White's DFX (+ XLT) HANDBOOK V1.1

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Main Index

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1. DFX ENGINEERING REPORT

Here it is. The finest all-around metal detector. White's new DFX is simply unsurpassed in its ability to find treasure older, deeper and smaller items that other metal detectors pass over. DFX brings together the ultimate combination of sophisticated microprocessor technology, and "Turn-On-And-Go" simplicity. You're out hunting right away, but there are dozens of adjustable features available if you choose. Pick your program and GO! Nine "Turn-On-And-Go" Programs including our user designed EEPROM programs you can override with your own custom programs. Listen for the distinctive sound of "treasure," then see what you've detected on the screen. Pull the trigger and DFX shows you how deep to dig. Here it is. The finest all-around metal detector. White's new DFX is simply unsurpassed in its ability to find treasure older, deeper and smaller items that other metal detectors pass over. DFX brings together the ultimate combination of sophisticated microprocessor technology, and "Turn-On-And-Go" simplicity. You're out hunting right away, but there are dozens of adjustable features available if you choose.Pick your program and GO! Nine

"Turn-On-And-Go" Programs including our user designed EEPROM programs you can override with your own custom programs. Listen for the distinctive sound of "treasure," then see what you've detected on the screen. Pull the trigger and DFX shows you how deep to dig.A revolutionary, new multifrequency method. Partnered with the target I.D. you get only from White's metal detectors, now DFX uses dual frequency detection to "see through" minerals in the ground and detect coins, jewelry and relics other metal detectors are missing. Hunt in 3 kHz, 15 kHz, or use both together for unequalled hunting. This is concentrated power from the two individually processed frequencies that work best for finding treasure. Detecting together or singly, choose Best Data and the DFX displays data from the most reliable frequency. Choose Correlate and questionable targets, including iron, are rejected. All happening automatically, behind the scenes, while you hunt!

Introduction
The DFX (Dual Frequency XLT) was conceived of as a detector which would maintain the most popular attributes of the Spectrum XLT, while adding the benefits and capabilities provided by multiple frequencies. Multiple frequency, for our purposes, refers to a method of detection in which signals at two or more frequencies are transmitted, received, and processed in a more or less simultaneous fashion. We will refer to a detector in which these operating frequencies do not run at the same time, but can be chosen between by the operator, as selectable frequency operation. The primary intent of adding multiple frequency operation is to enhance performance particularly on the salt water beach. Selectable frequency operation is provided primarily to allow an operator to optimize the detector's performance according to the types of targets he or she is most interested in finding. I will explain these things in more detail shortly. Keep in mind, although technically more advanced all the features and benefits are available to the "Turn-On-And-Go" PRESET user with nine Factory Set Up programs to chose from, as well as those who like to tailor the features to their exact preferences. The DFX is truly a leap above traditional single frequency models not only in the technical internal circuitry, but in the performance gains and end results, finding more desirable items, in more difficult conditions, digging less trash, and returning home with more prized finds. Operating Frequencies. The choice of operating frequency in a metal detector will have a significant effect on the detector's ability to find certain types of objects. Just as important, it will effect the detectors ability to distinguish between certain desirable and undesirable metal alloys. White's Goldmaster Series, running at 50,000 cycles per second (50 kHz), is an excellent choice for finding tiny flakes of gold. It would be a poor choice, however, for coin shooting in an environment where aluminum trash rejection is important. It would also be a poor choice for salt water hunting, because the same principles that make it sensitive to small nuggets make it sensitive to salt water. A detector running at 1.75 kHz (like the old Coinmaster V) would have good salt water rejection and good sensitivity to targets like silver coins; but its sensitivity to most gold jewelry, and its ability to distinguish nickels from foil and pull tabs, would be poor.

White's has been very successful building general purpose detectors which run at 6.6 kHz. This frequency was chosen years ago as a standard because it provides both good sensitivity and good discrimination for a wide variety of targets and environments. Still, for jewelry hunters and prospectors it may be too low, while for beachcombers and cache hunters it may be too high. Clearly, providing the flexibility to match the operating frequency with the application is a desirable thing.

The two frequencies available in the DFX are 3 kHz (actually 2.98) and 15 kHz (14.91 kHz). The detector can be configured as multifrequency in two different formats, Best Data, and Correlation,

or a conventional single frequency machine at either of those two frequencies. 15 kHz will be a better choice for finding small gold items, including most jewelry. It will provide better sensitivity and more accurate discrimination for targets in the foil through pull tab range. 3 kHz will be preferable for finding copper and silver coins, and will provide better sensitivity improved discrimination in the screw cap through silver dollar range. It will also be less salt sensitive.

Preset Starting ProgramsThe selection of "turn-on-and-go" programs has been greatly expanded. Preset Programs let the detector do the work for you selecting the most desired options for the application. The standard Preset Programs; COINS, COINS & JEWELRY, JEWELRY & BEACH, RELIC, and PROSPECTING can be chosen. In addition to that there are four EEPROM (Electronically, Erasable, Programmable, Read, Only, Memory) Custom Programs that are set up at the factory when the first five Preset Programs are installed.

The four EEPROMs can be overwritten to hold one's own custom programs. Or one of the standard Preset Programs can be modified and saved in one of the EEPROM positions. In other words the first five standard preset programs are permanent. You can modify them for temporary use, and/or copy past those modifications of that program to one of the EEPROM positions by SAVING and/or NAMING it, for future use. However, the first five standard Preset Programs will always revert to their original factory settings upon battery changes and/or fresh start up procedures. Once any modifications have been SAVED in an EEPROM position, they will remain during battery changes and fresh start up procedures until manually overwritten with a new program and that program SAVED in that position.

You can SAVE and continue using that EEPROM position with the same name, or select NAME and manually NAME & SAVE at the same time allowing you to type in a descriptive name for your special program.

The DisplayThe DFX provides a wealth of information on the LCD display.VDI (Visual Discrimination Indication): provides a reference number for all alloys and sizes from -95 to +95. Assigning a VDI number for each target type allows the DFX to selectively accept or reject like targets. The chart painted on top of the control box references VDI numbers and common targets.

Target Icons: Along with the VDI number, a representation of common targets within that range are displayed providing a quick and easy on the eye reference.

SignaGraph: Along the bottom portion of the display the SignaGraph provides a conductive/magnetic signature of that alloys characteristics. Magnetic irons are easily identified by their magnetic signature (to the left of center) where as alloys of the non-ferrous precious class pattern to the right of center and tend to provide narrower taller patterns.

Status Indicators: The battery check is automatic upon turn on. If the battery gets low during searching LOW BAT appears on the display. The Multi Frequency mode of operation is also indicated in the center/bottom portion of the display. Best Data (automatically chooses the best frequency for the target range), Correlate (compares both frequencies), or individual frequencies 15 kHz or 3 kHz.

Depth Reading: Once a good target has been located, squeezing and holding the Trigger Switch on the handle changes the display to indicate the depth of the coin sized target in inches and provides

a non-motion pinpoint mode for zeroing in on the exact spot to dig. Once the Trigger is released the DFX returns to the search mode.

1. V.D.I. Visual Discrimination Indication ("target reference number") In the upper left hand-side of the display there is a V.D.I. number that corresponds to the V.D.I. SCALE painted on the top right-hand side of the control box. It also corresponds to the Discriminate Edit feature allowing you to reject or accept targets based on their V.D.I. reference number. There are "+" numbers for nonferrous (not of iron) targets, and "-" numbers for ferrous (iron) targets. Rejected V.D.I. numbers may not appear if the VISUAL DISCRIMINATION feature is ON. Reasonably consistent V.D.I. reference numbers (? five digits), in a desirable area of the chart is a vote for digging the target.

2. Possible Target Identities ("Probable or most likely target") To the right of the V.D.I. number, possible target identities will be represented graphically. These graphics are called ICONS. A fairly consistent indication of a desirable target is another vote to dig the target. One or two possible target icons may appear. There is significance to which icon appears first. The first target to appear is always the most likely, the second is another possibility, slightly less likely than the first.

3. SignaGraph The SignaGraph at the bottom of the display provides a final vote as to whether or not the target should be dug.

A. Sweep the loop over the target several times and look at the SignaGraph. The SignaGraph automatically clears itself (FADE RATE) so that it doesn't fill the screen with information from past loop sweeps. An operator has limited time to look at the SignaGraph. If you want to look at the information again, sweep the loop over the target several more times. The fading of the SignaGraph information can be slowed or speeded (FADE RATE) to operator preference. This is completed in the PRO OPTIONS under DISPLAY. Automatic AVERAGING and/or ACCUMULATING of SignaGraph information is also available (See PRO OPTIONS).

B. Valuable targets will show up on the positive side of the graph. The positive area of the chart is the section located to the right of the zero.

D. In less than ideal conditions, coins may produce a wider pattern of bars. Most trash targets produce a recognizably different pattern than valuable targets.

E. One of the most visual benefits of the SignaGraph is the ability to show a smear pattern on iron targets that often fool the other methods of identification. An iron target will likely show definite bars on both the negative and positive sides of the SignaGraph, often smearing all the way across the entire chart. Valuable targets should not produce such obviously wide patterns. In very bad ground conditions, a good target may have a few small bar segments in the negative area due to mineralization. However, the pattern will show mostly positive bars, in a fairly narrow tall group.

Signal Processing

Within the DFX circuitry, the identification and discrimination of targets are performed by the same proven basic techniques used in the XLT. Bandpass filters are used to remove most of the slowly changing ground signal, while allowing most of the more rapidly changing target signal to pass through. In the XLT, this filtering is done entirely with analog hardware. Each signal channel

passes through two stages of hardware filtering. In the DFX , the second stage is accomplished by a digital filter, which is entirely under software control. This allows for a greater degree of user adjustment, including a less aggressive filtering mode (two filter/three filter) similar to that found in many popular lower-end machines.

Microprocessor

We have upped the microprocessor clock frequency from 6.75 MHz (XLT) to 14.32 MHz (DFX). You will immediately notice a result of this in the form of "snappier" display response.

All the MENU items are tied together so that the ARROW up and down controls scroll through every adjustment screen. If you continue to press the ARROW down you can go beyond the last BASIC ADJUSTMENT (View Angle) and into the PRO OPTIONS. If the ARROW up control is pressed after VOLUME, you will be scrolling backwards through the options starting with the end of the Preset Programs, then the MAIN MENU, then the end of the PRO OPTIONS.

An important feature of the ARROW controls; If a BASIC ADJUSTMENT has been made (for example Volume) and the trigger has been squeezed and released to return to a search mode, you can return to the volume adjustment simply by pressing either of the ARROW controls. This shortcut returns to the last adjustment that was made thereby allowing an operator to switch directly from a search mode to the adjustment currently being fine tuned. This feature is desirable as you start using BASIC ADJUSTMENTS or PRO OPTIONS that are located further down the menu listings, or any adjustment that may require some trial and error to find the appropriate setting.

If care is taken to use a desired adjustment screen last (just prior to squeezing and releasing the TRIGGER for a search mode), Custom Programs can use this ARROW RETURN feature to allow quick easy access to the most used feature. Use that feature (adjustment screen) last, just prior to squeezing and releasing the TRIGGER for searching. Then during searching, press either ARROW to return directly to that adjustment screen.

"HOT KEYS" will save time as they allow easy access, from the search mode, to the most needed adjustments. They are painted on the bottom of the control box for field reference.

NOTICE: "HOT KEY" shortcuts will not function from a cold start (batteries just installed). To function from a cold start the DFX must be turned on and air/ground balanced in any mode, then turned off. "HOT KEY" shortcuts will then function.

DFX New Features

Ground Filtering Motion discrimination is based on the fact that the signal received from the ground tends to remain the same, or change very slowly, while the signal received from a metal object buried in the ground tends to change much more rapidly as the loop is swept over it at a reasonable speed. We are thus interested in the rate-of-change of the signal more than we are in the magnitude of the signal itself.

An electronic device which is sensitive to the rate-of-change of a signal is known as a differentiator, or, alternately, as a "high-pass filter". A single high-pass filter is often used in the all-metal channel to provide what we call S.A.T., or "Autotune". For discrimination purposes, one high-pass filter is not usually good enough. We need at least two ? which is the origin of the term "two-filter detector". A potential point of confusion here is that discriminating detectors need at

least two signals, or channels, commonly called X and Y (or X and R). White's high-end detectors use three channels. But in any event, each channel needs at least two high-pass filters which is the origin of the term "four-filter detector".

Detectors in the 6000 - Eagle - XLT line have three high-pass filters per channel. In addition, a "feedback" technique is used to increase the gain for fast changing target signals, which in some sense is like adding yet another, forth high-pass stage "four-filter machine". Our experience has been that this additional filtering provides superior depth and discrimination in ferrous mineralized ground, however, with it some compromise responding quickly to targets near to each other.

In the DFX, the first two high-pass filters are implemented in hardware. The third high-pass, and the feedback element, are implemented in software with what is known as a digital filter. The digital filter is easily adjustable, requiring only the change of a few numeric constants in the microprocessor. Here is a summary of Ground Filter settings:

2- digital filters disabled - hardware filters only (quick "two-filter" response)

3- third high pass enabled; no "feedback"

4- feedback enabled (XLT-like response)

5- additional feedback (more filtering than XLT)

6- maximum feedback (maximum ground filtering)Use a lower setting for faster recovery between targets, and for greater freedom to sweep fast or slow without losing depth. Use a higher setting for better ground rejection.

Sweep Speed

The digital filter can be tuned so that it is more sensitive to a faster sweep, or more sensitive to a slower sweep. When Ground Filtering is set to 2, the digital filter is disabled and so the Sweep Speed adjustment has no effect. Use higher settings of Sweep Speed to quickly move through an area with few targets, and lower settings to move more slowly through areas in which you need to get in between the trash.

Bottlecap Rejection

This feature has changed compared to the XLT. It has been pointed out for some time that setting this control up beyond 4 or so wasn't very practical in the field. A lot of people wished they could turn it down below 1. So, the range has been shifted. A setting near mid-scale should give you fairly good and familiar results. Turning it down will provide a little more depth on coins at the expense of poorer iron rejection. Turning it up should provide some useful reduction in the iron trash you dig.

The range of this control has been shifted by a considerable amount. While there is not a direct conversion factor to equate XLT settings with DFX settings, our intent was to make a setting of 10-12 (in the DFX) about equal to a setting of 2-4 in the XLT. Since most of the Preset Programs have BOTTLECAP REJECT set to 4, we are actually running at reduced levels in DFX, when compared with

XLT. While the effect is most pronounced on bottlecaps and similar iron targets, this control will have some impact on all aspects of the discrimination performance.

Hot Rock Rejection

Setting or clearing +95 in the DISC Editor (on the XLT) can have a pretty dramatic effect. So, we have provided an adjustment to allow for more "shades of gray" between the extremes of simply accepting or rejecting this number with the DFX.

A setting of 20 with the DFX does the same thing as selecting +95 to reject regarding XLT models. Turning it all the way down to 0 makes it a "hot rock accept" control ? like making +95 an accepted target did previously with the XLT. A setting of 10 means that the detector will neither accept nor reject the target; it does nothing. Other settings give greater or lesser degrees of acceptance/rejection.

+95 in the disc editor controls whether the number is displayed, but has no effect on the audio response.

Remember that +95 in the DISC editor now only controls the Visual Discrimination of those readings. Audio Discrimination response to +95 readings is controlled by HOT ROCK REJ. A setting of 20 is the same as setting +95 to reject in an XLT. Setting to 0 is the same as clearing +95 to accept. A HOT ROCK REJ. setting of 10 means that the reading will have no effect on the audio ? it will neither accept nor reject the target. Other settings give various degrees of acceptance or rejection.

