White's Electronics Spectra V3

By Andy Sabisch

White’s Electronics is a metal detector manufacturer that needs no introduction. In operation for almost 60 years, they have developed the reputation of building quality equipment with enviable dependability which has often been standard setting in terms of what other manufacturers worked to meet. Following years of development by their engineering staff and countless hours of in-field testing by some of the leading detectorists worldwide, White’s has once again raised the bar in terms of features and performance of high-end detectors.

Their latest addition is called the Spectra V3 and brings technology and features to the metal detecting industry that even six months ago would have been dismissed as being nothing more than wishful thinking on the part of users. After spending a number of hours in the field with this new detector, I realized this field test would be a challenge to cover what the Spectra V3 was capable of within the constraints of the article length, but here goes.

Features

When White’s started developing the V3, they wanted to design a detector that would satisfy the needs of treasure hunters ranging from novice to veteran. They also worked to address comments and requests received from end-users over the years in an effort to set a new standard of performance in terms of detector technology and usability. So, were the engineers successful? Let’s jump into an overview of some of the standout features on the V3 and see.

The Spectra V3 is not simply a mildly updated model that was already in the White’s line, but rather an entirely new unit designed from the ground-up. The Spectra V3 is a VLF-based detector that can operate on three separate frequencies simultaneously for optimal all-purpose hunting, or on any one of the three frequencies when enhanced performance for specific applications is desired.

The frequencies and the type of targets they are optimized for are: 2.5 kHz (copper & silver), 7.5 kHz (brass or simply general hunting), and 22.5 kHz (nickel, gold or small targets). The ability to alter the operating frequency or combine them with a few keystrokes is unique to the V3 and is a real advantage in the field as conditions or needs change.

It uses the familiar proven and rugged metal control box with a new color screen mounted above the padded handgrip…yes you read right – color! The screen – which measures 2.5”x2.75” – was designed to allow it to be easily seen under conditions ranging from direct sunlight to total darkness (thanks to the backlight feature…and the touchpads are also glow in the dark).

Picking up the assembled V3, its exceptional balance is readily apparent. Sporting the new 10” D2 Double-D coil, it feels much lighter than it is, allowing for hours of fatigue-free searching. The D2 coil provides better performance in mineralized soil or areas with a high ferrous-trash content; however, optional coils are available to expand the V3’s versatility.

Turning it on brings up the user-friendly menu system. The initial screen contains six distinct areas of adjustment-PROGRAMS, SENSITIVITY, AUDIO, DISCRIMINATION, FREQUENCY and GROUND TRACKING. There are multiple adjustments or options to choose from in each of these, but the way they were grouped makes it easy to find a specific adjustment when needed. The PROGRAMS option offers users 10 separate pre-defined collections of settings that cover just about any type of detecting you can imagine doing and were developed through extensive real-world testing before the V3's release.

To start hunting right out of the box, simply press MENU, highlight the PROGRAMS option, press ENTER, select the type of hunting you are interested in, press ENTER again and pull the trigger twice… that's all there is to it! So, while a beginner can take advantage of the V3's performance with virtually no adjustment required, experienced hunters can fine-tune it to suit their specific preferences and site conditions through the various menu options.

Before the thought of remembering what individual menu options mean scares you away from the V3, White's engineers have you covered. When you highlight any menu option, simply press the toggle switch forward and a "balloon" pops up on the screen that provides a short explanation of what the function does. In addition, they renamed some of the functions that were somewhat cryptic on past models with names that make it quite simple to figure out what each does.

All adjustments are made using the eight glow touchpads located beneath the display screen and the trigger switch located in front of the handgrip and, with just a few minutes of practice, navigating through the various screens becomes second nature. Another feature that shows White's thought of the end-user in the field is the ZOOM function which allows the text on the menus to be enlarged to 1-of-4 levels of magnification, making the menu easy to read and hence adjust as needed.

When searching, three screens provide a great deal of useful information. With the trigger in the middle position, the V3 is in the SEARCH mode and brings up the Signagraph data in the center of the screen. It shows the strength of individual frequencies being processed which aids in target identification. Also displayed will be a target ID value (ranging from -95 to +95), icon(s) indicating probable target ID, target depth, icons showing the status of specific features and another unique feature called "Live Controls" along the bottom of the screen. Pushing the trigger forward places the V3 in the 2nd search mode called ANALYZE. While much of the information is the same as shown in the SEARCH mode, the center region now displays lines called "Target Signatures" which can provide not only valuable target ID information, but target sizing as well.

An innovative feature associated with the Target ID icons that are displayed is tha,t depending on the PROGRAM selected, different icons will appear; i.e., coins, relic, prospecting, etc. Holding the trigger in the rear position activates the PINPOINT mode. No motion is required to detect targets in this mode and the center section changes to provide signal strength on each of the operating frequencies, which is helpful when trying to pinpoint a good target amongst trash.

The V3's LIVE CONTROLS feature is unique to LCD touchpadcontrolled detectors and has proven to be a real asset in the field. Unlike other touchpad detectors where you have to exit the search mode to make adjustments via a menu selection, V3 users can actually scroll along

the bottom of the screen, select a specific set of functions to adjust and call them up while still detecting.

Once you come across a target, you can make fine adjustments to any function to enhance the response as you continue to sweep the coil over the object. Once you get the optimal response, a few keystrokes and you can save it for future use. LIVE CONTROLS simulates the functionality of a knob found on non-computerized detectors and allows you to make "on-the-fly" adjustments to hone the Spectra's performance.

For those that like to customize things to suit their needs, the V3 is the most versatile detector on the market today. Any of the settings can be adjusted for optimal performance and personal preference, and these adjustments can be easily stored in the on-board library with unique names and recalled for later use. Not only can any specific function be adjusted, but items such as the specific colors used on individual screens, tonal response from individual targets, icons displayed for specific targets or groups of targets, and program names can be changed and saved. Saved files can even be shared between other V3's using the unique wireless communication system built into each unit! NOTE: All programs and settings are retained even when the battery pack is removed.

