage to property of any kind, including fences, signs and buildings, and will always fill hole I dig.”

“-I will not destroy property, buildings or the remains of ghost towns and other deserted structures.”

“-I will not leave litter or uncovered items lying around. I will carry all trash and dug targets with me when I leave each search area.”
“-I will observe the Golden Rule, using good outdoor manners and conducting myself at all times in a manner which will add to the stature and public image of all people engaged in the field of metal detection.”

Policing this code is an important job of the scores of local Metal Detector Clubs organized over the nation. Clubs varying in size from a few members to hundreds meet regularly for fellowship, to share adventures and to compare their success in the field and water. At the same time, these sincere hobbyists seek knowledge of new developments in the science of metal detecting and try to remain abreast of the rapidly changing laws and regulations that govern their hobby.

**The Laws of Metal Detecting**

The legal aspect of treasure hunting with a metal is a complicated subject indeed. And, that is gross understatement. Laws apply to virtually every treasure-hunting situation and the rules vary widely. Each state has its own laws concerning where and how treasure may be hunted. The hobbyist is well advised to know the laws of the area in which he is searching.

All states have laws against trespassing. When a sign says, “Keep Out,” the hobbyist should obey. Always remember that a person entering private property and removing objects without permission can be prosecuted for trespass and larceny, regardless of the presence or absence of “No Trespassing” signs. It is always best to seek permission, and, perhaps surprisingly, it will often be granted-especially when a “split” of all finds is proposed to the property owner.

Public property is usually open to all. Special rules may apply to the use of metal detectors, but the guiding rules is to obey the Code of Ethics, filling all holes and protecting property.

In the United States “treasure trove” is broadly defined as any gold or silver in coin, plate or bullion and paper currency that has been found concealed in the earth or in a house belonging to another person, even when found hidden in movable property belonging to others such as a book, bureau, safe or a piece of machinery. To be classed as treasure trove the item(s) must have been lost long enough to indicate that the original owner is dead or unknown.

All found property can generally be separated into five legal categories: abandoned, concealed, lost, misplaced and that embedded in the soil.

Abandoned property, as a general rule, is a tangible asset that has been discarded or abandoned willfully and intentionally by its original owners. Thus, it becomes the property of the first person who discovers and desires it. An example would be a household item such as an appliance discarded into a trash receptacle. If the trash collectors (or anyone else, for that matter) decide to take the appliance, they can do so legally.

Concealed property is tangible property hidden by its owners to prevent observation, inventory, acquisition or possession by other parties. In most cases, when such property is found, the courts order its return to the original owner. Sometimes the finder is given a small reward, more for his honest in reporting the find than for the effort of discovery.

Lost property is defined as that which the owner has inadvertently and unintentionally lost yet to which he legally retains title. Still, there is a presumption of abandonment until the owner appears and claims such property, providing that the finder has taken steps to notify the owner of its discovery. Such a case might arise when someone finds a lost wallet that contains documents identifying the owner. It is the general rule that such property must be returned to its owner, who pays a reward if he so desires. In fact, in almost every jurisdiction a criminal statute exists that makes it a crime to withhold “lost” property.

Misplaced property has been intentionally hidden or laid away by its owner who planned to retrieve it at a later date but forgot about the property or where it was hidden. When found, such property is generally treated the same as concealed property with attempts necessary to find its owner. When this is not possible, ownership of the property usually reverts to the occupant or owner of the premises on which it was found with the finder being rewarded some amount of the object’s value.

Things embedded in the soil constitute property other than treasure trove, such as antique bottles or artifacts of historical value. The finder acquires no rights to the object, and possession of such objects belongs to the landowner unless declared otherwise by a court of law. Generally, courts divide the value of the find between the property owner and the finder.

Maritime salvage laws are necessarily complicated since they often deal with items of considerable value. Broadly stated, such laws are designed to reward those who “rescue ships and property from the perils of the sea.” These laws are designed to guarantee a monetary reward to those who salvage lost or abandoned property in peril and return it to its owner. If the owner is not interested or died centuries ago, the property MAY belong to the salvor. Mel Fisher gained worldwide fame in 1987 when he found the Spanish galleon Nuestra Senora de Atocha after a 17-year search. To discover this ship with
its precious cargo worth hundreds of millions of dollars Mel spent vast sums of money to hire divers, support vessels and the like. Such amounts, however, were EXCEEDED by his courtroom-related expenses. Big-time treasure hunting requires big-time legal fees.

Finally, don’t forget income taxes-federal, state and local. Monetary gain from any treasure found must be declared as income in the year it is received; applicable expenses can be charged against it. Simply stated, however, tax laws require declarations of all income from treasure hunting.

HEALTH AND SAFETY

Some first-time users of metal detectors occasionally complain of physical aches and pains. Such complaints usually come from someone with enthusiasm who has swung a detector all day. Of course, he or she is going to wake up next morning with sore muscles. The soreness soon disappears, however, and off they go again.

The following recommendations are given to help avoid strained and sore muscles:

1. Select the proper equipment, including accessories. This particularly concerns the stem—if it is too long, you will have a balance problem; too short and you’ll have to stoop over to search. If searchcoils are not in proper balance, the hobbyist should use an armrest or hipmount configuration.

2. Strengthen hand, arm, back and shoulder muscles with a regular, planned exercise program. Not much is really required here; in fact, using a detector will probably develop the proper muscles. At the beginning or after a period of inactivity, however, a hobbyist should protect against strained muscles and ligaments.