VDI Normalization

When a target is analyzed and a VDI number computed based on signals acquired at 3 kHz, the results will not be the same as the familiar numbers we see in a 6.6 kHz machine. The microprocessor, though, can easily compute what the result would be at 6.6 kHz when given 3 kHz data. We call this process "Normalization". Similarly, the 15 kHz VDI results can be normalized to 6.6 kHz units.

There are several reasons for performing normalization. First is the fact that many people have already committed the 6.6 kHz VDI scale to memory. Second is the fact that it would be extremely annoying to have to edit your discriminator every time you changed frequencies. Finally, normalization makes it possible to do the dual-frequency discrimination techniques mentioned below.

So, why would you want to turn normalization off? Notice that you get much more "spread" between foil and pulltabs at 15 kHz; this means better VDI resolution, which might make it easier to identify rings. The same applies to the spread between Zn pennies and dollars at 3 kHz. Normalization is forced ON when either "Best Data" or "Correlate" are selected. Only in the single frequency 3 kHz or 15 kHz modes can normalization off be used.

"Best Data"

The DFX transmits, receives, and processes data continuously at both frequencies. When you pass over a target, the processor looks at the magnitude and phase of both signals, and decides which one is more likely to give an accurate VDI result. It then computes the VDI at that frequency, normalizes, and reports the result to the LCD as well as using it to perform audio discrimination. Thus you should get good results on nickels and rings (where 15 kHz is the frequency of choice) as well as on deep silver coins (where 3 kHz is likely to be selected by the processor).

When Best Data is selected, the all-metal signal (both for pinpointing and searching with the discriminator off) will also be derived using both frequencies. The 3 kHz signal will be factory balanced to reject salt; same with the 15 kHz signal. The resulting salt-balanced signals will be highly sensitive to ferrous ground, as well as to most metal. We combine these two signals in the correct proportions in order to achieve ferrous ground balance. We now have an all-metal signal which is balanced to salt, balanced to ferrous minerals, and still sensitive to metal objects.

"Correlate"

When the normalized VDI results from each of the two frequencies do not agree, we can be pretty certain that the target response at one or both of these frequencies is too weak to be useful, or that one or both signals have been corrupted in some way - by interference or ground noise. If the agreement is excellent, we can feel pretty confident in reporting the result to the operator, both visually and audibly. This is what Correlation does; when the two results are the same or nearly the same, the target is treated as valid; when they don't agree, the results are ignored. Early indications are that iron targets do not correlate well, and thus some improvement in iron trash rejection may be had by selecting "Correlate".

Single Frequency Modes; 3 kHz, 15 kHz

These two modes should be fairly self-explanatory. Both disc. and all-metal data comes from the frequency you select. Use 15 kHz for small gold, nickels, jewelry etc. Use 3 kHz for copper and silver coins, larger objects, etc.

External Interference

Experienced White's users are familiar with the types and the severity of interference which impact the performance of those products operating at 6592.5 Hz. Since the DFX operates at two less familiar frequencies, new interference issues are sure to arise. One such circumstance which we are aware of has to do with interference from power lines. In general, power line interference is stronger at lower frequencies ? thus we expect to see more significant power line related interference at 3 kHz than we do at 6.6 kHz or 15 kHz. To operate nearer to power lines the single 15 kHz frequency is suggested

Physical Descriptions

General looks have not changed from the earlier XLT to the DFX . It has the same S-handle framework and lightweight yet rugged design for long hours in the field, without fatigue. You will also notice that, although the size of the coil is the same 950, it is now the Wide Band Multiple Harmonic coil and not interchangeable with the XLT. The display or meter is mounted at the top of a comfortably padded handle, with the trigger switch near the index finger for quick and easy pinpointing and non-motion, all-metal detection. The armrest sits at elbow position over a control

housing that is noticeably smaller than White's boxes of just a few years ago and therefore much lighter. The sides of the box read, "White's DFX Spectrum E-Series," with start-up procedures and a VDI (target ID) scale painted on top of the box, and the "Hot Key" control shortcuts on the bottom. At the back of the box is a hinged door to remove the battery pack, and a 1/4 stereo headphone jack. The internal speaker is on the top. White's has continued with this well thought-out design.

Feature Index

If you are a beginner, don't get "tech freaked" when you read the following list of features. Remember that the machine can automatically set everything, unless you want to set a few or as many as you want yourself. White's has the features divided into sections. First on the visual display screen is the Main Menu with the prompt pointing to enter the Preset Programs, ARROW down to the Basic Adjustments, or the Pro Options, and continue ARROW down to find the Custom EEPROM Programs. A Preset Program should be selected as a base or starting point. If not, the DFX uses the standard COIN settings.

Preset Programs

The starting point for selecting a base program most likely needed for the days hunt. Nine programs are available to choose from. The four EEPROMs can be used or replaced by storing your own programs for future use. Let the detector do the work for you and SAVE preferred settings.

Basic Adjustments

These are the typical features and controls found on high end models.

1. TARGET VOLUME - How loud a target beeps when detected.
2. AUDIO THRESHOLD - The slight hum or background sound heard continuously during searching.
3. TONE (AUDIO FREQUENCY) - Selects the frequency or pitch of sound the detector produces.
4. AUDIO DISCRIMINATION - The ability to reject trash, different sounds for different types of targets.
5. SILENT SEARCH - The ability to operate without the threshold or background hum.
6. MIXED-MODE - DC All-Metal non-discriminate mode, working simultaneously with AC discrimination mode.
7. A.C. SENSITIVITY - Degree instrument is responsive to signals in the discriminate (motion) modes.
8. D.C. SENSITIVITY - Degree instrument is responsive to signals in All-Metal non-discriminate (non-motion) modes.
9. BACKLIGHT - Used in dark conditions to light the display improving visibility.
10. VIEWING ANGLE - Adjusts the display for low or high temperature visibility.

Pro Options

These are the more detailed options one should study in the manual prior to experimentation.

AUDIO

1. RATCHET PINPOINTING - Pinpoint feature, automatically de-tunes for center of target location.
2. S.A.T. SPEED - Self Adjusting Threshold or Auto-tune, automatically maintains threshold.
3. TONE I.D. - Assigns each V.D.I. target number its own special tone or sound.
4. V.C.O. - Pinpoint or All-Metal non-discriminate feature, increases pitch or tone with target strength.
5. MODULATION - Motion modes produce the same, or different volume, based on target depth.G.E.B./TRAC
6. AUTOTRAC? - Automatically updates Ground Balance during searching.
7. TRAC VIEW - TRACK appears on right side of display during AUTOTRAC? adjustments.
8. AUTOTRAC? SPEED - Dictates when (how quickly) AUTOTRAC? adjusts Ground Balance.
9. AUTOTRAC? OFFSET - Positive or negative AUTOTRAC? (over or under kill).
10. TRAC INHIBIT - Prevents tracking the ground during target detection.
11. COARSE G.E.B. - (Manual Ground Balance) Coarse viewing, or overriding automatic.
12. FINE G.E.B. - (Manual Ground Balance) Fine viewing, or overriding automatic.

DISCRIMINATION

13. DISC. EDIT - Change V.D.I. (target reference numbers) accepted (detected), or rejected status.
14. BLOCK EDIT - Speeds EDIT by dragging ACCEPT or REJECT with ARROW controls.
15. LEARN ACCEPT - Target samples can be used to show or teach ACCEPT discrimination.
16. LEARN REJECT - Target samples can be used to show or teach REJECT discrimination.
17. RECOVERY SPEED - Speeds target responses, so close together targets each respond.
18. BOTTLECAP REJECT - How strongly the instrument rejects or breaks up on iron.
19. HOT ROCK REJECT - Degree the instrument is responsive to signals in the +95 (hot rock) category.
20. SWEEP SPEED - Adjust signal sampling width thus the ideal loop/search coil sweep speed.
21. GROUND FILTERING - How much circuitry (high-pass filtering) used to separate ground/trash signals and targets.

DISPLAY

22. VISUAL DISC. - Rejected V.D.I. numbers and ICONS do not appear on display.
23. ICONS - Graphic display representation of metal targets, ON/OFF.
24. V.D.I. SENSITIVITY - Response intensity to produce a display indication & 3rd V.D.I. digit@ 86 and higher.
25. D.C. PHASE - Measurement of ground, or metal target, during pinpointing.
26. GRAPH AVERAGING - SignaGraph information collects over multiple loop passes.
27. GRAPH ACCUMULATING - Emphasizes common or predominate SignaGraph.
28. FADE RATE - Clears or fades noncurrent SignaGraph information (bars).PREAMP GAIN
29. PREAMP GAIN - Selects the intensity of the signal received from the loop.

MULTI FREQUENCY METHOD

30. 2 FREQUENCY (BEST DATA) - Transmits and processes at both 3 kHz and 15 kHz frequencies (salt eliminated). Automatically chooses data from the most reliable frequency (based on both magnitude and phase) for each specific target.

31. 2 FREQUENCY (CORRELATE) - Transmits and processes at both 3 kHz and 15 kHz frequencies (salt eliminated). Compares data at 3 kHz and 15 kHz. Target signals that do not provide reasonably predictable information at both are automatically rejected. Iron typically doesn't compare predictably between frequencies, improved iron rejection can be expected.

32. V.D.I. (NORMALIZED) - 2 Frequency modes (Best Data and Correlate) automatically have V.D.I Normalized ON as it is required for these modes to operate predictably. Differences at 3 kHz and 15 kHz skew the well known traditional (6.59 kHz) V.D.I. chart/numbers painted on the top of the DFX control box. Normalization recalculates signals for this traditional V.D.I. number chart. OFF expands/compresses portions of this V.D.I. scale (depending on the 1 frequency used).

33. 1 FREQUENCY (3 kHz) - Operates at 3 kHz providing for superior high iron mineral use (no salt present) particularly for high conducting silver/copper alloys. Normalized ON maintains traditional (6.59 kHz V.D.I. chart/numbers. Normalized OFF significantly expands higher end of V.D.I. chart/numbers compressing lower end of the scale.

34. 1 FREQUENCY (15 kHz) - Operates at 15 kHz providing in lower mineralized areas (no salt present) particularly for lower conducting gold/nickel alloys. Normalize OFF significantly expands lower end of V.D.I. chart/numbers compressing higher end of the scale.

Only one of the four available multifrequency methods, BEST DATA, CORRELATE, 3 kHz, and 15 kHz, can be "ON" at any one given time. For example if BEST DATA is "ON", the remaining three multifrequency options are automatically "OFF". To turn BEST DATA "OFF", requires the selection of one of the three remaining methods. In other words, an operator never turns "OFF" a multifrequency method, they simply select the desired method and turn it "ON", all other methods are automatically turned "OFF."

The MULTIFREQUENCY selection in use appears continuously on the bottom of the LCD display during searching. The ideal multifrequency or single frequency setting will depend on many different factors such as the amount, degree, and type, of ground mineralization, the types of metal alloys most desired, as well as personal preferences. No one setting will be ideal for all situations. A user should first trust the factory preset settings for the general types of searching and then experiment to find the most ideal settings for that particular area and type of search. Generally multifrequency settings are better suited to areas that have both magnetic (iron) and conductive (salt) components. Inland areas may vary in this regard with the soils moisture content. For example dry soil may present mostly iron type characteristics possibly making one of the single frequency modes a better choice. The same area when the soil is wet may exhibit conditions similar to a combination of both iron and salt due to nonferrous metallic type mineralization's greater electrical activity when wet. For example soils containing silver, copper, or nickel oxides/nitrates react differently in conditions from wet to dry. These soil traits can occur naturally and are typical of areas with mineral springs or volcanic origins. However, be particularly aware of this wet/dry phenomena in farming areas where the soil mineralization is likely altered for agricultural purposes.

2. DD & OTHER BASIC COIL INFO FOR DFX

Since all DFX/MXT detectors come with the stock 9.5 coils included, the first coil questions most users ask are in regard to the DD (Double D) coils they keep hearing or reading about.

The DD coils are elliptical (Vs concentric or round) and send out an electromagnetic "search" pattern into the soil that resembles something similar to the keel of a boat with a bow on each end. The concentric coils send out what looks roughly like a cone. This means the elliptical coil search pattern covers the ground more like a windshield wiper than a concentric coil's floor buffer pattern.

This "keel" pattern makes for a smaller/narrower "window" for the detector to view the ground matrix. In short, it sees fewer targets at one time and thus has much greater target separation capabilities in "trashy" sites.

The DD coils also work MUCH better in higher mineralized soils as they are less prone to ground interference.

Because the DD coils are NOT as wide as the concentric coil, simple geometry would imply they couldn't send a signal down quite as deep since the starting point (at the edges of the coil) are closer together. However, actual ground testing shows the difference to NOT be quite so great as you might think.

Due to favorable personal results in the field, MANY DFX and MXT users prefer to keep their larger DD coil on the machine instead of the stock 9.5 for the majority of their hunting, turning to the smaller Shooter DD in higher trash sites.

From my totally unscientific polling of DFX users in this and other DFX using forums, I've found that those DFX users who have ALL four basic Whites coils use them in this order in regards to actual percentage of use.

1 - Large Eclipse DD elliptical coil (also called the 5x9, 6x10, 5x10, Large DD, and Large Eclipse) - Uses: Moderate to High mineralization and low to moderate trash and prospecting.

2 - Stock Eclipse 9.5 concentric coil (also called the 950) - Uses: Most general hunting situations including the beach. Not so good under high tension wires, in tight areas, in high trash or for prospecting.

3 - Small Eclipse Shooter elliptical coil (also called the Shooter, Small DD, Small Eclipse, 3x6, 4x6, 3x5 and "Little Ground Iron") - Uses: moderate to high trash areas, highly mineralized soil IF you have no larger DD coil and tight narrow spaces.

4 - Small Eclipse 5.3 concentric coil - Uses: moderate to high trash areas or tight areas with low to moderate mineralization.

TWO Important Notes regarding DD coil Pinpointing and Depth Reading:

- 1 - Target pinpointing with DD coils is different from the round concentric stock 9.5. But it is not difficult to learn and use. Just find the strongest/shallowest signal (using the VCO) from left to right in the coil. Then pull it back toward you until the signal suddenly drops off. The target is directly in front of and below the coil tip. Slightly deeper targets will be under the little "Whites" label.

- 2 - While target ID is great, DD coils are notoriously bad at reading the correct depth for many shallow targets (between 1-4 inches deep). However, they seem to find extremely shallow targets

(0.0-0.5 inches) quite well, as well as anything at or below 4.5 inches. The DD coils will often indicate these 1-4 inch deep targets as being deeper than they actually are. (Which, I suppose, IS better than reading them as being shallower and finding yourself constantly having to dig more than you'd planned!) But with coil use and practice you'll soon not find this disconcerting to any extreme.

Some Coil Size Guidelines (NOT set in concrete):
1. The smaller the coil, generally the smaller the detecting window will be. The smaller the detecting window in a coil, the less depth it will have. The larger the coil, the less target separation capabilities it will have. So you have to balance three things: possible depth with the desire for target detection and target separation.
2. The larger the coil, the less reliable it is in detecting, ID'ing and/or accurately measuring the depth of SHALLOW targets.
No matter the detector/coil combination, the more YOU practice with your detector and learn its language, the better you'll be in all three departments REGARDLESS of the coil you are choosing to use. In the end, it's not just the detector or the coils you use. You can have the best of everything for just the right technical combination and STILL get skunked by someone who knows HOW to use their detector.
Now, THAT should answer most basic DFX/MXT coil questions. For a bit more information, carry on...

At average depths (say, no more than 5-6 inches) in ?clean? ground, there isn't too much difference amongst these coils. At up to six inches all three basic coils should find and ID targets well.