Speaking of wireless, have you ever been hunting and either stepped on your headphone cord or gotten snagged on a tree branch? Well, the V3 has a unique, wireless headphone system integrated into the onboard circuitry that eliminates the cord and has no audio delay typical to other wireless headsets on the market. A useful benefit of the wireless system is that you can have multiple users listening to one V3 if a training session is desired. Corded headphones as well as the built-in speaker can also be used.

The V3 comes with two drop-in battery packs – one being a NiMH rechargeable pack (with a charger included) and the other designed to hold 8 AA batteries. A NiCad pack is also available and the type of battery in use can be selected from the menu for more accurate monitoring of battery life. The NiMH pack provides 10-12 hours on a charge.

Field Test

As with any new detector, the first place I took the V3 was my test garden where I could see how it responded to known targets at known depths. Trying a few of the factory-provided programs, including COINS, RELIC & DEEP SILVER, the "out-of-the-box" performance was quite impressive. Even more impressive was the LIVE CONTROLS feature which allowed me to tweak several settings to bring the deeper targets, or those adjacent to trash, in even stronger than they had. I found the Live Controls to be very intuitive and clearly improved performance with on-the-fly adjustments as I swept across the buried targets.

With a well-established local club, most of the "easy-to-find" sites have been hunted many times over the past 30 years, but, as they say, no place is ever really hunted out…it just depends on how much time you are willing to put into finding what's left. Hoping to see what the V3 could do in a few of these sites, I selected sites that dated back to the 1800's, including two parks and an old cotton mill ball field.

Starting with the basic COIN & JEWELRY program, I made a few adjustments to options in the SENSITIVITY & AUDIO menus, quickly ground balanced the detector and started hunting.

NOTE: While the V3 does provide for automatic ground tracking, manually setting the ground balance when starting is highly recommended. It is quite simple and takes under 30 seconds to accomplish. The first 30 minutes turned up a fair number of clad coins and the typical modern trash. Since I was testing the detector, I recovered all repeatable signals and found the ID accuracy to be deadon in most cases. I preferred the ANALYZE mode since it provided both the Target Signature display as well as the sizing information, which I recognized as being a help in identifying and ignoring some larger, mangled trash items that produced questionable target ID readings.

Near the back of one park, I received a softer sounding signal and gave a picture-perfect sine wave Target Signature on all three frequencies indicating a coin-sized object. To see if I could enhance the response, I brought up the Live Controls for SENSITIVITY, DISCRIMINATION & GROUND BALANCE/TRACKING.

Adjusting selected options in both, I found that, with slight changes, the signal came through stronger and provided a more consistent target ID. A few keystrokes allowed me to save these settings. Pinpointing was simple and removing a deep plug-about 8"- revealed the edge of a coin. Pulling it free, I was surprised to see it was an Indian Head penny dated 1905 and the first one I had ever found at this park.

Several trips to sites in nearby Charlotte netted me more then twodozen older coins dating back to the late 1800's from areas others and I had hunted extensively in the past. The "tweaked" programs brought out more of the V3's true potential and, with each trip, subtle adjustments produced better results and were saved for future use.

A few old foundation sites also proved to be a good test of the V3's RELIC mode. With just a few adjustments to the preset options, such as sensitivity levels, audio options and ground filters, targets were readily detected and identified at depths exceeding 12" for items such as spoons, shoe buckles and the usual "what-is-its" one finds relic hunting.

I took the V3 with me to the Treasure Expo held in Myrtle Beach in early-April and, while the crowds had not been there to leave goodies, it would provide an opportunity to see how it handled black sand and saltwater. Heading down to the beach one evening, I simply selected the SALT BEACH program, did a quick ground balance on the wet sand and started searching.

Having used other White's detectors such as the M6 and DFX, as well as other conventional VLF-detectors in this environment before with less than impressive results (falsing, chattering & limited sensitivity), the V3 was clearly at home in the wet sand region. Signals were few and far between due to the time of year, and at times I had to pass my scoop over the coil to make sure it was still operating; there was no falsing and the threshold was "rock-solid." The deepest target I recovered in the wet sand was a pull-tab at 10"+ and coins came through clearly down to just shy of that, but even lifting the coil a few inches off the ground produced signals that would have been recovered.

As I walked back to the hotel across the dry sand, I picked up a thin gold chain bracelet laying stretched out at 3". A friend swept the area before recovering it with another high-end detector and could not get a signal. Overall, the V3 handled wet, black sand better than almost any other VLF-detector and was able to obtain fairly impressive detection depth using the predefined SALT BEACH program.

Unfortunately with the space constraints of this article, there are a number of features I was not able to cover in the level of detail I would have liked; however, this information, along with details of my in-field experiences and specific adjustments made in the course of the testing, are provided in the on-line version of this report at LostTreasure.com.

Summary

The effort put forth by the engineers at White's is clearly evident in the new Spectra V3, starting with the outward appearance and construction to the first-rate user-interface and ending with the actual in-field performance it provides.

It is a detector that can be used right out of the box by someone that wants the best without complicated adjustments, yet offers even the most discriminating and experienced detectorist the ability to truly tailor it to fit their personal preferences or hunting styles.

Each time I have been out with it, or talked to another V3 user with more time under their belt than I do, I've learned something new and found yet another way to get a tad more performance out of it. Years of development and testing went into the V3's design and, while it is clearly a well thought-out piece of equipment, I'm certain that owners will find ways to set or use it that may never even have been contemplated by the engineers.