3. Warm up exercises before each day’s activity are generally the answer. Just a few minutes of stretching, bending and lifting. Take an occasional break; stopping to dig a target usually provides sufficient break time.

From the standpoint of health and safety the worst things that will ever befall a metal detector hobbyist are sunburn and getting wet in a sudden storm. Even these can be minimized by sunscreen, proper clothing and following common sense rules of exposure.

A little muscle soreness that can be blamed almost entirely on enthusiasm, therefore, is the primary health hazard facing the metal detector hobbyist.

ARCHAEOLOGY AND THE METAL DETECTOR

Some archaeologists use metal detectors; others refuse to consider their use. Yet, metal detectors are nothing more than tools, and many archaeologist, particularly in colleges, are using them effectively at historical sites. More than one noted professor has told me how a Garrett detector has helped him and his students to do a better job of excavating and writing reports.

A classic example was the work done at the Custer Battlefield site in Montana. Archaeologists deployed detectors on a foot-by-foot survey, and the results were astounding. For example, shells from Troopers’ carbines and Indians’ rifles established previously unknown skirmish lines and disclosed such facts as: by the end of the battle Indians were using Army ammunition and weapons, presumably taken from dead soldiers. Because of metal detectors our knowledge of the mysterious fate of the 7th Cavalry was enlarged.

Using a detector can give an archaeologist “preknowledge” of the location of every metal artifact in his site. It can also help prevent damage to artifacts. Since they are known to exist in a specific spot, extra care can be taken in excavating them.

Metal detectors have been especially helpful under water. A Garrett Sea Hunter was used by one of Mel Fisher’s divers to locate the “mother lode” of the Atocha, a fortune in silver, gold and emeralds that sank in 1622. Duncan Mathewson, chief archaeologist for the Florida-based group of divers and investors that found the ship, calls it “an enormous time capsule, as important as Pompeii, or even King Tut’s tomb.”

The subject of metal detectors often causes heated debate among archaeologists. Some not only refuse to acknowledge it as a viable tool but brand its users as “artifact collectors.” Frankly, this distresses me. As they recognize the value of metal detectors in archaeology, serious metal detector hobbyists place historical knowledge far above any monetary value to be gained from artifacts. Leaders in the hobby of metal detecting strongly warn against encroaching upon an established or defined historical site.

Hobbyists should develop a rapport with archaeologists and understand their needs. They can learn applicable laws, then take an active part in writing and passing improved legislation. All of us can stand ready to instruct historians in the use of our instruments.
At the same time, however, we urge respected archaeologists not to encroach upon treasure sites by imposing general restrictions on locations that represent no value to archaeology. Certainly, thousands of sites contain relics from the past that might interest archaeologists. This fact is not disputed. Yet, keeping treasure hunters from all such sites is wrong! Not only will all of these “historical” sites never be searched, the passage of time will continue to destroy them along with their artifacts. Natural erosion and decay will take its toll along with the bulldozers and earth-moving equipment of road-builders and developers. Why not let the metal detectorist search sites that historians and archaeologists know realistically they will never work?

In the archaeologist-treasure-hunting dispute, I find myself arguing both sides, both in writing and in the field. I believe that the record at the Custer Site on the Little BigHorn represents the sort of cooperation that should be fostered. We can all work together, or, at least not hinder each other.

Regardless, all of us involved with the hobby of metal detecting must be ever responsible to insure conservation and proper management of our archeological resources.

OTHER USES OF METAL DETECTORS

This Guide has been concerned principally with the use of metal detectors by hobbyists to hunt for coins, jewelry and other lost items. There are other more commercial uses, however, and the most obvious of these is the use of walk through metal detectors to discover hidden weapons at airports, courtrooms, public buildings, jails and other detention facilities. Unfortunately, this is the age of the terrorist. Mindless and anarchistic terrorism can instantly transform order into chaos. Proper use of metal detectors helps prevent this. Small, hand-held scanning devices are used body searches to enable rapid and effective searching of all suspects without the necessity of disrobing areas or the loss of any privacy.

Hobby-type metal detectors also have their place in law enforcement. They are used primarily for finding lost or abandoned evidence and contraband, both on land and in the water. They can also help investigators search a crime scene more thoroughly.

In industry and medicine detectors have proven valuable wherever the presence of metal is sought, whether it be in non-destructive testing, in the operating room or on an assembly line.

CONCLUSION

Metal detectors, thus, play an important role in the life of almost everyone…whether he or she knows it or not.

The purpose of this Guide, however, has been to acquaint the reader with the potential for exercise, pleasure and profit through the hobby of metal detecting. It serves only as a basic introduction with more information available in the many books available from Ram Publications. By no means is the Guide meant to serve as “operating instructions” for that new detector you intend to buy. Always study your manual.

I certainly hope that you WILL buy a detector, however, and join the many thousands of us who now enjoy the hobby. When you do, maybe I’ll see you in the field!

PS. Two of Garretts best selling computerized detectors are now on a Special Model Closeout Sale, discounted almost 40%, with FREE detecting accessories included. Less than 100 models of each are all that are left. Too good a deal to pass up!

Visit www.kellyc.detectors.com then click on GTAX1000 picture (or GTAX500) for SPECIAL DISCOUNT SALE information, or call Toll FREE 1-800-327-9697 to talk to a trained detectorist.

Reprinted with permission from Charles Garrett