The stock 9.5 will detect a larger area (window) with a roughly bowl or cone shaped zone both below and above the coil. Because it is wider all around, theoretically, the cone will be uniform, wider and, thus, deeper than the DD coil.
The larger Eclipse DD was designed to still cover a fair area front to back, but work better in higher mineralized ground. The detection zone, rather than being cone shaped, is similar to a double-ended canoe with a deep sharp keel running from the front of the coil to the back. That "keel" provides a sort of detecting "knife" that slices through the ground (rather than plowing through it). This allows for much superior target separation (seeing each target rather than several at once) since the window is a narrow slit. This slit is sort of like looking through a castle archery slot rather than a big bay window. You can only see a few things at a time. But you aren't distracted by the view, either. But because the actual area of projection is obviously smaller, so then would be the possible depth available to that coil.
The smaller Eclipse "Shooter" DD coil is just like the larger DD except that (because it IS smaller) the window is even MORE narrow AND shorter. The advantage of this is that in concentrated trash (MANY targets VERY close to one another) it can pick out individual targets ("separation") and identify them for you. If you go slow enough and learn your detector, you can actually start telling when targets are right next to or even overlapping one another. The larger DD would have some problems doing this (although it can, to an extent) and it's almost impossible and much too frustrating (for your sanity) to even try very long with the 9.5.
In open ground, clean ground or in ground you just need to cover quickly, the 9.5 will probably be your best choice of the basic Whites coils offered. This is especially true if, like many new detectorists, you tend to sweep too quickly. It can catch more shallow targets that you would

probably miss and can find those deeper ones more easily than using the DD (again, that's pertaining to most detectorists).

The larger DD coils (or their like - e.g. Big Foot, Hot Foot, small Excellerator etc.) would be a better choice in areas such as non-sedimentary hills/mountains, Pacific North West USA, mining areas, desert Southwest USA, any black sand or generally trashy areas. Use them when you still want to cover a fair amount of ground surface but still want to know what's in the ground without the detector constantly screaming at you and/or VDI indicators jumping all over the place. One might note that the Big Foot doesn't seem too adversely affected by high tension lines that might have other coils screaming or falsing.

Use the little DD Shooter coil when your are in heavily concentrated trash (e.g. around picnic pavilions, baseball bleachers, old gas stations, campfires etc.) to find and pick out good targets next to melted aluminum, roofing nails, tabs etc.).

A QUESTION: Are there any programming changes that can benefit the MXT or DFX user when switching from the stock 9.5 to smaller or narrower coils like the DD's or the 5.3"

This answer is mostly beneficial to DFX users and was provided by Jeff Foster (an American Electrical & Design Engineer who often posts on the US Whites DFX Classroom forum). However the general info can still be useful to MXT users, as well.

For those who enjoy tweaking their settings there are two things that might be considered when you switch coils. If you're not overly keen on fiddling with your DFX settings, this is probably not going to be anything to lose sleep over and you can stop reading now, if you wish. For others, read on...

Swing Speed (physical), Sweep Speed (electronic) and Ground Filtering Considerations

When switching from the 9.5 to any smaller (or narrower) coil remember that the detection pattern (or window) is now skinnier. Thus, if you continue to sweep the small coil at the same rate as you did the stock coil, all targets in the ground will pass through this skinnier detection pattern/window more quickly. A target will, of course, be within a 9.5" wide pattern twice as long as in a 4" wide pattern. So as far as the DFX/MXT electronics can tell, they "think" you are sweeping faster, since targets appear and disappear more quickly in the narrower pattern. This has a couple of implications.

All else being the same, when you switch to a smaller coil, you can expect to have to sweep the coil slower than the larger coil. In applications where the goal is "target separation" this is a decided benefit and is usually "planned". The MXT user is pretty much stuck with the fact he?ll need to physically swing the coil slower. However, if, for some reason, the DFX user does not want to reduce the rate at which the coil is swung, then a higher "Sweep Speed" setting can or should be used.

Only DFX users can do anything about the second implication of coil size changes. The electronic ramifications of targets moving in and out of the smaller/narrower coil's pattern more quickly is that it tends to generate a more abrupt signal change. A signal may go from zero to full strength in 4?" under the 9.5" coil but can do the same in only 3" under a 10X6" coil. This will cause a signal that "sounds" more treble or higher-pitched to the DFX's electronics. (Technically, an engineer

would say the signal has more high-frequency harmonics). This will allow the "Ground Filtering" to be more efficient. This is a key reason that "double-D" (DD) coils perform better in mineralized soil. So, since they do perform better, the DFX user may find that a lower "Ground Filtering" setting may be useful.

I, again, hope you have found this information of some use to you. Do pay attention to any other posts and make purchase AND use decisions based on what you want to hunt and where you want to hunt.

3. DFX GROUND FILTERS by Jeff Foster

PART 1

Obtaining a good understanding of how "Ground Filtering" in the DFX works can be difficult. The DFX manual talks about some of the benefits that they provide, but doesn't really explain how they operate. Here, I'd like to take a completely different approach in explaining what they do in an attempt to demystify them. What they do is surprisingly simple. The key to understanding how the "Ground Filtering" feature of the DFX works is to think of "Ground Filtering" as "Motion Filtering."

Perhaps part of the challenge in getting a clear understanding of how "Ground Filtering" (i.e. "Motion Filtering") works is that is seems difficult to clearly observe it working. It's clear to see what the "AC Sensitivity" setting does. But from reading the DFX manual, one may conclude that the "Ground Filtering" feature performs mysterious sophisticated electromagnetic convolutions that, although undecipherable and unobservable to mere mortals, yields greater depth as you increase its setting all the way up to 6. This is bunk. It's easy to see the "Ground Filtering" in action. Every time you use the DFX in discriminate mode you will notice that you must MOVE the coil relative to the target to get any response. This is because "Ground Filtering" becomes enabled automatically when discriminate mode is selected. "Hold on a minute there," you may be thinking. Isn't the reason that you must move the loop to get a signal in discriminate mode because discriminate mode is a motion mode?? No. Discriminate mode requires motion because "Ground Filtering" becomes enabled automatically when discriminate mode is selected. It is "Ground Filtering" that requires the motion in discriminate mode. "Ground Filtering" can be thought of as "Motion Filtering."
Another issue that may add to the confusion in understanding "Ground Filtering" is that the settings, as described in the manual, seem to correspond to the NUMBER of "Ground Filters." Unless you're building your own metal detector in your garage, this is useless information.

The settings, which range from two through six, should be viewed as how strong the "Motion Filtering" will operate. To understand this, let's look at the weakest and strongest settings to see how they differ. At the weakest setting of two, you will notice that you will get a good strong target signal over a broad range of different speeds. You can move the loop fairly slowly or fairly quickly and you will get a decent signal. Only when you start to move the loop very, very slowly will the "Motion Filtering" begin to attenuate the signal. Now let's look at what happens at the other extreme, with a setting of six. Here you will see that you can not get a strong target response over a broad range of different speeds. Here the "Motion Filtering" is much stronger. As you observe what happens as you slowly increase the speed at which the loop is moved past the target, you will see that you must be moving the coil faster than when a setting of two was

enabled. You will also observe that the speed at which a good signal is obtained is much more critical. You will notice a very abrupt falloff in the signal strength with just a slightly slower speed from where the peak signal is achieved. This is the result of the stronger "Motion Filtering." This is it. This is what "Ground Filtering" does. It is just a "Motion Filter" that allows targets that are moving at the proper speed to be detected at full strength. The slower the target is, below the peak speed, the more its signal is diminished or "filtered." The strength of this filtering is based on the "Ground Filtering" setting.

Hopefully, now that "Ground Filtering" is understood as "Motion Filtering" this can be used to understand how it provides benefit in the field. Let's think about a typical mineralization problem that may be encountered. Let's imagine a field that has a ferrous mineral in the form of black sand in the soil. It is unlikely that the black sand is uniformly distributed throughout the field. More likely, due to erosion, geologic actively, etc., its concentration will vary throughout the field. As the DFX's coil is swept across the ground, at a speed that is ideal for the "Motion Filters" to accept a good target, the gradually changing mineralization will appear as a very slowly changing signal, and will be filtered out.

PART 2

In the previous post (Understanding "Ground Filtering" as "Motion Filtering," Feb. 10, 2003), an attempt was made to de-mystify the "Ground Filtering" feature of the DFX by describing it as a "Motion Filter" that allows targets that are moving at the "proper" speed to be detected full strength. Signals changing slower than this sweet-spot speed, such as varying ground mineral conditions, are filtered out. The "Ground Filtering" setting controls the strength of the "Motion Filtering." The weakest setting is two. The strongest setting is six. At the setting of six, even a slight decrease in sweep speed, below the sweet-spot speed yields a significant reduction in signal strength. At the setting of two, the "Motion Filtering" is much weaker.

In the replies of the previous post, I referenced old posts describing two methods of determining the proper sweep speed. Here, I'll try to explain how to determine the optimum sweep speed in terms of "Motion Filtering." So, how can one see if they are sweeping the coil at the best speed? Since a "Ground Filtering" setting of six provides the strongest "Motion Filtering," the peak target speed can be seen the clearest at this setting. Simply bury a coin a few inches down in an area of ground free of any other targets. Then, using normal width sweeps, start sweeping across the target very slowly. Gradually increase the speed, that the loop is being moved, until you get the best signal. This is the peak target speed. At this speed you should notice that when you sweep the loop just a little slower, you will begin to loose the signal, due to the strong "Motion Filtering" of a "Ground Filtering" setting of six. Now that you have found the peak target speed, if you are uncomfortable with it, you can change it by adjusting the "Sweep Speed" setting and repeating the above procedure. After you are satisfied with the peak target speed of the loop, practice it.

TIPS:

1. Remember that only "Ground Filter" settings of 3 to 6 allow adjustable "Sweep Speed" settings. (The "Motion Filtering" of the 2 setting is so weak that maintaining the peak sweep speed is not that critical, as it relates to "Motion Filtering.")
2. The lower the "Sweep Speed" setting that you use, assuming you maintain the proper sweep speed, the deeper the DFX will go.

3. The peak target speed is dependent on the coil being used. Smaller loops require either slower sweeps or higher "Sweep Speed" settings.

4. With a high "Ground Filter" setting, the effective width of your sweep will be reduced because of the need to slow the loop down (below the peak target speed) at the end of each sweep in preparation to sweep back in the other direction.

5. Don't use a high "Ground Filter" setting unless ground conditions warrant it.

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4. REVERSE DISCRIMINATION

Reverse discrimination is a very useful technique that can be used to find deepies in areas that have been hunted to death or that have a minimal amount of trash. By using this technique you will be using your metal detector to its full potential. You will find those deep targets that others have walked right over. Though this technique is a very productive one it is also pretty tough to master, but with a little time and persistence you will be getting there.

Ok your at an field that has been hit for many years and finds are few and far between. The only good finds left are deep and impossible to detect using a basic set up. Remember that the more discrimination you use the more depth you lose. So the first step to this technique is running you detector wide open "All Metal Mode". You want to start metal detecting at a very slow pace, moving along inch by inch. Your sweep speed will be determined by the metal detector that you are using. For example: to get the most depth out of an DFX you must swing the coil fairly fast. An Explorer on the other hand can be swung much slower to achieve optimum depth. So move slow and swing your coil at a speed that is optimum for your machine. Pay close attention to faint repeatable signals these are most generally the deep targets you should be honing in on. Deep whispers that repeat, Targets that are on the fringe of your detectors capabilities.

Ok you have found one of these deep signals, switch over to discrimination mode and sweep again. Does the thresh hold null out? if so it's a good bet that the target is iron, so move on if you are looking for coins and jewelry. If you sweep and hear no change in the thresh hold or you hear a small beep or blurp, Dig you've located a promising non-ferrous target. Remember when using this technique pay no attention to what the display on your detector is trying to tell you. Displays are pretty much useless when trying to detect deep targets no matter what technique you are using. Displays are useful for surface targets and even then can feed you a line of BS.(Bull)

By using this technique you will dig a few more nails and other garbage, but you will also be digging some good coins and relics that have been un-detectible while running a tight discrimination setting. The targets you will be digging are on the fringe of your metal detectors reach. Just to add that anyone using the mxt rather than the dfx and looking for the deeper targets also, should use the relic mode, trigger center, which is a "mixed" mode with discrim and all metal working together, if a target is too deep to register with the tones, the all metal side will give a slight rise in threshold (the third tone), it takes great patience and you need to work slowly to pick out these signals, once one of these "third tone" signals is picked up, the best way to suss it is to remove some soil to get the coil closer to the target, obviously once the discrim side can register the conductivity of the target the machine will bang out with a high or low tone telling you whether to dig or not, the advantage of this method is you don't have to keep switching from all metal to discrim, of course the dfx can also be used in mixed mode and set to mimic the mxt set-up.

5. TARGET VDI READING

Hi Roger

As you have had (or still do) a DFX and reported great succes with it, what kind of VDIs should i expect for coin types. ie: hammies, celtic, saxon, silver and gold victorian and other notable coin types. Problem being that in the user manual, Jeff Fosters' DDWTDFX all example VDIs relate to US coinage. At the moment I am digging anything (a newbie, dig owt and learn its sound, VDI and shape) but have yet to find anything of interest to 'learn' its character. I must say I have thus found your articles 'essential' reading.

Hi thornlv...I must admit it's been a few years since i used the DFX, but i did soon learn not to rely on the vdi too much as to whether you dig a target or not, a vdi reading "in air" will be different to a reading "in ground" on most targets, and the reading on the same targets can vary quite a bit when in different soil types, also targets very close to iron will usually give a false vdi reading, mind you this is much the same as most machines with a meter.

The only way to get a fairly accurate set of vdi numbers for your soil type, is to make a note of the number before digging the target and keeping a record of them, much better than using a list of numbers compiled by someone else which may or may not be accurate in your area and the conditions on your sites.

The fact is that even the same type of targets can give a wide range of vdi numbers, for instance hammered coins can come in at anything between +8 and +62 depending whether it's a cut quarter or large groat.

With the machine set to reject iron the best way is to ignore the meter and dig any solid two way signal, ignoring the spits and cracks that you get from near surface iron fragments, checking the meter on every signal wastes a lot of time and obviously reduces your find rate, try and rely on your ears and what the audio is telling you, if the signal sounds "iffy" through the headphones you can bet the meter will also be giving an "iffy" readout, such as numbers "bouncing" around and not locking on, and as always if in doubt at all, dig it out.

Fantastic Roger. It would seem then that VDI numbers become a bit redundant, how does this relate then to the signagraph ?.Correct me if I am wrong, the way to go is that if an 'interesting' sound comes through in the desired regions (I use tone ID) I should stop, pin point the target, resweep over and if left and right sweep produces the same response - dig it ?
this would explain why on sunday (my first ever field dig) I never got anything but scrap (bits of lead, bullet cases and bits of farm machinery). You see when I heard a desired sound, I swept it again and if it was a mid to high + I dug it (the response may have been vastly different either way). I soon learned that these 2 way results were probably going to be scrap, but how far apart should I expect if the target may be good. In example, on a scrap target I may have got +58 left, then + 65 right. Are you saying that something like a good hammered target will produce a straight (example) +60 both ways, or would there be some narrow difference (+60, +62 for instance).

I don't know what program your using, as a newcomer to the dfx i'd try this Program which has "tone id" turned off, http://rogers-relics-uk.com/index.php?topic=2746.0 tone id can be very confusing to an inexperienceed user.
If you do try that program ignore the meter, ignore the spits and cracks over surface iron, your listening for the signals that are there on the right swing and on the left swing, lay a coin on the ground and swing over it so you know the type of signal your looking for (clean and consistant),

note the difference in the strength of the signal as you increase the distance between coin and coil.