White's Electronics Dfx

By Joe Patrick

It is said, good things come to those who wait, and for many Whites metal detector users and customers, who have been eagerly awaiting Whites new multifrequency metal detector, the wait is over! The new, dual-frequency, model DFX is now available and it provides unparalleled versatility and performance.
Over the past few years, I have successfully used Whites XLT Spectrum on many detecting outings and have become comfortably-familiar with its operation and performance.
Without doubt, the XLT Spectrum is one of the most innovative, versatile, high-performance and popular metal detectors ever produced. Many say it provides the best visual and audio tone identification ever designed into a metal detector.
Now, imagine taking all of the XLTs best features and thrusting its electronic design a quantum leap forward . . . this takes us precisely to the new dual-frequency DFX!
Although the XLT Spectrum and DFX appear very similar in their outside appearance, they are uniquely different inside, in their electronic design, features and performance.
The most significant aspect of the new DFX is that it can be operated as either a dual or single frequency metal detector. The dual frequency mode provides two distinct, separate channels of signal information and analysis, which increases its in-the-ground performance and I.D. and discrimination accuracy.
Two operating frequencies of 3 kHz and 15 kHz have been optimally selected to provide the best sensitivity to coins, artifacts and jewelry, while simultaneously providing the best detection depth, discrimination and ground and saltwater cancellation. By using 3 kHz or 15

kHz search modes separately, in single-frequency operation, or by selecting both, the DFX can be precisely user-adjusted to match the type of detecting desired and the ground conditions of the site being searched.
As a quick rule-of-thumb, the 3 kHz mode is best used for difficult ground conditions and the 15 kHz is best used for searching for jewelry and other low-conductivity items. Of course, the dual-frequency mode provides the best of both.
While using the DFX in its dual-frequency mode, a user may choose either Best Data or Correlate as the method of target analysis.
Best Data, looks at the information from both frequency channels and uses the one with the most reliable and accurate information. Correlate, also looks at both channels and if the data is not similar in both channels, rejects the target.
Iron objects tend to give different readings at different frequencies. Therefore, Correlate, is more adept at rejecting iron targets than is the Best Data setting.
Controls & Features
There are many new, significant features designed into the DFX and as a quick reference, I would like to itemize and give a brief description of each.
Multiple Frequency Operation Search in 3 kHz, 15 kHz, or both frequencies simultaneously. Selecting Best Data displays the most reliable target information, or use Correlate to better reject iron and other questionable targets.
4 EEPROM (user) hunting programs Use these pro-designed programs or erase them and create, name and store your own custom programs.
High-definition, extended temperature display Easier to see, with double clock speed for very fast target response.
DSF Digital Signal Filtration Change the ground filtering at will, from 2 filters to 6. Use 2 for quick response in high-trash areas or 3, 4, 5, up to 6 for superior depth in mineralized soil.
Sweep Speed Adjust Use higher settings to move quickly through an area with few targets, and lower settings when you want to move more slowly through areas where you need to get in between trash.
Hot Rock Rejection A complete range from total acceptance to total rejection.
9 Turn-on-and-Go! Programs Ready to hunt right out of the box. Completely automatic.
10 Basic Adjustments and 34 Pro Options Adjust virtually every aspect of your hunting. Popular adjustments include Tone I.D., Sweep Speed, Silent Search, Fade Rate, Recovery Speed, Block Edit, AutoTrac Speed . . . and more.
Whites DFX, like the XLT Spectrum, is a full-featured metal detector having many features and user-options available . . . too many to adequately detail in the limited space of a magazine field test. To truly appreciate the performance and versatility of Whites DFX requires that you own and use one. Only then, can you fully realize its maximum capability, as I have, reflected by the actual finds you have made!
Field Use & Findings
One of the most interesting and productive features of the DFX is its Digital Signal Filtration (DSF) option. This single item enables the DFX to handle just about any type of ground or search condition at will. Its net effect is like owning two or three different types of metal detectors. If you need a slow sweep-speed, fast-recovery, two or three-filter mode for trashy sites . . . the DFX can be adjusted to do that. If you need a faster sweep-speed and the ability to handle mineralized ground better . . . the DFX can be set to 4, 5 or 6 filter mode and the sweep speed setting increased. Talk about versatility this is a feature worth its weight in gold or silver!
I used the DSF and variable sweep-speed options a lot during my field test . . . when I searched parks and areas within them that varied from the pulltab and bottlecap infested picnic pavilions to the wide-open fields and wooded locations. Having the ability to adapt the

DFX this easily and quickly absolutely increased my overall finds. I found these features to be very helpful and valuable and used them at every site that I detected. DSF is one of those features that once you have it and use it you never want to be without it!

I usually searched in either the 3 or 4 filter mode, then quickly selected either 2, 5 or 6 filter mode (as needed) by pressing the down arrow (Quick) key of the keypad and then selecting the desired filtration.

While searching a wooded hillside near an old homesite using the 3-filter, dual-frequency mode I found a worn, very thin, 1906 Barber dime at the base of a very large Oak tree. Because I had found no other coins in this area, I believe that it had been previously detected. Due to the trees massive size and dominance over the area, this old Oak would have been one of the first places anyone with a detector would have searched.

During retrieval, I noticed that the coin was tilted almost on edge. Even for the DFX, it was a somewhat questionable hit that registered mostly like a quarter; but it was good enough to make me want to dig. I believe it was the dual-frequencies of the DFX that made this discovery possible.

At another hard-hit site, searching the woods behind an old picnic shelter in the 2-filter mode, I found a silver 1957 Roosevelt and 1942 Mercury dime, and a handful of Wheat cents and clad coins mixed-in with years of accumulated trash, ALL at only a few inches depth.

I totally attribute these easy finds to the 2-filter mode and its ability to selectively pick out the good items from the trash items.

Shallow coins that have been missed previously (especially at hard-hit sites) usually indicate that other detectors masked out going over them, due to a nearby piece of trash. This is where using the 2 or 3 filter mode and sweep speed adjust option of the DFX will pay off.

Like the XLT Spectrum, the DFX makes use of Whites excellent display technology. The SignaGraph bar graph, VDI numbers and Target Icons all contribute to providing the user with very informative and useful target information. The bottom line more good finds and less trash!

I quickly discovered that the DFXs power and sensitivity needed to be handled with care. Those who have used or are currently using Whites XLT, keep in mind, the DFX IS NOT an XLT. Some of the programs, settings and levels that brought you success with the XLT may not produce the same results with the DFX. The DFX is a different detector and you will need to use it a little differently.