Targets that only give a signal one way but not the other are usually iron false signals, some will dissappear if you swing over them a couple of times as the discriminator eliminates them, some signals caused by the medium sized iron will be short and abrupt, remember the signal the machine gave over the coin and just stick to digging those to start with, we all dig plenty of non-ferrous rubbish in the search for the good stuff, but you shouldn't dig any ferrous unless it's very large or has a hole in it such as washers Thumb-up

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one or 2 bars only, right of the '0' on the signagraph is a must dig, if the bars are small and all over the display, leave it, its shite.
a bar on the '0' is coke...everytime i found.

like roger, its been a while since the dfx, but i do remember not taking much notice of the numbers.
but i think small hammereds came in 16 - 24

Great stuff again, Roger, for your info - I was using your Farmland 1 prog, with Tone ID on - I dont mind that as it gives me 'starter' as it where. I did notice that the 'rubbish' finds where beeping (example, not exact) A one way, then C flat the other (anyone spot the mistake). So if a I get a tone which is similar both ways then I would get a good possible feedback without having to watch the display (I have bad neck, bit uncomfortable to have my head down all the time)

Ghost, yeah started to 'twig' on that too, watching targets that 'sounded' nice and 'looked' nice (VDI) but signagraph had bars all over the place, ignnored them and just out of curiosity dug some - guessed 'yeah, crap' dug it and it was crap. I feel I have the dig the crap to find out what ccrap sounds, looks and responds like. Trouble is, need to start finding good targets to get same experience.

However, after just starting for serious this weekend (new club) and this forum, its amazing how much I have learned. Thanks all.

Quote from: Ghost on 04 September 2007, 18:16:19
one or 2 bars only, right of the '0' on the signagraph is a must dig, if the bars are small and all over the display, leave it, its shite.
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but i think small hammereds came in 16 - 24

Ghost, does this apply to the XLT as well, do you know?

        Reply with quoteQuote
exacly the same mate, plus the xlt will give you a better/stronger audio signal

6. GROUND BALANCING THE DFX

I've been working the DFX as my second machine (PI in the water first) I've read Jimmy Sierra, Jeff Fosters and the White Manual. A book that a friend sent me called "Dancing with the DFX" by Howard Garr added something on the balancing.

Make sure when ground balancing that the area is clear by at least three feet, by holding in the trigger. Then balance the DFX. He is the only one that gave this type of measurement. I found I'm getting a little deeper and cleaner.

Yep I always do that Roger - I air and ground balnce then pull the trigger to make sure that the ground is clean around me - if not I just keep moving a couple of feet and re-balance until I get an all clear - Another good trick to get the DFX working at peak is to wait for your first proper target with a good signal - then BEFORE digging try alter the sweep speed and ground filtering for the best signal - then just carry on at that setting - it's surprising how it 'tunes ' the machine up a bit - Maybe you already know this of course.   I wouldn't change my DFX for anything now because not every detector suits every type of field but with the DFX I can have two or three programs in to suit different places. My two favourites are that first program you gave me and the one that Toddy devised some time ago Oh and I check the DC phase - if it's between -80 to -95 I try using 3khz only. These are all tips I've picked up along the way but I'm sure you've plenty of your own. Hope you have a good season mate - I was hoping to get out today but the weather turned on me - I'm only a fair weather searcher you know LOL (the stuff doesn't go away)

7. XLT TO DFX

XLT to DFX.....The first difference that is apparent is scrolling through the menus, much faster. Setting up the block edit discrimination is at least three times as fast. The program menus for the DFX are the same as the XLT with several great additions.

Set up and hunting with the DFX is almost identical to using the XLT. Physically they are the same. The responses are very much alike, except one of the first things that I noticed about the DFX was the audio. The difference isn't much and may be mostly my imagination, but the DFX audio seems to be more fluid, quicker, and more responsive. That is probably because of the faster processor.

A new sweep speed setting (1-20) lets the detector change the sampling width of the target signal to match it to the swing speed you prefer. It should be balanced with the other new selection of "filters" (1-6). The higher filters allow better depth in hotter ground conditions. Recovery speed ((1-40) is also still available according to trash conditions. Balancing these three with trash and ground mineralization conditions is the hardest thing to learn with the DFX, but allows it to be very flexible for different sites.

Deeper   targets   are   easier   to   hear   with   the   slower   sweep   speed   settings. The DFX has a hot rock rejection (1-20). IF you reject +95, this still lets you hear a percentage of those +95 signals. A setting of 20 is totally rejecting +95. A setting of 10 let?s you hear about half audio on +95's. I think this is a setting that some people have a problem with and complain about the squealing when they don't have ground tracking best set for their conditions and have turned this on too much.

Should be called "HOT ROCK ACCEPTANCE".

The DFX allows you to select one of the following frequency settings;
- 15 Khz
- 3 Khz
- Both frequencies with "Best Data" (shows the best signal returned from either frequency)
- Both frequencies with "Correlate" (shows the signal only if both frequencies have a good response)

In practice I have been using "best data" almost all the time, although "correlate" seems to add a little more trash rejection is pull tab and high iron spots.

Now the important performance differences;

The DFX is much deeper on lower conductive metals. Gold, lead, brass and pewter Id and respond with stronger signals. My test garden shows about 2-3" deeper on nickels and my ring and bullet field finds are higher so far.

Silver coin depth is also more, although not as dramatically. I think I have always gotten very good depth with my XLT on copper and silver. My test garden shows about 1-2" better depth on pennies and dimes. Two inches better on quarters.

I have a 5.3" and a DD coil with my DFX, and both are great in the trash. Slowing the sweep speed, higher recover speed setting, lower filter setting, and "best data" works great. It allows much better trash separation than both my XLT and IDX. With my heavy trash program, low preamp, and the 5.3" coil, I found a small 14k gold ring at about 5" last week - so depth is still good. The only knock I have on the DD coil, is when I set my detector down and the coil is in the air, it is VERY noisy. I usually just flip the mono switch on my earphones to shut it up. Back on the ground and it will quiet down.

I haven't had any instabilities, so I really don't know about those problems. I have my settings VERY high (like my XLT). It is kind of chattery this way, but when it gets near a coin, it smoothes out and gives that nice smooth "round" audio.

The new display is nice and easier to see when the sun is bright on it, but not a great difference. In short, more flexible sweep speed, better trash separation, much better ID, a little more depth, faster menu scrolling, and a little more fluid audio than my XLT.

8. ADJUSTING BLOCK EDIT

This is an easier way than shown in the Whites manual.
- You scroll up and down using the two arrow buttons.
- In BLOCK EDIT, press the enter button, now scroll down through the numbers until you get to minus 95.
- Now make sure that you are in the REJECT mode, (if not, press enter to toggle between accept and reject in block edit mode)

- Now with the reject mode active scroll up to minus 40, press the enter button to change into the Accept mode, and scroll all the way up to plus 95.
- Then press the enter button to change back into the reject mode again.
- Then press the menu button to save these settings.
- These changes must only be done in BLOCK EDIT.
- Obviously you can change the numbers to whatever you require.
- Don't forget to save your program in one of the custom slots.
- To check your settings use the Disc edit mode, Not Block Edit.

9. ADJUSTING BLOCK EDIT (VARIATION)

- Go to block edit and press enter to put a box round the number.
- then press the down arrow till -95. there should be a tick in the reject box.
- if not press enter to change the tick to reject.
- once the tick is at reject press the up arrow til -49 and stop.
- now press enter to move the tick to accept.
- then press up arrow to +95 and stop.
- press enter to change the tick to reject.
- then press menu. thats it, now save the program.

10. QUESTIONS ON NEGATIVE VDI NUMBERS

Q: ok I'm new at metal detecting and have a DFX , if negative numbers are ferrous why do a lot of the dfx progs accept from -25 to 95 ? I know its probably a schoolboy question but I got to clarify this in my head...lol

A: The first clue is in the manual mate, it states:

"The first 30 to 40 negative numbers below zero also impact detection depth. Most iron indicates further into the negative numbers. Thus the first 30 to 40 negative numbers can often be ACCEPTed without digging much iron. ACCEPTing from the positive numbers down as low as minus 30 to 40 has the largest impact on the lower end of the positive numbers. Sensitivity to small jewelry is increased."

By accepting down to -40 you make the machine more sensitive to targets that drop in the lower positive numbers, targets such as small hammered farthings, cut halves and quarters, my farmland 1 program uses this method, and found me plenty of those type of targets when i used the DFX in tests i did i found no extra advantage in going below -40

11. JIMMY SIERRA TIPS

It looks like we are both up late. I am certain there will be all kinds of advice from the others on this forum. Most of it very good and most of them have their favorite ways to tweak their units based on many hours in the field. However, as a beginner, I think it is best to keep it simple. That does not mean you have to compromise performance. The preset programs are really well thought out, however, the main down side is that they are a bit wimpy, in order to be sure that they will work most anywhere. It is really not necessary to get too complicated to do very well. As you mentioned like real estate ...it is location location location. Research helps of course.

But getting down to some simple basic advice.

1/ Stay away from the coin program as you are walking away from most gold rings and jewelry. It is designed for beginners so that they will not get discouraged by digging up pull tabs...which come up in the same region as nickels and gold rings. Every time you put rejected numbers into the Disc Settings, you put "holes" in the response you will get from targets with adjacent VDI numbers. This creates a sort of "swiss cheese" response program. You will lose targets and break up the signal from others.

2/ I would suggest using either coin and jewelry if you want to have the designation of coins...penny nickel, dime etc. However, I prefer the Relic Program as I dig all targets except what I believe will be iron. Most serious detectorists dig anything that they feel isnt iron. You really never know what will come up next.

3/ Like you already found out.....take OFF ratchet pinpoint it is not a good feature, as far as I am concerned. As you noticed you can ratchet out targets and you dont know the size or shape of a target, which can be valuable in deciding whether to dig or not.

4/ Always pinpoint BEFORE you decide whether the target is good or not. In order to get an accurate reading, you should make a clean pass over the center of the target, so pinpoint after hearing a repeatable signal while searching. Putting ON VCO Audio is very helpful for pinpointing

5/ Most of the guys do like TONE ID, but I guess I am one of those from the old school and it drives me nuts. It sounds like a caliope (not sure of spelling) I prefer the smooth signal and always use a threshold while hunting.....NOT SILENT SEARCH.

6/ Whichever program you use, I would advise ACCEPTING ALL VDI NUMBERS FROM ABOUT minus 20 or so up to +95. This opened up program will give the best response on good targets . Having some negative numbers helps in hearing very small good items which can be pulled into the negative range by mineralization. If you are bothered by "hot rocks" or "coke" then reject +95.

7/ Finally and most important.....use the AC Sensitivity control and the Preamp Gain to improve signal and depth of detection. Do NOT run either so high that you have erratic behaviour....falsing, chatter or flashing numbers. You want a smooth threshold maintained. The DFX is a slower sweep detector and you should not sweep so fast that you lose your threshold hum (gasps or gaps at the end of a sweep usually)

A good rule of thumb, if your ground and environmental interference allows, is to raise your

preset preamp gain to 3 (preset is 2)and raise the AC Sensitivity to about 70 to 72 if you can (preset is 60). The Preamp gain is an AUDIO GAIN and basically just makes the signal louder. 3 is usually ample. The AC Sensitivity is the most important setting as it determines how deep your detector will hear the target. The higher it can be set, the tinier and deeper the target will be heard......but as I said , WITHOUT causing interference.

One more thought. The 300mm coil is Hot and covers a lot of ground. This can be a problem in trashy areas particularly. I would get a smaller coil to use in this type of location. Easier to pinpoint and target separation is better. also quieter operating. I like the Eclipse 6x10 DD elliptical coil, but there are others. I am sure some of the guys will give you their advice.

I hope I have answered some of your questions. Again practice makes perfect. You dont need to tweak things at first anyway and as I said, the preset with the above mods will do just fine. good luck, Jimmy

12. ITALIAN DFX'S FORUM TIPS

Salve,
ieri mi sono imbattuto in una spiaggia altamente mineralizzata, di quelle 'nere' nella zona di Scauri (CE), una vera disgrazia per noi prospettori. Appena acceso il MD ho caricato il classico preset x la spiaggia asciutta e la battigia: BEACH&JEWLY. Ho ricevuto segnali di OVERLOAD fin dall'inizio, ma senza farmi prendere troppo dal panico e sapendo che tra le mani avevo un 'signor MD' ho provato a lavorare sulle impostazioni per ridurre l'effetto indesiderato.

Ecco le modifiche effettuate partendo dal preset sopra indicato:

BASIC ADJUSTEMENT
A.C. Sensitivity: 60
PRO OPTIONS
G.E.B/TRACK
Track View ON/OFF: ON
Autotrack Speed: 14
Track Inhibit: ON
DISCRIMINATION
Sweep Speed: 5-6
Ground Filtering: 3-4
DISPLAY
Icons ON/OFF: OFF
D.C. Phase ON/OFF: ON
PREAMP GAIN
Preamp Gain: 3-4

Devo dire che smanettando un po' l'invadenza della mineralizzazione si è di molto smorzata, ma la cosa veramente stupefacente è che la zona è veramente 'trash', sporchissima di rifiuti, ma nonostante ciò è stato realmente possibile districarsi, operando una discriminazione eccellente nell'identificazione stessa dei targets a priori, infatti quelli buoni sono sempre contraddistinti da segnali schietti e che non lasciano particolari dubbi. Anche se, in spiaggia ci sono molte linguettine di Coca o Birra, che suonano altrettanto bene! Purtroppo il mio tempo era limitato quindi non ho potuto sperimentare molto sui presets che mi sono stati inviati, ma tornerò prossimamente a farlo, rendendovi partecipi dell'esperienza.

A presto, DAmiano

P.S. Vorrei aggiungere che inizialmente mi ero preposto l'uso dei 15Khz, ma e' chiaro che in contesti simili non c'e' altra scelta che usare BEST MODE, infatti l'uso di entrambe le frequenze (3Khz e 15Khz) permette di aggirare l'alto livello di mineralizzazione, rendendoci accessibili siti che di norma vengono abbandonati ad 'occhio'. :D

- In quei casi l'unica è abbassare il preamp gain e l'Ac sensitivity.
Poi una piastra DD non guasterebbe :)

CITAZIONE (peppe30679 @ 13/10/2007, 09:21)
In quei casi l'unica è abbassare il preamp gain e l'Ac sensitivity.

Poi una piastra DD non guasterebbe :)

E non solo, i filtri sono ancora più fondamentali e ti permettono di lavorare con gain e ac sensitivity più alta,spiaggie mineralizzate 5 filtri attivi e 2 frequenze best data attive 3 e 15 Khz,con piastra dd 6x10 faresti scintille considerando la molta sporcizia ;) spiaggie normali 4 filtri attivi il trucco per fare andare il dfx a dovere è attivare i filtri giusti in base al terreno e saper decifrare i valori del dc phase, da qui si parte e poi il gain e ac sensitivity.

Ehehehe per il momento la 6x10 deve aspettare un po, anche se è in cantiere il suo acquisto. Cmq, le vostre osservazioni convergono con questa mia intrigante, ma edificante esperienza 'trash' :D anche se sul PREAMP GAIN, al contrario ho potuto alzarlo apportando le modifiche a tutto il resto.

Saluti, Damiano

P.S. Vorrei dire che che aumentando l'Autotrack Speed a 14 ho avuto un netto miglioramento, infatti questa funzione regola la frequenza con la quale viene ritracciata la terra sotto i nostri piedi. Anche per D.C. Phase ON/OFF rigorosamente ad ON in questi casi.

Salve a tutti,
questo post incomincia a rilasciare un insopportabile odore di muffa!!! :D
quindi per tenere alto il morale della truppa, e sveglie le sentinelle image image , in attesa dell'arrivo del Libro di Jeff Foster che mi auguro ci regalerà maggiori approfondimenti e spunti di sperimentazione, vi lascio delle considerazioni prodotte da un giretto in montagna fatto qualche giorno fa.

Spingendomi su una collina a quota 400 m s.l.d.m. ho acceso il mio DFX, e ho tentato (partendo dal preset relict) di conformare l'MD alla natura del territorio. Per mia fortuna il luogo è decisamente 'clean' (pulito) quindi dopo una spazzolatina di 20 minuti, sono passato dal BEST DATA ai 15 Khz rifacendo lo stesso percorso, e ho decisamente assodato, una volta per tutte, che in condìzioni di terreno non fortemente mineralizzato, l'uso di questa frequenza incrementa di molto le prestazioni dell'apparato. Ci si puo' spingere ad aumentare il Gain Preampl dai 3 ai 4 punti e la A.C. Sensitivity dai 70-75 senza riscontrare problemi di instabilità. Personalmente, almeno dalle ultime esperienze fatte, incomincio ad avvertire la necessità di una nuova piastra, più piccola, e credo che acquisterò tra non molto una di quelle che già sono state segnalate nei precendi messaggi da cocorito ed altri. La piastra di default è sicuramente più performante in termini di profondità, ma il dettaglio e la pulizia risentono di molto della sua grandezza, inoltre una piastra più piccola è anche facilmente gestibile in termini di spazio per la prospezione in MOTION, soprattutto quando si è in luoghi in cui è difficile 'agitarsi' :woot: . Comunque, dire che anche il Pit-point ne giova, in quanto può essere più preciso, visto il raggio di rilevazione ristretto. Vorrei aggiungere che non riesco più a fare a meno del sistema 'tonale' con il quale viene gestita la discriminazione, forse provenendo dal sistema di segnalazione monotono, questo approccio potrebbe risultare un tantino fastidioso (qualcuno ha parlato di 'insopportabile americanata') ma facendoci l'abitudine, anzi l'orecchio :D mentre si perlustra, si può tenere lo sguardo piu' rilassato e non fisso sul display, concentrandosi su altro. Sembra una banalità ma a lungo andare incide anche sulle prestazioni psico-fisiche del prospettore. Lascio a voi, ulteriori considerazioni.

Ciao Damiano.
Il DFX mi arriverà a giorni, mentre il libro mi è già arrivato e me lo sto studiando per benino.

I miei primi esperimenti saranno ... 1) il Mixed mode con discriminazione invertita ; 2) il tentativo di trasformare il DFX in un NO MOTION a 15 khz, che a quanto dicono gli americani è la frequenza più stabile...

DC Phase: questa sconosciuta.

Oggi vorrei puntare i riflettori sulla D.C. Phase, una funzione che può rivelarsi indispensabile per la corretta identificazione dei targets, dei quali abbiamo segnalazione sul V.D.I. Meter del DFX. Credo che un suo corretto uso, che obbligatoriamente implica un apprendimento basilare del modus operandi, ci risparmierà tanto tempo prezioso sul campo, che potremo invece impiegare in fruttuose ricerche e auspicabili ritrovamenti! La D.C. Phase ci viene in contro facilitandoci di non poco l'interpretazione dei segnali rilevati, ma come ogni cosa, dovremo partire dalla teoria, al fine di poterla usare nel più breve tempo possibile.

Quindi, come è buona norma fare in questi casi, partiremo prima di tutto dalla rilettura della sezione che tratta in modo specifico tale argomento sul manuale di serie del DFX; riguardo ciò vi propongo questa mia veloce traduzione, nella speranza che possa essere di aiuto a quanti non conoscono l'inglese ma anche per coloro che pur masticandolo, non hanno voglia di rispolverare il dizionario. Mi scuso in anticipo per gli eventuali errori e vi invito a sperimentare personalmente l'uso della funzione D.C.Phase, riportando le proprie impressioni, su migliorìe nell'approccio d'uso.

I commenti in corsivo tra parentesi sono i miei.

(Display Section)

25. D.C. Phase

"Misurazione della mineralizzazione del terreno, o misurazione della fase di uno specifico target di metallo, durante il pinpointing (localizzazione dell'oggetto, attraverso un puntamento di precisione in modalità no-motion)

Quando la funzione D.C. Phase è attiva e il trigger è compresso e poi rilasciato in modalità motion, la ricerca avviene in modo normale, senza alcun tipo di variante. Quando un target è localizzato, o quando l'operatore vuole misurare il target, oppure la mineralizzazione della terra, il trigger è compresso e tenuto come per il pinpoint. Quando la piastra è in posizione stazionaria sopra il target o la terra, la D.C. Phase viene visualizzata in alto a destra del display. Il valore letto, può essere usato per centrare la piastra sopra il target e avere maggiori indicazioni. Il tono audio sarà di aiuto nella centratura della piastra sopra il target.

I targets di metallo sotto terra, produrranno una misurazione che rappresenta l'indicazione dell'oggetto + la misurazione della terra. Per misurare l'oggetto da solo, spostare la piastra fuori da un lato (essendo sicuri di tenere la piastra direttamente sopra al solo terreno) e rilasciare e ri-comprimere il trigger. Dopo, muovere la piastra ritornando sopra il target. Questo dovrebbe permettere una adeguata lettura della D.C. Phase del solo target.

La relazione tra D.C. Phase, Ground Balance (Bilanciamento della terra), V.D.I. Number e discriminazione è complessa. I risultati non sono comunque ripetibili in condizioni di terra differenti. La risposta della terra e dei targets può distorcere il campo di rilevazione della piastra in differenti modi, piegando, riflettendo, assorbendo e così alterando, la fase e l'ampiezza delle misure rilevate. Tutto questo, in modo alternato, produce inconsistenze nelle relazioni di queste caratteristiche.

Nel considerare numeri specifici è importante che la D.C. Phase sia coadiuvata dall'uso dei 15 khz senza la normalizzazione (inpostare la V.D.I. Normalized su OFF). La scala V.D.I. è distorta/espansa alla fine della parte bassa (foil/nichel) e compressa alla fine della parte alta (copper/silver)

Tips - In specifiche condizioni di terra, l'intervento sui valori Basic Adjustments (aggiustamenti di base) e Pro Options e (opzioni professionali) possono produrre migliori prestazioni. Dalla misurazione della terra e prendendo nota, tali condizioni possono anche essere ritrovate in altre aree e trattate con l'uso di settaggi simili.

La D.C. Phase della terra, ha una relazione con i settaggi adeguati del bilanciamento di terra. Questo è di particolare interesse per quelli che usano COARSE o FINE G.E.B. (Modalità di bilanciamento manuale della terra). Il bilanciamento manuale della terra ha un range che copre i numeri della V.D.I. da -95 a +10, Un bilanciamento manuale della terra con un settaggio di COARSE di 0 equivale a una D.C. Phase negativa di -95. Un settaggio di COARSE di 255 equivale a una D.C. Phase di +10. Come menzionato sotto COARSE e FINE G.E.B. il bilanciamento della terra non è lo stesso che editando questi numeri di V.D.I passando per il parametro REJECT (rifiuto). Ad ogni modo, se la tua terra misura -90, accettando V.D.I. -90 si produrranno problemi operativi, il metal detector vedrà la terra come un target. Con la stessa logica, se il target misura -90, e la terra misura -90, e il metal detector è bilanciato per la terra sul valore di -90, il target sarà invisibile alla rilevazione del metal detector. Queste condizioni dovrebbero essere estremamente rare comunque; il punto è che ci deve essere una differenza tra il target e la terra per far si che il target venga rilevato.

"Owner's Guide - Chapter 5 DFX Pro Options, pag. 47 (c) White's Electronics"

Saluti, Damiano

P.S. Vorrei segnalare alla vostra cortese attenzione questo interessante 3d, nel quale Methenylux ha affrontato la trattazione della Mineralizzazione Terrestre, leggetelo con attenzione in quanto la D.C. Phase, come credo abbiate intuito dalla lettura del manuale d'uso, mette in gioco diversi fattori, primo fra tutti la mineralizzazione del sottosuolo.

X AKILLE: Ciao Alessandro un saluto e un ringraziamento personale per aver preso parte ai nostri approndimenti, nei quali mi auguro potrai trovare il giusto spazio, in un clima di crescita e scambio reciproco. Il DFX è veramente una bella macchina, ma richiede qualche piccolo sacrificio! ;)

Salve,
per integrare il nostro studio sulla D.C. Phase vorrei mettere a disposizione l'estratto di un post di Jeff Foster, che egli stesso ha aperto per chiarire meglio l'argomento. Vi riporto alcune delle parti a mio avviso più significative:

D.C. Phase info

Brevemente:

La lettura della D.C. Phase, necessita di un approccio a due fasi quando si leggono i targets sul V.D.I. meter. Per prima cosa, la piastra necessita di essere posizionata su una terra 'pulita' (libera da targets) fino a che la D.C. Phase registra il livello di mineralizzazione. Successivamente la piastra viene velocemente portata direttamente sopra l'oggetto.
La D.C. Phase non ha la caratteristica di essere necessariamente più accurata dei valori rilevati nella modalità Motion (AC), ma si possono avere giovamenti quando ci sono molteplici targets in

stretta vicinanza tra di loro. che rendono difficile ottenere un segnale isolato sopra il singolo target, attraverso la sola modalità Motion.

In dettaglio:

Quando la piastra di ricerca è stazionaria sulla terra, il segnale che si sta ricevendo da esso è la media di tutto il materiale all'interno del campo elettromagnetico di ricerca. La piastra non potrà vedere solo i targets individuali. Essa non potrà vedere solo la mineralizzazione del terreno, separata dagli oggetti sepolti. La sola cosa che la piastra di ricerca può vedere, la sola cosa che può essere letta dalla piastra di ricerca sul computer nell'unità di controllo, è il risultato della media di ogni cosa nel campo di ricerca della piastra.
Così, come può il DFX determinare il numero di V.D.I. di un target sepolto nella terra – terra con un differente numero di V.D.I. e che a sua volta può generare un segnale più forte di quello generato dal target?
Esso fa in modo che questo sia possibile esaminando le variazioni durante la lettura della piastra di ricerca, nel tempo.
L'operazione di misurazione della D.C. Phase è un chiaro esempio di tutto ciò. Prima la piastra è posizionata sopra la terra che è libera di targets (ciò permette al computer nel DFX di determinare la risposta della sola mineralizzazione del terreno).
Dopo, la piastra è mossa fuori dallo spot, sulla terra che contiene il target. Dalla comparazione dei due segnali, il computer del DFX può determinare il numero di V.D.I. del solo target.

Dovrebbe essere scomodo, effettuare questa procedura a due step, per ogni target, presente sul terreno che si sta perlustrando. E' precisamente questo il problema che la modalità Motion risolve. Nella richiesta della piastra che è in movimento per percepire i targets, la modalità motion ha comunque l'abilità di comparare i cambiamenti di segnale fino al tempo di determinare il numero di V.D.I. dei targets sepolti nella terra, che ha anch'essa proprietà elettromagnetiche. (Molte informazioni sono disponibili in "Digging Deeper with the DF" nel capitolo 10: Understanding Motion Mode, specialmente nella pagina 56.)

Salve a tutti,
per completezza di informazione, vorrei riportare anche ciò che Jimmy Sierra Normandi scrive nel suo libro "Understanding White's DFX" (Edito da Whites Electronics, Inc. Sweet Home, Oregon Part Number 600-0210) rispetto alla D.C. Phase. Premetto che il suo approccio è decisamente stravagante, e si capisce perfettamente che egli non ha dimestichezza con tale funzione, arrampicandosi sugli specchi nei timidi tentativi di spiegare al lettore di cosa sta parlando. A mio avviso, si tratta di una imperdonabile pecca che avrebbe dovuto lasciar spazio ad uno studio più accurato, non trincerandosi dietro affermazioni come "Io sento che c'e' qualcosa di buono in questa funzione, ma in questo momento non posso darti molte indicazioni per utilizzarla per uno specifico scopo, Buona fortuna!" :D
Per quanto riguarda quello che leggerete, si tratta della solita veloce traduzione, quindi mi scuso anticipatamente per errori di qualsisasi tipo e vi rimando alla lettura del testo originale, che tra le altre cose è di corredo al DFX.

D.C.Phase
Range: On/Off

Un altro nome per le D.C. Phase potrebbe essere NON MOTION DISCRIMINATION. Essa rappresenta una interessante possi bilità per chiunque di voi abbia disponibilità e voglia di smanettare con i programmi e i settaggi.

Io non ci ho speso molto tempo, ma farò qualche sperimentazione in una prossima occasione. Lo scopo principale della D.C. Phase , quando è attiva, è che permette all'utente di misurare la mineralizzazione della terra, impostando un numero di V.D.I. per essa. Per esempio, quando un target è localizzato con D.C.Phase On l'utente azionerà il trigger come per il pinpointing. Con la piastra in posizione stazionaria sopra il target,apparirà u numero di V.D.I. in alto a destra sul display. Questo numero di V.D.I. rappresenta il numero di V.D.I. del target inclusa la lettura della terra. Se tu desideri trovare l'esatto numero di V.D.I del target muovi solamente la piastra da una parte e si rilascia per poi ricomprimere il trigger e muovere (nuovamente) la piastra riportandola sopra il target.

Questo doppio triggering rimuove la lettura della terra dalla prima lettura e consente la lettura per il solo target. Io suggerisco di leggere la sezione dell' Owner's Guide che parla di queste caratteristiche e giocare con esse quando si ha tempo. Io sento che c'e' qualcosa di buono in questa funzione, ma in questo momento non posso darti molte indicazioni per utilizzarla per uno specifico scopo, Buona fortuna!

Tratto da "Understanding White's DFX"(Edito da Whites Electronics, Inc. Sweet Home, Oregon Part Number 600-0210) Pag.123 Display Section

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Apro un post su questo strumento amato da pochi e odiato da molti per via dei settaggi,tengo a precisare che non sò spiegarvi tutti i parametri che ha a che stanno a significare,esprimo le mie impressioni in base a quello che ho capito nell'arco di trè mesi da quando c'è l'hò.

Come ho già ripetuto più volte i programmi base della white's hanno sì un'ottima discriminazione anche troppa,ma soprattutto la profondità di ricerca è veramente scarsa,quindi per sfruttarlo al meglio bisogna metterci le mani modificando i parametri drasticamente.

Io ho cercato di costruirmi dei programmi in modo da rendere il metal più semplice possibile nella ricerca praticamente come fosse un white's 6000 con tono unico suona o non suona e basandosi sul display che per essere un digitale non sbaglia un colpo,infatti non mi ha mai fatto scavare robacce se ti indica un valore positivo stai tranquillo che di robaccia non nè scavi,io cerco solo la militaria per cui la discriminazione si basa solo per tralasciare il ferro.

I parametri principali che influiscono sulla profondità sono:

-A.C sensitivity

-D.C sensitivity

-La discriminazione,fondamentale i valori da-40 in sù vanno sempre accettati altrimenti le prestazioni calano e di molto

-Il Bottlecap reject (serve per eliminare meglio gli oggetti più comuni spazzatura)ovviamente più si alza il valore e meno ferro trovi però la potenza diminuisce

-Hot rock reject (serve per non avere i disturbi dalle roccie calde) anche questo se gli dai un valore troppo alto ti fà perdere profondità

-I filtri che sono 6,più mineralizzazione c'è nel terreno e più filtri si devono attivare

-Recovery speed (che determina la velocità con la quale il detector può sentire un nuovo bersaglio dopo averne precedentemente individuato un altro,numeri troppo alti fanno si che perdi profondità,viceversa si perde sensibilità a individuare oggetti che sono vicini)

-Il bilanciamento del terreno (preferisco l'automatico)

-il preamp gain (fondamentale regola la sensibilità del metal,valori alti influenzano sia la sensibilità principale sia A.C sensitivity che la D.C sensitivity).

-Le frequenze, secondo mè con tutte e due le frequenze attive rende di più

In sostanza per un ottima resa di profondità bisogna trovare il giusto compromesso trà tutti questi parametri in base ai terreni di ricerca.