In some detecting situations, I incorrectly pushed the A.C., D.C., Preamp and/or V.D.I. gain too much, making the DFXs operation unstable, inaccurate and frustrating. By experimenting with, and then backing down these settings, I was finally able to increase accuracy and smooth-out its operation.

The DFX provides more than enough gain to match any detecting situation. I believe that this is precisely the way a metal detector should be designed. Provide more than whats needed, rather than not enough. A user can always scale back a little when required, but can never increase whats not there to begin with!

Conclusion

In the September 2000 edition of Lost Treasure magazine, I field-tested Whites Spectrum XLT.

Yes, this is exactly how I feel about Whites new DFX metal detector!

The features and improvements designed into the new DFX are not cosmetic, nor are they gimmicks. They are real nuts and bolts improvements that directly equate to better performance and significantly increased versatility.

Whites new DFX retails for $1,099.95 and includes a standard slide-in alkaline battery pack; slide-in NiCad battery pack, with slow or fast charge option; waterproof 9.5-inch search coil and an excellent owners manual.

With its faster visual display, adjustable two to six Digital Signal Filtration, additional search modes, variable sweep speed and single or dual-frequency operation; all coupled with Whites impressive display and abundant user-selectable menu options, the new DFX is definitely most impressive.

White's Mxt

By Andy Sabisch

Whites Electronics has been a leading manufacturer in the metal detecting industry for more than 55 years and over that time, has developed the reputation of a company producing quality detectors making impressive finds around the world. Recently theyve introduced several new models, and I was looking forward to giving the MXT a try when I was told one was enroute.

Features

The MXT is a departure from some of the standard design specifications found in other Whites detectors. While it does not appear much different from the outside, the electronics make the MXT a totally new detector. The engineers opted not to use the typical 6.592 kHz operating frequency found on most Whites units over the past 20-plus years and selected 14 kHz based on its increased sensitivity to low conductive targets. A point current Whites users should be aware of with this change is that coils from other Whites detectors cant be used on the MXT - there are 2 optional Double-D coils designed specifically for the MXT.

The MXT is controlled by three knobs and two toggle switches on the housing and a three-position trigger on the handgrip. The internal software has been pre-programmed to provide three distinctly different settings for three different types of treasure huntingcoin and jewelry, relics and prospecting. Selecting the desired type of hunting is as simple as moving a toggle switch to appropriate setting. The remaining toggle switch controls the ground balance circuitry and has three positions, ground, lock and salt. In ground, the MXT will automatically track and compensate for changes in ground mineralization. If mineralization changes rapidly, more stable operation will be achieved in lock which fixes the ground balance. Salt is optimized for saltwater beaches or alkali ground often found prospecting for gold. The knobs are labeled gain (sensitivity), dual control (either discrimination or SAT depending on search mode) and threshold.

The LCD meter display provides a wealth of digital information and what is displayed changes depending on what search mode has been selected. In all three modes, a unique VDI (visual discrimination indication) number will be displayed that can be used to accurately identify targets before recovery. In the Coin and Jewelry and Relic modes, in addition to the VDI number a target ID label is displayed. These labels are tied to the displayed VDI number and were selected to match U.S. coinage, common trash, some jewelry and Civil War relics. The relic mode has only four possible target ID labels (iron, button, bullet or buckle); however, most avid relic hunters will tend to focus on the VDI number rather than the label

when determining if a target is worth recovering. In addition, the relic mode operates with a mixed-mode audio signal in which a low tone is produced for rejected targets and a high tone for accepted targets. This means that all targets under the coil produce a signal; however, unwanted targets can be ignored based on tone and/or meter indication. Both the coin and jewelry and relic modes have 16 LCD segments that appear beneath the VDI number and target ID label. These segments allow the user to check the target ID independently by using the chart below the LCD screen. The size of the block also provides additional information to help the user. If the block is full height, the MXT is fairly certain of the target ID. A half-block means that the circuitry is not 100% certain but is indicating what it might be. A quarter block means the MXT is more than likely guessing what the target is based on very little information being available to analyze.

The prospecting mode provides two unique pieces of information in addition to the VDI number. The first is iron target which shows up as a percentage value. It indicates the likelihood that the target is iron. Whites recommends that any target reading 50% or less should be recovered when searching for gold with the MXT. The other piece of information provided is GND which gives users a way to measure ground mineralization underneath the coil. This data can be used effectively to locate concentrations of black sand (and hence pockets of flake and flour gold) that would otherwise have been undetectable. The manual contains an excellent description of how this information can best be used when using the MXT for electronic prospecting. [Hyper SAT feature?]

The trigger on the handgrip also serves different functions depending on what search mode is selected. The center position is the normal search mode while pulling & holding the trigger switches to the depth-reading, non-motion mode. In the coin and jewelry mode, pushing the trigger forward activates the Pull Tab Notched Out software which automatically rejects pulltabs while still accepting nickels. In the relic mode, the forward trigger position activates the Disc Suppress Rejects software. Targets below the Disc setting will not produce any audio signal. If the Disc control is set to 0, all targets under the coil will produce an audio signal with ferrous targets producing a lower pitched tone than non-ferrous targets. This is useful when trying to locate a camp or skirmish site and the presence of ferrous targets may be the first indication relic hunters will receive when they are getting close. In the prospecting mode, the Without Iron Grunt software is activated which eliminates the tell-tale grunt audio signal produced when a target above 80% iron content is detected; however, audio and meter indication will still respond to a target. There may be a few applications where one might not want the Iron Grunt feature active; however, it will allow much of the common iron trash to be effectively eliminated through the audio response it produces.

The MXT uses the standard Whites drop-in battery pack which uses 8 AA batteries. The new circuitry produces almost 40 hours of use from alkaline batteries. The optional Whites rechargeable pack can be used with no impact on performance and is the same one used on most Whites detectors.

Field Test

The typical Whites Feel-of-Quality was immediately evident upon picking up the assembled MXT. Over the years I have always been impressed at the solid, well-built construction of Whites detectors.

The first site I took the MXT to was an old middle school closed for years that had been converted to apartments in a nearby town. The school was on a main thoroughfare and virtually every treasure hunter in the area had probably spent time searching the site over the last 25 years. In my last three trips to the school, I had come up empty handed so I felt that this would be an acid-test of the MXTs performance.

Opting for the coin and jewelry search mode, I set both the gain and disc controls to their preset marks, pumped the coil up & down a few times to set the ground balance and started hunting. Almost immediately I recognized the familiar chatter from highly mineralized ground. Coal has been used for heating in the northeast for more than 100 years and the mineralized cinders that remain raise havoc with most detectors when hunting these sites. Switching the trac control to lock all but eliminated the chattering as I continued searching the side of the school. I was somewhat concerned that using the lock setting would reduce the detection depth of the MXT; however, the next few signals would dispel my concerns. Near the road I received a repeatable signal that registered +78 on the VDI scale and a half-block appeared above the 1c/10c segment of the target ID label. Pulling the trigger to switch to check the targets depth, the MXT indicated it was 6 inches deep. Cutting a plug and removing the loose dirt revealed the edge of a silver coin at the bottom of the hole. Pulling a 1935 Mercury dime in XF condition brought a smile to my facethis was the first piece of silver I had found here in more than a year. Over the next hour I added two wheat cents, a small metal button and a pencil eraser to my pouch. Even though some rejected targets produced occasional chirps, their lack of repeatability and inconsistent meter indications made it quite obvious that they were not worth recovering.

The next site I hit was my mother-in-laws yard located in a small coal-mining town near Hazleton, Pennsylvania. The first 30 minutes hunting close to the house turned up a few recently lost coins and a pull-tab. Heading towards the back of the property, I hoped my luck would improve. Parts of the lot had been used to dump coal cinders and an old house had been torn down years earlier. Trash was plentiful and it became increasingly difficult to hunt the area due to the false signals and erratic meter indications that the MXT produced with each sweep even with max discrimination. Opting to switch to the 5x10 elliptical coil, I headed back to the troublesome area and continued hunting. The target separation afforded by the new coil allowed me to hunt with much better results. A slightly slower sweep speed provided clear responses from targets that fell in the accept range and rejected targets were easily discernible and ignored. Hunting a section of the back forty turned up a few keepers including an Indian Head penny (with the date long gone), a skeleton key, an engraved suspender clip with an 1892 patent date and a small ladies gold-plated compact. While these finds demonstrated the MXTs ability to successfully ferret out keepers from amongst a high concentration of trash, there was one memorable find that really stood out. As I was washing off the finds, my mother-in-law grabbed a blob of melted aluminum and started laughing. It turned out to be all that was left of a cooking pot that my wife Rosanne had left unattended on a stove when she was growing up. It had been thrown out years ago and will hold a spot in one of our shadow boxes as an interesting conversation piece (and one Rosanne had wished stayed buried).

Wanting to give the relic mode a try, I took the MXT to a series of old foundations from a long-abandoned coal mine near Wilkes Barre. I had previously obtained permission from the landowners and was anxious to see what might come to light. Setting the gain and disc knobs to the preset marks and the trac toggle to ground, I pumped the coil a few times to ground balance the MXT and started hunting near the front of a large foundation. There were fewer

targets than I had expected so I pushed the trigger into the forward position and turned the disc control to minimum. Distinguishing between the ferrous & non-ferrous targets was simple based on the audio response and meter indication. The first good target registered 50 on the VDI scale and read bullets. At just over six inches, I found a large button with the initials of either a coal company or rail line. While the VDI and depth reading was accurate, the label was not, but as I mentioned previously, most relic hunters will focus on learning what targets correspond to specific VDI numbers rather than rely on the four labels. Over the next few hours I found a number of interesting items such a key, tools, a license plate, buttons and the usual collection of unidentifiable items at above average depths. In a few areas I had to switch to the 5x10 elliptical coil due the concentration of trash; however, the 9.5 coil worked fine in most areas I searched.

Summary

The new MXT offers a number of innovative features in an easy-to-use package. Its use in well-hunted areas produced a fair number of keepers obviously missed by previous hunters and very few adjustments were required to make these recoveries. To effectively search trashy sites and minimize falsing and chattering from multiple targets, one of the optional elliptical coils is highly recommended. A point to consider when using the Double-D coils is that while target separation and operation in mineralized ground is improved, some loss of detection depth will be noted. The MXT has obviously been designed with input from end-users and deserves a serious look if you are looking for a new, high-end detector.

The MXT lists for $799.95 and comes with the standard two-year Whites transferable warranty. Optional coilsa 5x10 & 3x6 elliptical, along with a rechargeable battery system are also available to enhance the versatility of this new addition to the Whites line.

White's Electronics Matrix M6

By Andy Sabisch
From page 11 of the April, 2006 issue of *Lost Treasure*

Whites Electronics has been one of the leaders in the metal detecting industry since the 1950s when its founders, Ken & Olive White, started building Geiger counters for the people out searching for Uranium at the start of the Cold War. When that demand dried up, Ken White switched over to building metal detectors and as they say, The rest is history. When I first got into treasure hunting more than 40 years ago, there were dozens of manufacturers and even more models to choose from; however, even then Whites had the reputation of being the "brand that would produce" and I can attest to that in reviewing my old logs from when I started using some of the original Coinmaster and Goldmaster models. With that background and experience with Whites products, I was looking forward to testing their latest addition the Matrix M6.

FEATURES

The Matrix M6 arrived in the typically- sturdy Whites box which ensures it arrives undamaged and can also be used for storage. Assembly was intuitive and I was out in the test garden minutes after unpacking it.

The M6 shares some of the circuitry from its bigger brother the MXT and as such, operates at 14 kHz which provides increased sensitivity to low conductive targets (great for beach hunters in search of gold jewelry).