Quì vi posto 4 programmi un pò per tutti i tipi di ricerca,personalmente utilizzo il secondo, qualche modifica ulteriore personale io le butto dentro ma già così sono dei buonissimi programmi secondo il mio parere,se altri nè sanno anche più di mè su questo strumento allora postate :D sul DFX c'è molto da sperimentare volendo

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Ottimo inizio !

Una domanda sui filtri, nelle tue zone, considerando il terreno tutto sommato buono, ne usi pochi ? Tipo due ?

Si ne uso 2 per via della pochissima mineralizzazione e dei molti oggetti sepolti,come saprai meno filtri si usano e migliore è la resa sui terreni ricchi di spazzatura e dove in mezzo ci sono anche oggetti interessanti

----

Bravo Coco bel post :)

Per quali terreni lo consigli?

E' un'md veloce oppure lento?

Ciao

Considerando che lo uso esclusivamente quì dalle mie parti che i terreni sono compattissimi e sassosi e poco mineralizzati,lo consiglio sul compatto e poco mineralizzato anche perchè non ho esperienze su altri terreni.in spiaggia non l'hò mai provato così come sull'aratro e nemmeno nei terreni molto mineralizzati con cocci,non sono un gira mondi per intenderci :D

Lo considero un metal veloce la velocità di risposta è ottima ed in più puoi modificare sia la velocità dei dati del display sia la velocità del processore puoi regolare la spazzolata secondo le esigenze più veloce o meno,consigliano di tenere una spazzolata in 2 secondi sul manuale

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Io lo amo :wub: l'amore va al di la' di ogni pregiudizio smack smack...

Come inizia la stagione ed arriva un po' di folla in spiaggia prendo i strumenti e parto poi postero' le mie impressioni, ma prima di tutto postero' in base ai terreni della mia zona di origine vulcanica mediamente mineralizzati con flora prevalentemente composta di castagni poi lecci, querce, noccioli, e qua e là di allori. Spero di fare centro. :D

Quindi il range dei valori di sensibilità da utilizzare a quanto dice la tabella su qualsiasi tipo di terreno in A.C. 75-70 in D.C. 50, piuttosto stretto. :unsure:

Comunque mettiamo il caso il terreno sia fortemente mineralizzato farlo lavorare in "monofrequenza" potrebbe risultare meglio anche se abbassa il livello di discriminazione?

Ci sara' sicuramente molto da testare. Grazie delle utilissime informazioni. image image

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Imho la cosa più importante da fare per vedere il tipo di terreno è attivare la D.C. Phase (cosa che nessuno fa mai). In questo modo puoi misurare la mineralizzazione del terreno. Inoltre, attivando il Track View si può vedere con che frequenza l'MD in Autotrack bilancia il terreno. Se non si conosce la natura del terreno è bene iniziare a spazzolare con queste opzioni, vedere come va la cosa e poi modificare gli altri parametri di conseguenza. Questo permette anche di modificare opportunamente sia la velocità di spazzolata che la velocità di riconoscimento del target. E' utile infine per decidere quanto "spingere", in preamp o sens, l'MD per non renderlo instabile.

Quindi il range dei valori di sensibilità da utilizzare a quanto dice la tabella su qualsiasi tipo di terreno in A.C. 75-70 in D.C. 50, piuttosto stretto. :unsure:
Comunque mettiamo il caso il terreno sia fortemente mineralizzato farlo lavorare in "monofrequenza" potrebbe risultare meglio anche se abbassa il livello di discriminazione?

Dipende per quanto riguarda la sensibilità A.C e D.C mi spiego meglio,per esempio io lavoro tranquillamente con l'A.C sensitivity a 80 e la D.C sensitivity varia a seconda di quanto sono profondi i bersagli e il preamp-gain a 4 con i 3 filtri attivi,infatti la D.C sensitivity serve a dare maggiore potenza o minore potenza quando usi il pinpoint per la centratura precisa dell'oggetto,ovviamente più la alzi e meglio il pinpoint centrerà i bersagli profondi e più l'abbassi meglio il pinpoint centrerà i bersagli poco profondi.
Invece la A.C sensitivity devi regolarla a seconda dei terreni mineralizzati o meno e con essa è fondamentale regolare il preamp-gain e ai filtri in base ai terreni,per esempio se tu regoli supponiamo l'A.C sensitivity a 80 se vuoi più stabilità dell'md non occorre che regoli il preamp gain al massimo se il terreno non tè lo permette,altrimenti la nervosità dell'md è troppo alta :D è molto importante la collaborazione giusta trà i vari parametri,altrimenti si fanno solo frittate :D :D

Ciao Cocorito ,essendo uno sbarbatello sono alla disperata ricerca di consigli sul dfx per me è una macchina diabolica (ogni riferimento a mefhisto è puramente casuale he he he) visto che tu sei molto esperto volevo chiderti se avevi un programmino semplice come quello da te sopra riportato, che potrebbe andare bene per la ricerca di monete in terreno mediamente mineralizzato e con presenza di cocci . Forse va già bene quello, ma io non ne capisco un gran chè e preferisco farmi inluminare che combinare pasticci . spero di non disturbare con i miei crucci e intralciare discussioni certamente più gratificanti, ma non so che pesci pigliare visto che il dfx è il mio primo md.

Ciao gigix.x,con il dfx l'importante è sapere come si fa modificare i parametri,se si sa come districarsi bene con i pulsanti e impostare la discriminazione selezionare i parametri e come modificarli e salvare il programma impostato si è già a buon punto(molti queste cose non le sanno fare),per il resto non c'è altro da fare che inserire i programmi spagnoli soprattutto il secondo e il terzo che vedi sopra e poi vedi come si comporta l'md dove sei intenzionato a cercare,l'importante è mantenere l'md stabile e intervenire su l'ac sensitivity e su il gain e i filtri che sono gli essenziali,se vuoi un md stabile e che non ti crea problemi io direi di partire subito con il terzo programma chiamato terreno muy mineralizz,ci fai un po di ricerche e di esperienza con quello e poi un po alla volta puoi intervenire in qualche parametro per aumentare le prestazioni,molti che si prendono il dfx continuano a cambiare programmi concludendo mai nulla,questo è sbagliato perchè molti parametri sono del tutto personali suoni differenti sul tipo di oggetti e altro...è molto meglio usare sempre lo stesso programma conoscendolo per poi aumentarne le prestazioni,io per esempio imposto sempre il mio dfx il più semplice possibile come un md suona o non suona senza toni differenti o altro e poi in base al tipo di terreno verifico la stabilità dell'md e agisco di conseguenza aumentando o diminuendo i filtri le sensibilità il gain il bottlecap reject l'hot rock reject e la discriminazione cosi come la velocità di spazzolata
----
Cocorito1 sei grande!!! oggi ho provato il terzo programma spagnolo , la musica è cambiata parecchio ho centrato 7 bersagli utili 5 monete e 2 bei chiodoni di bronzo , solo due aspetti mi lasciano un po perplesso :

1) la profondita deggli oggetti rinvenuti (buoni e non) era sempre inferiore ai 10 cm sarà un caso ma mi è sorto il dubbio che il povero dfx sia al massimo delle sue potenzialita? Cosa ne pensi ?

2) in presenza di pietre basaltiche anche di piccole dimensioni 10x10 mi fraccassava i timpani come se fosse un macigno di ferro c'è rimedio ?Comunque sia ti devo qualche birra, se ti fai le vacanze in sardegna fammi sapere , ci conto !!!!!!!

Direi che il dfx non è mai al massimo delle sue potenzialità......ci vogliono anni per capirlo e nonostante tutto c'è sempre da imparare,

Se hai trovato gli oggetti a soli 10 cm di profondità significa che li erano e probabilmente di più profondi non c'è nè stavano,l'importante è che te li trova

Considerando che hai problemi di mineralizzazione io ti consiglierei di montare una piastra eclipse DD al posto della standard da 9,5 pollici la eclipse 5x9 (bianca) è ottima,la musica cambia e la profondità aumenta rispetto alla piastra 9,5 originale pur non usandola su terreni non mineralizzati,considerando che la piastra eclipse 5x9 dd abbatte la mineralizzazione ne avrai dei benefici sia in stabilità del metal e sia in sensibilità e discriminazione

----

Io con la 14DD uso un programma sostanzialmente simile, a parte le personalizzazioni dei suoni, etc. Le uniche eccezioni sono le frequenze che uso insieme in best data (o correlato se nel terreno c'+è molta psorcizia ferrosa) e la recovery speed che abbasso intorno a 20, a volte anche meno; diciamo che a seconda di come il terreno mi permette di spazzolare io cambio il valore facendo in modo che in ogni caso ogni 3 o 4 spazzolate mi appaia il nuovo valore del tracking. In certi terreni meno mineralizzati ho provato anche con un offset di +2 e un preampgain di 4, e la piastra ha retto benissimo aumentando un pò anche la profondità di qualche ritrovamento. L'importante è non aver paura di sperimentare.

Happy Hunting!!

----

help cocorito, se puoi dammi una mano !!! sto ancora usando il programma spagnolo da te consigliato su terreno molto mineralizzato ,ma non so se lo sto usando correttamente ,il dubbio mi sorge per quanto riguarda i parametri disc . edit reject e accept nella tabella ci sono le cifre -95 -15 per reject e -15 + 93 per accept ma esattamente che cifra devo mettere ? visto che ne accetta solo una (spiegazione un po incasinata) se puoi essemi di aiuto ti ringrazio già da ora altrimenti , grazie comunque ciao ciao !!!!

CITAZIONE (gigix.x @ 28/6/2008, 22:20)

help cocorito, se puoi dammi una mano !!! sto ancora usando il programma spagnolo da te consigliato su terreno molto mineralizzato ,ma non so se lo sto usando correttamente ,il dubbio mi sorge per quanto riguarda i parametri disc . edit reject e accept nella tabella ci sono le cifre -95 -15 per reject e -15 + 93 per accept ma esattamente che cifra devo mettere ? visto che ne accetta solo una (spiegazione un po incasinata) se puoi essemi di aiuto ti ringrazio già da ora altrimenti , grazie comunque ciao ciao !!!!

Ciao,

ci sono due modi per impostare la discriminazione,o usando il block edit oppure usando il disc edit,

se si vuole usare il block edit devi procedere così:

-Per il block edit fai così: ti porti a -95 e poi selezioni reject: da quel momento tutti i numeri che andrai a far scorrere in su saranno "rejettati" fino a che, in corripsondenza di un particolare numero, non andrai a selezionare accept e via discorrendo. In pratica se tu vuoi rifiutare da -95 a -5, per esempio, parti da -95 e metti reject fino a -5, poi metti -4, passi ad accept e vai avanti fino a quando vuoi accettare,una volta impostati i valori premi il tasto menù e vai a salvarti la discriminazione su un programma custom che intendi usare.

Se invece usi il disc edit procedi così:

-Per il disc edit ti porti a -95 selezioni reject con il tasto enter poi passi al sucessivo -94 con il tasto della freccia e accetti o rejetti secondo le preferenze(devi scorrerli uno per uno tutti i valori) fino ad arrivare a +95 fatto questo premi menù e vai a salvarti la discriminazione sul tuo programma personale
Se utilizzi il disc edit per impostare la discriminazione poi non serve che modifichi il block edit,se invece usi il block edit poi non serve modificare la disc edit

è più facile da fare l'impostazione della discriminazione che da spiegare....
----
in pratica il block edit è per fare una discriminazione con un blocco di numeri come dice coco ti porti a -95 e poi selezioni reject: da quel momento tutti i numeri che andrai a far scorrere in su saranno "rejettati" fino a che, in corripsondenza di un particolare numero, non andrai a selezionare accept e via discorrendo. In pratica se tu vuoi rifiutare da -95 a -5, per esempio, parti da -95 e metti reject fino a -5, poi metti -4, passi ad accept e vai avanti fino a quando vuoi accettare
Mentre il disc edit è utile per fare una correzione selettiva del blok edit cioè se ò fatto una discriminazione -95 a -5 e voglio modificarla: diciamo, voglio diminuire la discriminazione da -95 a -10 andrò su disc edit, seleziono accept e con la freccia seleziono -5, da qui in poi ogni volta che aumento di un numero cioè -6 in automatico il segnio di spunta andra su reject, in quel momento riseleziono accept e metterò -7 e cosi fino ad arrivare a -10.
come a detto coco è più facile a farsi che a spiegare

13. ITALIAN DFX AND XLT TIPS

Salve a tutti. Raccogliendo le richieste di alcuni colleghi, mi accingo a scrivere qualcosa sul DFX, cercando di mettere insieme varie letture e soprattutto esperienze riguardo a questo metal che molti guardano con sospettoso timore. E' ovvio che tutto quello che scriverò non vuole essere nè esaustivo né tantomeno "verbo" assoluto, ma spunto per approfondire la conoscenza e la comprensione del modello di punta di casa White's. Seguirò più o meno il filo del libro di Jimmy Sierra anche se volutamente non sarà una traduzione, sia per problemi di copyright sia perché certe argomentazioni non mi hanno trovato d'accordo e di questo ne spiegherò il perché, quando se ne presenterà l'occasione. Non mi baserò solo sul libro di cui sopra, ma anche su altre cose che ho e che ho trovato in rete. Spero che lo troverete interessante e che non vi annoierà, nel qual caso....girate pagina! 😋

Allora iniziamo!

Osservando la storia della White's, il DFX è il punto di arrivo di tutta una serie di ricerche e sperimentazioni basate su uno storico modello, L'Eagle Spectrum che ha portato alla creazione dell'XLT e, successivamente, al DFX. I due modelli sono apparentemente molto simili: a prima vista si può pensare che uno, l'XLT sia per smanettoni di livello base (circa 30 parametri da settare) e l'altro, il DFX, per quelli inguaribili (circa 45). La differenza fondamentale non sta nei parametri, ma nelle frequenze utilizzate. La White's ha sempre cercato di offrire il maggior range di frequenze e quindi, la maggior versatilità d'impiego. Altre case hanno puntato su modelli diversi con frequenze o gruppi di frequenze uguali, loro su modelli simili per struttura, ma con frequenze differenziate. Le frequenze scelte storicamente dalla White's sono state 3: 1,75Khz, 6.6Khz e 50Khz. Soffermiamoci un attimo sulle frequenze. Noi tutti sappiamo più o meno come si rapportano le frequenze con la ricerca di metalli, ma allego qui una serie di grafici presi da uno studio specifico e raggruppate per vari tipiologie di attitudine.

Velocità di riconoscimento del segnale
Capacità di trovare oggetti piccoli

Profondità su monete larghe e spesse
Capacità di gestire il ferro
Capacità di gestire la mineralizzazione

Capacità di trovare monete di spessore sottile
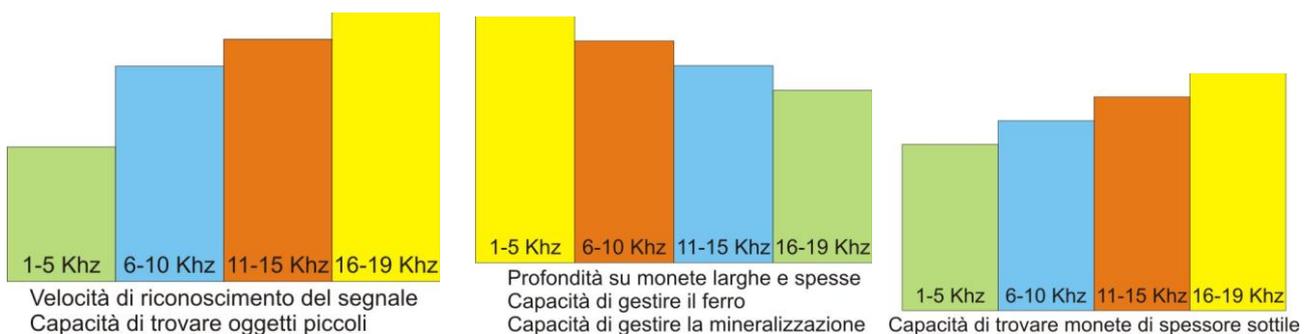
Credo sia chiaro come sia la reazione di certe frequenze a certi stimoli; non sono state rappresentate tutte le frequenze, ma risulta evidente il trend. Per esempio, e spero che anche i più incalliti si convincano, se io compro un metal da oro, diciamo un 50Khz, non posso sperare di trovare con facilità estrema catenine e orecchini in spiaggia dove pullulano mille altre cose, perché se da un lato la capacità di rilevare oggetti piccolissimi è assicurata, dall'altro ne avrò pochissima per districarmi nella miriade di segnali decisamente meno nobili (di questa cosa prego i possessori di Explorer SE di tenerla in un angolo della meoria, perché forse avremo occasione di parlarne in futuro proprio a proposito di questo metal). Da notare, inoltre, la marcata differenza di capacità, quindi più che proporzionale, da parte della classe più bassa di frequenze, sia di avere una risposta veloce nel riconoscimento dei target sia di trovare oggetti piccoli.