The M6 is controlled by two knobs and a toggle switch on the housing and a three-position trigger on the handgrip. The SENS knob serves a dual function; i.e., ON/OFF and adjusting the output signal strength. The DISC control allows you to select what targets are accepted or rejected. The AutoTrac toggle has three positions BEACH, OFF and ON. This circuit allows even a novice to quickly and precisely compensate for ground mineralization and then if desired, have the M6 automatically adjust for any changes in conditions that might occur. Ground balancing could not be easier - simply set the toggle for the type of ground you'll be searching and raise-&-lower the coil a few times thats all there is! If you find yourself hunting a site which is littered with rusted ferrous targets or the ground conditions change rapidly causing the M6 to false or chatter, rebalance it and then place the toggle switch to LOCK which fixes the ground balance setting and may result in smoother operation under these conditions.

The toggle switch in front of the handgrip serves multiple purposes. In the center position, the M6 will produce a single audio tone for any target that registers above the DISC control setting. When you pull the trigger back and hold it, the M6 switches to a non-motion all-metal pinpoint mode. The LCD display changes as well to provide depth indication and a graphic that aids in precisely pinpointing the target to reduce recovery time. Pushing the toggle forward, it locks into a new mode added to the M6 called the Tone ID mode. The M6 provides 7 different audio tones ranging from low (iron) to high (silver coins). With a little practice one can ID targets based on their audio response and confirm that with the LCD indication. Having either option to choose from is a nice addition.

The LCD screen is typical High-Quality Whites and provides one with a great deal of information even in bright sunlight that allows targets to be identified quite accurately and then easily pinpoint them within the 3 open center of the coil. The target ID information includes a VDI (Visual Discrimination Indication) value that ranges from -95 (ferrous) to +94 (non-ferrous), labels which reflect what the M6 believes the target is most likely to be (in terms of common targets; i.e., 5c, tab, screw cap, 25c, etc.) and a series of 16 blocks that appear along the bottom of the screen which line-up with values and icons on the label. A point to remember is that these blocks are generated independently from the VDI number so a comparison check between the two can further aid in deciding if a target is worth recovering. Depending on how sure the M6 is as to the targets identity, the height of the block will vary.

A full-height block means it is 100% sure, while a half-height indicates a strong probability it knows and a quarter-height block means very little information about the target was extracted and identification is questionable. Switching to the pinpoint mode changes the display to indicate depth in inches and a set of blocks that move from left to right as the coil moves over the target. When the maximum numbers of bars are showing, the coil is precisely centered over the target what could be easier!

The M6 uses the standard Whites drop-in battery pack which takes 8 AA batteries. The new circuitry produces almost 40 hours of use from alkaline batteries and the optional Whites rechargeable pack can also be used if desired. A standard stereo headphone jack is provided on the rear of the control housing and as always, headphone use will extend battery life and ensure weak signals are not missed.

FIELD TEST

Timing on field tests always seems to be inopportune for some reason or another and the M6s arrival was no different. At the tail-end of recovering from a broken right shoulder received in a car accident, I was a bit limited in how much swinging I could do so I improvised. Playing on his sympathy regarding my condition, I enlisted my 16-year old son Paul to swing the detector while I made various adjustments and took notes (actually I found this is to be a great way to detect!). Thanks to an unusually warm winter in the Southeast, we were able to get out throughout December and January in weather that approached 70F at times.

Since the M6 is geared primarily for coin and beach hunting, we took it to a few local parks and schools which were still in active use thanks to the warm weather. After a brief tutorial, I had Paul see how simple it was to adjust and operate as its simplicity was one of the M6's big selling points. Ground balancing has always been an adjustment that Paul has struggled with so when I told him that the M6 had a ground balance circuit, his eyes started to roll. What he found however was that it couldnt have been easier! A few pumps up-&-down and he was off. We tried both of the audio search modes and in less-trashy areas, I personally preferred the single tone and a quick glance to the LCD screen when a target was detected while Paul preferred the Tone-ID mode at all times.

Some people have stated on the Internet forums that there is a difference in detection depth between the two modes; however, in checking every signal we could not discern any noticeable difference between them. Having used notch-type discrimination detectors extensively, the M6 took a little while getting used to with the conventional non-notch system especially in trashy sites; however, we found that by using the Tone-ID mode combined with watching the VDI & depth readings, a slightly slower sweep speed, locking the AutoTrac circuit (center position) and in extremely trashy areas, switching to a smaller coil (an Eclipse 5.3 coil borrowed from a friend) resulted in some nice finds from sites others (and myself) had long since given up on.

Due to work constraints I was not able to take off between Christmas and New Years, so I stayed home while the rest of the family went to visit relatives in Charleston, SC. The warm weather afforded them the opportunity to spend time at Folley Beach and the M6 went along with them.

Paul, my wife and her 80-year old aunt all took turns using the M6. Having used single-frequency VLF detectors on the black sand salt water beaches of the Carolinas before, they fully expected to be forced to stay in the dry sand or put up with consistent falsing and popping once they reached the wet sand region (which is usually where the good finds come from). Using the BEACH position of the AutoTrac toggle switch, Paul pumped the coil up-&-down a few times and started hunting in the wet sand area being swept by an occasional wave or two.

What little chatter he did receive was easily discernible from actual signals and despite the crowds having been absent for months, he was able to pick up a handful of coins from the surf line. As Paul and my daughter headed off exploring the beach, my wife and her aunt tried their luck with the M6. Again, setup and ground balancing the black sand proved to be quiet simple and they were also able to find a number of coins & other items in both the wet and dry sand.

New Years Day 2006 was picture-perfect for detecting and the previous weeks rain made the ground ideal for digging. Paul and I went to a spot near the local college hoping for a silver coin or two. By now he needed no instruction and before I had the rest of the gear out of the truck, he was off hunting. The ground was quite hot resulting in some chatter so Paul dropped the SENS to the 70 mark and the M6 ran silent.

A number of coins turned up over the next 2 hours but other than a lone wheat cent, they were all modern vintage. As we started back to the truck, Paul hit a target that registered 32/35 pull tab / ring but sounded different than some of the trash we had recovered. Rechecking it in the TONE ID mode and then checking the depth he saw it indicated 6. Since all of the tabs and screw caps we had recovered had been 3 or less, it was a promising signal. Well, we cut a deep plug and the unmistakable glint of gold was visible in the bottom of the hole.

Carefully pulling it free, we saw it was a class ring from the college dated 1946. We are drafting a story on this great find for a future issue of Lost Treasure but suffice it to say that we tracked down the daughter of the rings owner who said that her mother had never returned to the area once she graduated meaning the ring had lain there for close to 60 years! It was truly special being able to return the ring to the daughter . . . . as her mother had passed away just 4 months prior to our finding the ring.

Over the next few weeks I put the M6 through its paces at a number of sites in the Carolinas some of which were notorious for their highly mineralized ground or trash conditions. The M6 with the stock 9.5 concentric coil resulted in a fair amount of chatter in these challenging locations; however, I was fortunate to have a 6x10 DD Eclipse coil which resulted in much quieter operation and more stable target ID readings as ground conditions deteriorated.

If you experience less than optimal results with the stock coil, give one of the DD coils a try! At a few old homesites I used the M6 at, the heavy concentration of pieces of rusted iron caused the detector to chatter a good deal with the AutoTrac circuit in the ON position, but as recommended in the manual, switching to LOCK allowed me to hunt these areas with much greater success.

SUMMARY

The M6 was designed for coin & beach hunters that might not have wanted the additional modes/features found on the MXT. The addition of the 7-tone audio ID circuit is a real advantage for those hunters that want as much information as possible as to a target's possible identity before they take the time to recover it; yet, with the flip of a switch, single-tone audio is available. Ground balancing is a snap and it worked well even under some harsh conditions on land and at ocean beaches. The weight and balance of the M6 make it a detector that one can use for extended periods of time without fatigue. A few comments that deserve mention are that the stability of the target ID indications (VDI & bars) drops off noticeably on deeper targets; in extremely mineralized ground the stock coil is a bit noisier than Id like to see (but

the DD coil can address that issue) and if you are wearing a jacket, you need to be careful when putting your arm in-&-out of the arm cuff so that you do not inadvertently bump either of the knobs or the AutoTrac toggle (which happened to us in a few occasions).

The Matrix M6 lists for $699.95 and comes with the standard two-year transferable warranty. The wide range of optional coils and other accessories greatly expand the versatility of the M6.

Whites Electronics Prizm 6t

By Andy Sabisch

Whites Electronics has worldwide name recognition when it comes to a company that has been producing quality metal detection equipment for more than 50 years!
The latest addition to their extensive line is the Prism 6T which, while sharing the Prism name with other models, offers a number of features not found on its siblings and was deigned to offer above-average performance at a mid-range price.
Features
The first thing that is quickly apparent when unpacking the Prism 6T is that it does not share the same design as the other Prism models. Due to the additional circuitry found on the 6T, and the switch to AA batteries, the battery pack is now mounted under the armrest which, while a tad heavier, provides perfect balance across the entire adjustment range of the shaft.

The 6T weighs just 3 pounds with the stock 9 spider coil and battery pack containing 8 AA batteries, allowing it to be used for hours without fatigue.

Two comments on the overall construction and assembly are 1) the area around the connector where the coil cable pugs in is a bit tight to get ones fingers into, but once the connection is made, it is really a non-issue and, 2) the case is made of plastic rather than the legendary metal Whites housings, but from what Ive heard and seen, it is as rugged as metal with less weightso nothing wrong, just different.

The 6T offers two distinctive search modes a motion mode with full discrimination (ranging from all metal to full rejection) and a non-motion all metal mode.

An important point to note is that the visual target ID system both the coarse grouping provided by the arrow beneath each of the 9 groups along the top of the screen and the larger VDI number (ranging from -95 to +95 similar to that found on the XLT & DFX), providing highly accurate target differentiation is active in both search modes, which expands the 6Ts versatility.

All adjustments are made using the seven touchpads located beneath the LCD display on the face of the control housing.

Showing thought for the end-user in the design phase, all of the touchpads can be accessed using the thumb of the hand holding the detector many detectors require two-hand adjustments which can be cumbersome at times and its nice to see that the 6T is an exception to this. The touchpads include ON/OFF, TONE ID, SENS(itivity), TRAC LOCK, BEACH, PP/ALLMETAL, and DISC(riminate) that provide the following functions:

ON/OFF: This serves a dual function it turns the detector on and, if held, it activates a very useful backlight ideal for hunting in low or no light conditions such as beaches after the crowds leave.

TONE ID: If you are in the motion discriminate mode, this touchpad allows you to activate an additional target ID circuit where each of the nine distinct groups of targets shown above the LCD produce a different tone enabling you to identify targets based on their audio response. If you prefer a single tone from all accepted targets, simply toggle this off. In the All Metal mode, selecting the Tone ID activates or deactivates a Voltage Controller Oscillator (VCO) audio circuit.

When active, the pitch and volume increase as the coil gets closer to the target which helps pinpoint and separate targets in close proximity to one another.

SENS(itivity): As the name implies, this adjusts the sensitivity to metal objects as well as outside electrical interference and ground mineralization. Setting it as high as possible without the 6T becoming unstable will result in maximum detection depth. There are eight distinct settings which are shown on the right side of the screen.

TRAC LOCK: The 6T features a fully automatic ground balancing system which will continually monitor ground conditions and make any adjustments that might be called for. If you find yourself in ground where mineralization changes frequently, or contains traces of rusted iron, activating the TRAC LOCK function will prevent the 6T from trying to continually adjust to match the ground can improve overall stability.

BEACH: If you hunt saltwater beaches or areas with high alkali content, such as the deserts of the southwest, activating the BEACH circuit changes the range of the ground balance and tracking circuits to better handle these conditions. Simply press the touchpad, allow the 6T to track the ground and start huntingwhat could be easier!