Detto questo suppongo che si possa iniziare a capire il motivo della scelta di usare due particolari frequenze. Due perché la tecnologia White's permette di controllare due frequenze (la multifrequenza dei Minelab è una tecnologia differente, non più evoluta). In pratica ci sono due metal che lavorano nella stessa scatola in sincrono, ognuno elaborando i propri dati separatamente e permettendo all'utente di gestire questi dati attraverso molti parametri. Le frequenze utilizzate sono la 3Khz (2.98Khz) e la 15Khz (14.91Khz): si capisce bene che si è voluto cercare di usare valori più o meno equidistanti dai limiti normalmente più usati, evitando allo stesso tempo, frequenze che avrebbero potuto interferire tramite armoniche e riflessi vari. Il DFX può comunque lavorare anche solo con una delle frequenze a seconda delle necessità dell'operatore. Pur gestendo separatamente i dati forniti dalle due frequenze, alcuni moduli lavorano in comune: mi riferisco al bilanciamento e al filtraggio del terreno, garantendo, inoltre, la compensazione automatica ed in continuo sia della mineralizzazione negativa (ferrite, etc,) sia di quella positiva (sale marino). In effetti si passa dall'asciutto al bagnato senza falsi segnali, tipo il mio amato SovGT, mentre altri, tipo l'M6 e, a detta di Jimmy Sierra) anche l'XLT qualche falso segnale lo danno (nell'M6 si risolve abbassando la sens, nell'XLT non so).

Detto ciò mi fermo qui per questo prima sezione del discorso. Nella prossima inizieremo ad andare nel dettaglio dei parametri.

A presto

14. SPECTRUM XLT HINTS & TIPS

The merits of Mixed Mode Audio for deeper coin hunting...
Another Great post by [Monte](#)

If you feel you would like to find deeper coins than you do in the motion Discriminate mode, you can simply search in an All Metal mode. I'm sure you have also learned that you can gain better depth of detection in the motion Disc. mode by: using less discrimination, sweeping the coil a little faster, and sweeping directly over the coin target.

By operating in the All Metal mode, locking the toggle trigger forward, you will often get a little better depth of detection AND be able to sweep slower (if you haven't over cranked your SAT spped) which will allow you to cover a site more efficiently. Also, when in the All Metal mode you can often hear a target response if you sweep the coil very close to, but not necessarily directly over, it.

Turning Mixed Mode "ON" simply allows you to hear BOTH the Discriminate channel and the All Metal channel at the same time. When in Mixed Mode you might not necessarily hear quite as much or get quite the depth that you would if you were toggled into the All Metal mode, but you will get a good percentage of that depth of detection.

So, the beauty of searching with MM turned "ON" is that you can sweep the coil slower and it won't be as tiring. Additionally, you can hear targets that you sweep close to, but not directly over, hearing mostly the All Metal audio response. This alerts you to the fact that you have a nearby target and you can scan over it directly and get a Disc. mode response.

Some prefer to enhance some of the audio qualities in both modes of operation. For example, if you turn Tone ID "ON" then the Discriminate response from an accepted target will most generally be a higher pitched sound than what you would get from the All Metal signal. Should you elect to turn VCO Audio "ON", which functions with the All Metal channel, you'll get that unique VCO response AND the Tone ID Disc. response from targets, all at the same time, if searching in the Mixed Mode audio option.

The beauty of this, however, is that IF the target is a good conductor target, such as a silver dime or quarter, the Tone ID Discriminate signal response will over-ride the All Metal response and you'll hear a good Tone ID audio.

Should the target be a poor-conductive hunk of iron, such as a rusty nail or iron bolt, the All Metal mode's VCO audio response will prevail.

I can assure you that it does take a lot of time and patience to adapt to. Some people never do. Others, as I have read on this forum, spoke out rather negatively a year or two ago when I mentioned my used of Mixed Mode with my custom programs, yet they're now proudly announcing their use of it. I guess that just shows that some are slower learners, and/or operation in Mixed Mode audio does require a lot of field time and patience to get comfortable with.

If the XLT didn't have that feature, I might not have an XLT! You will do well to work with it in low-trash settings at first so the amount of "noise" will be minimal.

Happy Hunting, and have patience.

Monte

PS: Now that we've considered how you can use Mixed Mode to help locate "deepr coins" I'll tell you this: Most of those older coins really are not all that deep anyway!

An excellent write-up explaining DC Phase. By Rowdy Yates located on Bill's Metal Detecting Page

I have heard that the XLT can "read the ground", how is this possible?

In answer to your question, turn DC Phase to "On" and when you pull the trigger like you are pinpointing a target, the XLT will show a VDI # in the upper right hand corner of the LCD screen which represents the VDI reading of the target or ground that you are pinpointing. This can be used to help identify targets that are iffy and your not sure of the identity about, as well as give you the grounds VDI reading when pinpointing without a target there.

Be sure to keep the loop steady/stationary (don't move it) when getting your reading of the ground. Then again, if the loop is held stationary over a target to get the VDI reading, it will show the number that represents what the target is + or - the ground measurement. To get a true reading on a Target, hold the loop steady/stationary over the ground without a target, squeeze the trigger, hold it and slowly sweep the loop over the target. This will allow the XLT to read the ground, then adjust and give a proper VDI reading for the target. If you hold the loop over the target and squeeze the trigger, the XLT reads the ground and target at the same time, therefore giving you a target VDI reading + or - the ground reading.

Settings I use but never see mentioned! For XLT, QII and QXT. By Tony (Orlando, Fl)

This is how I use my XLT and have excellant performance. I did this same setup on a QXT and it I believe is possible on a QII as well.

Seems everyones 'hot pgms' use an acceptance of VDI numbers down into the negative number range. Essentially, folks that do this are operating in a 'ALL METAL Motion Mode. When you start turning all the gains up and down trying to tune the detector for max depth, these units become near unusable due to instability (more like unpredictability).

What I have done and of course location permitting.... I simply turn the AUDIO DISC OFF. Essentially that is what folks have done by running their WIDE OPEN pgms. The results of turning AUDIO DISC off are outstanding. Very little popping and crackling because the unit provides informative audio responses that just seem to flow through the headphones, and not get all garbled up in the audio disc circuitry. Depth is amazing in this all metal non motion mode as folks have been saying forever. As a matter of fact, one can really turn the gains up in this mode as opposed to the DISC mode and maintain stability and sanity.

This is something the QII owners can do too I am guessing and it would be superior to the turning of NOISE Filter OFF on the QXT and thus not warranting purchasing another unit.

OH, I forgot to mention one VERY IMPORTANT key item here...... WHILE in the ALL METAL NO MOTION mode... the Whites will still target ID! Thats right! It will provide VDI numbers and Icons as well. Soo if you are considering or have already put up with alot of instability with all the racket of the sputters and popps and instability of the DISC mode, give this mode a try.

My roots are in salt water beach detecting and in this above mentioned mode , the Audio responses of the XLT's and Quantums into a mode that is very similar to a good PI unit. Within a few moments you can begin to hear what an iron signal sounds like in the audio and know not to dig it without even looking atthe meter.

ALSOOOO The Signagraph on the XLT is VERY USEFUL here. If you notice, there is a scale on the bottom of the screen indicating -95 0 +95.

While in the all metal mode and getting a very faint target, note where the graph is forming. ZERO is the breaking point between IRON and NOT. I hate iron SOOO I only dig items in the positive number range.

I rambled enough here, and everyone may already have known this mode of operation but had to get the word out that QII owners are not restricted on depth because they have a great detector . XLT users need not listen to alot of racket and instability. They will of course have to listen to alot of crud in the ground though just as with any of the so called WIDE OPEN pgms, BUT it will sound more sootheing than that box of dicriminating rice krispies in the ears.

Good hunting Tony

More XLT Backyard Experiments. By George (MN)

I did some more tests today with my XLT using 950 coil on my 6" deep clad dime buried several years ago. At DC sens of ONE & DC sens of 15, I had no trouble pinpointing, meter read 6.0" deep & DC phase was about -90 on this dime in my severely minerakized ground (DC phase of -90 to -95 or worse, mostly). I had preamp at 5 & AC sens at 58 as that is the best for DISC in my soil. When I increased my DC sens to 50 or so, the dime read 5.5" deep with DC phase of about -87 & I was having trouble getting a good ground balance & targets seemed closer to each other(wider). At lower DC sens the beep was about 4" wide. I also found out why I used to have problems with the VDI sensitivity giving me readings on non-existing objects, even when VDI was set well below preset. Apparently, the AC sens preset of 64 was too high for my bad ground. Now that I have the AC turned down to 58, I can turn the VDI up to 86, no problem! I like that as the 6" deep dime now produces half to one bar at right instead of half bar or no bar. I have had my XLT 4 years & am still learning, but did not have the forum access back then.

HH, George (MN)

Nickels and gold jewelry, and "Custom Programming". By Monte

First, you have to apprecaite that it is due to "the nature of the beast" and that beast is a combnation of things, but more likely due to the fast-motion filtering concept used. The analog oriented 5900 & 6000 Di Pro models have a problem with nickels and gold jewelry, too, although I feel to a lesser degree than the XLT. All three of these models are of the fast-motion design. If you were to use a Classic series, which is basically the same frequency and uses the same coils, you

would see that they are "hot" on nickels by comparison. They are also a two-filter type, slow-motion detector. Other slow-motion designs are also hotter on gold jewelry and nickels than the XLT, such as the Tesoro line.

As has been mentioned, there are several things you can try, and that is the key. TRY them and learn what seems to work for you rather than just accepting someone's programm, no matter how good, and putting 100% faith in it.

I suggest using a discriminate setting that accepts everything fro at least -35 all the way to +95. I do NOT suggest rejecting anything in between, especially in the -9 to +3 range. Those few segments would have cost me several good targets. I have pulled a few nice gold rings that were +1 to +4, and I 've also recovered nickels down to -5.

If you are comfortable with accepting even lower numbers, it would be to your advantage. I will sometimes run all the way down to -40 to -60 because the ground mineral is so bad.

I don't describe it as "adding" to the signal, rather you can pass the target signal more easily because there isn't as much bias filtering of the ground mineral signal.

I am also fond of using lower audio Tones, such as in the 180-185 range IF I am in an area where I anticipate finding lower conductive targets. Another tip is to turn Tone ID "OFF" if you want better performance on the lower conductive targets.

Keep Bottle Cap Reject at a setting of #1, do NOT increase your Recovery Speed from the stock setting of "20", and if you are working a site that is trashy with mostly small iron trash then after the initial ground balance procedure, turn Ground Balance "OFF."

Depending upon the type of site you are working and the likelihood of there being any nickels and gold jewelry present, you will have to figure out which combinations work best for you.

Ultimately, however, you must realize that no matter how good the XLT might be, and I can attest that it IS a very good detector, no one detector is going to do extremely well for everything and everywhere. I would suggest considering a second "back-up" detector that will compliment the XLT. I'd say the Classic IDX (or the Classic ID if you're looking at a ower-cost model) is the best compliment for the XLT, and if you are working a site that is likley to have nickels. Such as school and park playgrounds near all the metal structures. Here the Classic's will excell over the XLT. The same goes for the very trashy sites and maiing use of a small coil.

The XLT is a great detector, but it's not perfect. It as its drawbacks and one of those is how difficult it is to get the nickels. Experiment with a few adjustments and see what you feel gives you the best performance.

Happy hunting and good luck,
Monte

XLT Plays A Tune from [Mike Hamilton](#)

Heres a little known fact that you XLT users might find humorouswhen its raining and dont have anything else to do.

Your White XLT will play a little tune for you. do the following:

- Turn your machine on,and press the menu button.
- Then select Pro option,Then Disc mode.
- Scroll down to recovery speed and set it to 1,
- Then press menu and enter at the same time

..... Enjoy

Spectrum/XLT Tip #1...(DEEP Coins) from Mike - St. Louis

The Spectrum/XLT machines get great depth, but you have to know what to have your machine set at and what to listen for.

First of all Pre-amp Gain and A/C Sensitivity settings are crucial to getting deep-seeking performance. I typically start both settings at about 90% of their range and back off a little at a time until detector operation stabilizes (occasional minor falsing is ok, if you can get used to it.) Also on your discrimination, go in and accept +95. If you don't get too much high pitched whining afterwards, leave it there.

Now you are ready.... first thing to remember is that your machine should make a loud fairly repeatable signal on a coin at 7-8 inches. On deeper coins, the sound will be muted and your ID meter will start classing nearly all non-ferrous targets at +95. The way the discriminator works, is that if the target is so deep that the signal is too weak to assign an ID number to, it will classify it as -95 or +95 depending on if the target is ferrous or non-ferrous. The point being that coins and most other non-ferrous objects that are at 8 inches or deeper will raise a bar at +95 and an occasional one at -95, so when you see this on your meter, and the target is very faint, DIG IT!!! This method will sometimes net you a lot of incredibly small and deep junk, but if you use this in a location where you know that there are good targets deeper than 7 inches, you will surprise yourself with the really nice, really deep finds you can make. I have surprised myself over the years with some of the incredibly deep stuff I made this way.....bust half dime at 11 1/2 inches, shield nickel at 14 inches are a couple that come to mind. Remember that this type of deep digging requires a very efficient long bladed digging tool to make digging those deep holes quicker, because you may dig several holes for each really deep coin you find, but it will be worth it! I use a bowie kife with a 10 inch blade that will cut out a 6 inch plug with no problem, so that I only have to probe and sift through the next couple inches to retrieve the object with minimal damage and marking. Hope this info helps some of you out there to get more out of your Spectrum/XLT.

HH, Mike

Spectrum/XLT Tip #2... from Mike - St. Louis

This isn't really a "tip", but it is an interesting way to use this machine for hunting very deep coins. First of all, this will work good in an area where coins or other good targets run deeper than 7 inches and isn't loaded with too much trash. Set up the machine to run in Tone-ID or Mixed Mode and adjust it to the hunting conditions (set ground balance, A/C sensitivity, Pre-amp Gain). Then turn on VCO/Ratchet Pinpointing and set D/C Sensitivity to a fairly low number, like 2 on the 1-5 scale (Sorry, don't remember the scale on the XLT). Now, when you start hunting, click the trigger forward to hunt in the all metal (pinpoint) mode......you need to set ground balance to get a faint

threshold in the pinpoint mode to get maximum depth. You are going to search for the faint soft signals (not the short choppy ones, these are tiny bits of surface trash). When you get one, pull the trigger to normal detecting mode (discriminate) and sweep over target, if it reads at VDI #0 thru +95, dig it. You'll find that those very deep signals that are non-ferrous ("good" targets) will generally ID at +95, or anywhere in the positive range. Basically what you are doing is hunting backwards......that is hunting in the pinpoint mode and checking the target in the discriminate mode. This is handier than actually hunting in the preset all-metal mode because you get the maximum depth out of the machine while still being able to use the discriminator to determine whether to dig or not. I have used this mainly in the parks that have had all the coins from 1-7 inches recovered and where there are deeper ones to detect. I sometimes get in a rut where I dig a lot of 12" deep nails, small bullets, or other old junk.....but when I get a coin from that deep it is almost always something very old.....bust/seated coins, shield nickels, 2 and 3 cent pieces, etc.... It takes a little getting used to, and I may not have explained it good enough above, but if you have any further questions, e-mail me or reply here.