PP/ALL METAL: Pressing and releasing the touchpad will toggle from the motion discriminate to the non-motion All Metal search modes. Pressing and holding it will activate the pinpoint mode and, in this mode, the display will change to indicate the target depth in 1 increments from 0 to 12.

NOTE: the 6T actually has two depth indications the small one on the left side of the screen reads out continuously when a target is detected and indicates in 2 increments from 0 to 10+. In pinpoint, you get the larger indication in the center of the screen.

DISC(riminate): The 6T has nine separate groups of targets which are shown as icons above the screen. Incorporating the notch discrimination concept, users decide how to handle any of the groups simply by pressing the upper half of this touchpad to scroll through the groups and then accept or reject them using the lower part of the touchpad.

Operating the Prism 6T couldnt be easier - simply turn it on, select the preferred search mode, adjust the desired level of discrimination and sensitivity, sweep the coil across the ground to set the ground balance for conditions present (or bob the coil up and down a few times), and start searching for a good target.

Another useful feature is the short-term memory which retains all the settings (except for the ground balance setting), making it simple to move from site to site and not having to readjust things that you have tweaked based on personal preferences.

The 6Ts eight AA batteries should provide 25 hours of operation. Whites recommends alkaline cells for optimum performance, however rechargeable batteries will work with just a slight reduction in usable life.

The 6T features a battery monitoring system which checks battery strength when the unit is turned on. Good batteries will produce a high-pitched tone, while batteries nearing the end of their life produce a low tone. When they are almost exhausted, a LOW BATT icon appears on the screen along with a distinctive 3-beep alarm.

Field Test

With a number of good sites nearby to test detectors, I loaded the Prism and my gear into the truck and headed over to a few private yards I had searched before, certain there were still more keepers to find. Rejecting the first two target groups (iron), I was off hunting in under a minute after unpacking the 6T.

Based on the falsing the clay produced, I opted to drop the sensitivity to 5 which immediately settled things down considerably.

The first few signals produced clad coins at depths from 2 to 4 and each produced a consistent VDI indication that allowed me to accurately identify the targets before recovering them.

In the front yard of one home, I received a repeatable VDI reading of +75 accompanied by the arrow pointing to 1c/10c and an indicated depth of 6. Hopeful, I removed a deep plug and saw the glint of silver near the bottom of the plug. Pulling it free, I could read the date 1902 on a nice Barber dime.

Near the house itself, the amount of trash in the ground from past construction increased significantly.

With the low level of discrimination I was using, I could hear most of the targets and it quickly became apparent the 6T had a fairly short recovery time, which is needed when hunting trashy sites. This keeps a trash target from masking a good one when the two are very close to one another.

Slowing my sweep speed down to ensure I did not miss anything, I pulled out five Wheat cents, another silver dime (1944) and a metal cereal box premium, while only recovering a minimal amount of trash through the use of the target ID capabilities audio and visual - of the 6T. A smaller coil would be a perfect addition for hunting these types of sites and word is that Whites is working on just such a coil for release in the near future.

Personally, I am not one to hunt in All Metal that often, simply based on the type of sites I frequent which are usually very trashy.

I had a few old foundations in the woods that would allow me to test the 6Ts All Metal search mode with its target ID capabilities, so, thanks to the cooler weather (and no critters out), I hiked in to a pair of them.

Starting outside of the foundation itself, I switched to All Metal, pumped the coil to set the ground balance, engaged the VCO audio via the TONE ID touchpad and started searching.

The red clay in the area again forced me to drop sensitivity, but that value eliminated virtually all falsing or chatter. Signals were fairly plentiful with most being easily identified as being iron based on the VDI indications they produced.

As with the yard I hunted earlier, as I approached the foundation I needed to slow down to pick out non-ferrous signals from the nails and other pieces of iron. A smaller coil or a Double-D would make the 6T excel in these areas.

A few hours at this site and another nearby turned up three flat buttons circa the late-1700s, a brass thimble and a pair of musket balls. The Prism had detected these items at depths up to 8 and each had produced clear, easily discernible signals.

Luckily, I was able to get down to Charleston within the schedule constraints of the field test to see how it handled the saltwater beaches in the area. Heavily layered with black sand, they tend to give most VLF detectors fits in the wet sand / surf line area.

Picking Folly Beach, simply due to the limited time I had due to other commitments, I walked down to the wet sand and got setup. Trying the standard discriminate mode first, the 6T did false a good deal on each sweep. Pressing the BEACH touchpad and allowing the detector to rebalance changed things considerably for the better.

A trick I have used when hunting ocean beaches with a VLF detector in the past is to not hunt parallel to the water, since the moisture content and often black sand concentrations change from one end of the sweep to the other. Walking down to the surf and then back up again keeps conditions pretty consistent under the coil, allowing the detector to operate more stably and the 6T was no exception.

To eliminate most of the falsing, I dropped the sensitivity down to 4 and lifted the coil off the surface of the wet sand, which worked well even as the surf lapped against the bottom of the coil.

On the north side of the pier signals were fairly plentiful and, over the three hours I had available, I recovered 32 coins, one set of car keys, some aluminum tras,h which you really cant ignore when looking for gold, and my first gold ring in the last few trips herea thin, 10KT ladies ring with a dolphin on it. Target ID had been accurate even on the deeper targets (down to 8 or so), as had both depth indications.

Some people have posted on Internet forums that the audio ID accuracy dropped off on deeper targets, but I did not see this except on targets at the edge of the 6Ts detection depth.

Being able to use the audio target ID is a plus when beach hunting, as you can protect your control housing and not have to check the display each time to identify a target.

Summary

If you are looking for a lightweight, fully featured detector that can handle a wide range of site conditions without any complicated adjustments, the Prism 6T is definitely worth a close look.

To check out the new Prism 6T, contact your local Whites dealer and see if it has what youve been looking for. The Whites website has some basic videos that cover many of the 6Ts features that can be viewed at no charge.

The detector comes with the standard 2-year transferable warranty, instructional DVD and retails for $699.95. Accessories are available and an additional coil is expected soon.