HH, Mike

Spectrum/XLT Tip #3... from [Mike - St. Louis](#)

For coinshooting in extremely trashy spots, and I'm talking a literal carpet of pulltabs, bottlecaps, nails, etc., I suggest getting a 4" inch coil for your machine. I have found these coils for the Spectrum/XLT to be very helpful on finding older coins that are buried under surface trash, and when your detector is adjusted right, you'll get a good 7 inches in depth....... much better than any other manufacturer's machines with tiny coils. I have tested this 4 inch coil in situations like a silver dime 3 inches directly under a pulltab and it saw that dime....as long as any part of it stuck out from under the pulltab, it could be detected. When you set up your machine to use this coil, remember a couple basic things. First of all, since this coil is much smaller, you can boost the A/C Sensitivity and Pre-amp Gain up higher than with a larger coil. Secondly, go to Recovery Speed in the Discriminate menu and set it down a little lower (I usually run it at near the lower limit.....such as 5 on a scale of 1 to 40). When you hunt with this coil, vary your sweep speed.....a fast pass followed by a slow pass overlapping it.... the fast pass will tend to hit the deeper targets, while the slower one will snoop out the shallower targets right under a trash item. Do this sweep pattern, overlapping the previous one by about 50%..... remember, that with this type of hunting, you are not going to cover much ground very quickly, so have patience and chose an area that has a likelyhood of dense target distribution like along a curbside where all the bottle caps are thrown out or around an old concession stand or in an area full of nails, pulltabs or other trash (Wherever there was an unusually high amount of foot traffic to assure that there are larger odds of hidden goodies under the thick trash). When you get a good hit in discriminate mode (Tone ID or Mixed Mode) sweep the coil in a very tight "x" pattern rapidly over the target center....you'll find that the good targets will start to lock on the coin range while the trash will break up. When I first used this 4" coil and above method, I went to an old local park with an old yet small picnic area that was very heavily used for about 70+ years. This area had been "hunted out" by many people with many different detectors, so any easy or half-way easy coins were found. To make a long story short after 2 days, I found over a dozen silver coins, dozens of wheats, and some indian heads, many around 5 to 7 inches deep, AND Many of them came out of the ground with a pulltab or bottle cap or 2 in the same hole. I was amazed and used this same method in other parks with similar results.....so if you think you might know of a spot where this would work, go get a 4 inch coil and give it a shot. Let me know how good you do..........

HH, Mike

Spectrum/XLT General Tip... from Mike - St. Louis

First of all, with the XLT use the Tone ID, AND the Visual ID meter together. Tone is a good indicator, but you need to master the meter, here are some things to remember.....First of all, the XLT is not a good discriminator at slow sweep speeds, you need to rapidly sweep over the target for the visual id to "lock on" a particular number. Remember, when pinpointing, use an "X Pattern" over the target for an accurate ID. The XLT meter is a "signa-graph" meter, which means it raises one or several bars with each sweep over the target. Clear shallow targets will usually raise one or two tall bars without any others. Deeper targets and targets in the presence of trash or mineralization will raise several bars, because the machine is processing multiple ID's in that sweep (the target, surrounding trash, mineralization, etc.) The trick here is to keep the coil close to the ground and sweep rapidly in an "X pattern" and the machine will start losing the weaker ID bars, and "lock on" to the strongest ID bar. You can use controls such as ACCUMULATE, AVERAGE, and FADE RATE on your machine to control how many bars and how fast they appear and disappear on the screen to get to a comfortable setting.

HH, Mike

Spectrum XLT Additional Depth - Simple Tips from Eddie in VA

For additional depth of the Whites Spectrum XLT the three most important functions are;

- A. C. Sensitivity,
- V. D. I. Sensitivity,
- Pre-Amp Gain, with Pre-Amp Gain being the most important.

(1) – Start in Factory Pre-Set Relic Mode or Coin Mode.
(2) – Go Basic Adjustments to A. C. Sensitivity, then [increase some]. Then squeeze and release trigger and Air/Ground Balance, and then return to the last menu.
(3) – Go Pro Options to Display to V. D. I. Sensitivity, then [Increase some]. Then squeeze and release trigger and Air/Ground Balance, and then return to the last menu.
(4) – Go Pro Options to Signal to Pre-Amp Gain, then [Increase some]. Then squeeze and release trigger and Air/Ground Balance, and then return to the last menu.
(5) – Save in Custom Program (Renaming the Custom Program is optional)

Just make sure your threshold tone is constant that is why no increase values are given for items (2) thru (4). Personally, for the time being, I have only increased my AC Sensitivity by 4 to 68, and Pre-Amp gain by 4 to 6 and seems to be stable in my soil conditions with at least two more inches in depth. I hunt for CW Relics, but should work for coins as well if you start in the Factory Pre-Set Coin Mode.

In high mineralized soil Increase Pre-Amp Gain up to 4 or 5, then decrease AC Sensitivity down to 55 to 60 for stability.

Do not forget to re-ground balance after increasing each of these functions by trigger squeeze, release, then press Enter, then balance, and then return to the last menu.

XLT Preamp & Sensitivity. Posted by Robert Hoolko (Oregon) on Tnets forum March 13, 1999 at 10:39:20

Increasing Preamp gain is similar to increasing both AC and DC sensitivities but not exactly the same.

The first place the received signal from the coil goes is the preamp, which really is an amplifier. It is an analog circuit that amplifies the signal enough for the other circuits in the detector to work. After the preamp, the signal is demodulated, balanced, and filtered. Both the filtered (AC) and non-filtered (DC) signals are fed into an analog to digital (A/D) converter which converts the analog signal into digital numbers. Those number are read into the microprocessor. After that everything is done in software.

The AC and DC sensitivities are not amplifiers they are attenuators in software. When set to less than the maximum setting they throw away part of the signal read in from the A/D converter. Since the signals are noisy this is a good strategy. It gets the noise down to a level that you can tolerate, and lets you recognize a target signal when it comes along.

For moderate signal strengths the preamp gain and sensitivities are roughly interchangeable. That is you can turn up the preamp and turn down the sensitivities and get back to the same overall gain. But for extremely strong or extremely weak signals that is not true.

You can think of the A/D converter as a doorway that the signal has to get through. If a signal is too large it will not fit through the doorway and you get an overload. If the signal is too weak it will not make it over the threshold of the doorway, and no signal gets to the microprocessor. So if the preamp is set too high for the coil you are using and for local conditions, you will get a lot of overloads and no amount of fiddling with the sensitivities will save you. And if the preamp is set too low, the weakest signals will never get to the microprocessor and again the sensitivities will not help.

But fortunately the dynamic range of the A/D circuit is quite large, so you do not have to constantly live in fear that you are missing targets if you do not have the preamp set exactly right. Preamp settings of 2 to 4 for the 950 coil should be safe for most of the country. You should not have to turn it lower than 2 unless you have really bad conditions. And if you have good conditions you can go above 4, but as you go higher you eventually will start getting overloads from normal targets. Different coils might require different preamp settings.

Robert in Oregon

One Tone, Two Tones and Multiple Tones. Posted by Monte on Tnets forum March 4, 1999 at 19:58:59

If you have the Mixed Mode 'OFF' and Tone ID 'OFF', then all targets will have just one tone. If you turn Mixed Mode 'ON' then you will have a lower, growly tone for the All Metal, and a distinctly different tone for the Discriminate response. Now, if you turn Tone ID 'ON' then you can hear the lower growl from the All Metal signal, and the motion sensitive Disc. will respond with different tones based upon the conductivity levels of the various targets.

I would bet that you are confused a little because you can not hear the difference to know when it is All Metal or a Discriminate response. Here's what you might want to try.

Because the All Metal signal is now requiring some motion, sweep VERY, VERY slowly over a coin at about 4" to 6". VERY slowly! As th coin enteres the electromagnetic field you will hear the circuitry start to rspond. If you move too fast then you will activate the motion discriminate response. Mixed Mode lets you creep that coil into certain confined spaces and at a speed where the GEB Disc. motion speed would not work, or would perform very poorly.

Monte

PS: It really gets to be interesting if VCO is also turned 'ON'

A Great tip from [Arild Martinussen](#)

Here is a short description of my "standard setting", based on Jewelry/Beach:
Set Preamp-gain at 15 (yes fifteen...)
Turn down AC to 40-45 (as high as you can until false signals)
Try this with a fast sweep speed, and you will go deep...
If error occours, adjust only AC down. (You don't have to re. air/ground balance...)

ATC ... Helpful tips for non-metered and metered detector operation. Posted by [Monte](#) on Tnets forum September 23, 1998 at 17:52:10:

NOTE: Each brand of detector has some operating characteristics that are unique to their design. Therefore, not all of these suggestions will apply to all detectors, although most will assist anyone who searches with a motion discriminate detector. Although I made this post originally for those who had some questions about users of several Tesoro models over a year ago, it really can benefit ANY operator of a good motion discriminate detector. Most of these tips and techniques stem from my field use of non-metered detectors through the years, relying on the audio response, but can really benefit those who use metered target ID detectors as well.

Since doing seminars I started in '81 I have incorporated several terms, such as AUDIO TARGET CLASSIFICATION, or ATC. We all know that target identification is only somewhat "accurate," and in-field use might only fare 15 to 35% for coin and jewelry hunting. There is more audio information available than many realize. Since most of us are coin hunters, we therefore search for coin-like target signals. Here are some tips I hope will be of help:

SIZE & DEPTH ESTIMATION: In a metal and target-free area, place a small, medium and large coin on the ground. In the Disc. mode, with your discrimination set at a point to just reject a surface nail, and any manual ground balance adjustment made, sweep over the target at about 2" and "listen" to the response. Then raise the search coil while making consecutive passes directly over the target, noting what the audio sounds like as the distance is increased. Finally, note the maximum distance (depth) you can achieve. Do this with rings, too, and you'll note similar results, except perhaps a little less depth.

Now, if you get a good, repeatable signal when searching, simply raise the search coil while making a few sweeps across the target to compare the response with your "best possible" in-air

response. If you can get a coin at "X" inches, yet you can raise your coil 4" to 12" more than that, then it is a larger object and not a coin-sized target.

NARROW vs WIDE TARGET SIGNAL: This popular method is done in a conventional All Metal mode. Once a target is detected and generally pinpointed, move your search coil to the side so the coil's edge is past the target. Switch to the All Metal mode and slowly sweep towards the target, noting where the leading edge of the coil is when you hear a response to the target. Then, do the same from the other side of the target, again noting where the leading edge is when a good signal is heard. If these two visual "marks," where the leading edge was when a signal was heard, are almost over-lapping or within an inch or so, it is a narrow target signal. A coin-like target signal. If you get a noticable increase in audio starting out from the pinpointed spot by a couple of inches or more on either side, it is either a larger target, such as an aluminum can, or an iron-based (magnetic) object like a round washer, etc.

PROBLEM TARGETS and "QUICK-OUT": A good, old-fashioned TR-Disc. will easily reject a bottle cap, rusty or not. The motion discriminators have some difficulty with them. I am NOT referring to a screw caps, but to the pry-off and current twist-off bottle caps with the scalloped, crimp-on edge. Often you will get a rather good-sounding audio signal from a bottle cap in the discriminate mode. If the response is from what appears to be a fairly shallow target, say surface to 3" or so, then try the All Metal mode test for Narrow vs Wide signal. Often the rusty bottle caps will produce a wider signal than a coin-type target. If you still question the target, pinpoint the target more precisely.

Now, give a more "brisk" sweep across the target dead-center. (Note: make it a SHORT and brisk sweep to avoid covering multiple targets) Quite often, a bottle cap or other problem target with magnetic properties will be "kicked-out" with this quick-sweep technique. It works best on targets that are within the typically shallow range, perhaps from surface to 3"-5", depending on the mineralization.

As stated, it will "often", but not "always", audibly reject these problem targets, but it only takes a couple of quick passes to try and "classify" the target this way. Although the audio response might still be there, those with metered units might note that the ID is now reporting "iron" or at least "jumpy or unstable."

EDGE PASS REJECTION: Like ATC and "QUICK-OUT", I incorporated a term to refer to techniques I've used since the early '80's with motion discriminators. Edge Pass Rejection, or EPR, can be used with "Quick-Out" techniques, if necessary, for really challenging situations.

Lay a coin on the ground and sweep over it, dead-center, at about a 2"-3" height. Note the good audio signal. Continue to sweep over the target coin as you draw the search coil back towards you and note any audio change. You'll see that most of the time a coin will continue to signal well until just in from the edge of the coil (perhaps an inch or so). Now, advance the coil and note that the same is true in from the back edge of the search coil.

Repeat this with a steel washer or a bottle cap on the ground. Dead center with a slow, comfortable sweep, you will probably get a good audio response. However, you will note that as you back the coil off while sweeping and get near the "edge" where the coin still sounded off well, the problem trash item will be rejected! Advance the coil while crossing the junk target and you

will note that the same result occurs from the back edge of the coil, where the coin was still responding the trash is rejected.

On some really difficult targets, like pesky bottle caps, combining "Quick-Out" and EPR will "classify" them as undesirable ferrous trash targets. Please remember .... the sweeps across the targets in question should be brisk and short so as not to cover additional near-by targets. In some sites, (such as drive-in theaters) this is very helpful, especially when using a smaller coil, such as a 4" to 7", to handle the trash problem.

Once again, those who use any form of metered ID will benefit from this technique as it will tend to make the "jumpy" or "bouncy" target readout register and lock-on as an iron object.

DISCRIMINATE CONTROL ADVANCING: This is a somewhat popular technique, but one which I seldom use. With this method an operator will set the discrimination low to respond to most targets and then, upon receiving a signal, they make MANY continuous passes across the target as they slowly increase the discriminate control to note where the target "falls out" and then decide whether it is maybe a nickel or maybe a tab or maybe a ????

I do not like this method as it is quite time consuming. Earlier explained techniques are done with only a flip of a toggle switch or push of a button to go into All Metal, or else with only a couple of quick sweeps over the target in the Disc. mode. This control advancing method often requires two hands, and a lot of time, plus you have to consider what your goals are and what your tolerance level is in the first place.

If increased too much you will lose gold rings and jewelry, as well as the nickels. You will also lose some depth. Then, too, the more discrimination you use the more you have to be aware of your sweep speed. To test this, bury a penny at 3" to 4" and sweep over it in the Disc. mode set at the minimum setting. See how slow you can go and how fast you can sweep and still get the coin. Then, sweep slowly as you increase the discriminate control until the coin is just rejected and then back off just until you get a good signal. Give it a faster sweep as you had with the discriminate set at minimum. If you are in very mineralized ground you may have lost the target. It depends on the detector used.

IN CONCLUSION: There will be other audio sounds you'll learn with your detector(s), in conjunction with your chosen set of headphones. "Bleeps" or "Blurps" are interpreted differently by each of us so I can't suggest how you would describe your good vs bad target sounds. But the audio responses are there, and you will learn them. Each detector has it's own personality, but I am sure that by employing some of these techniques I have used and taught you will be able to better handle some of the problem areas you encounter.

ATC methods help you "classify" a lot of bad targets both audibly and visually. I hope this will enable you to enjoy more outings, recover a little less trash (when YOU feel it is desirable to do so!) and find more good targets for the amount of time spent afield.

XLT Tips Thanks Jim (calif) for the following tip:

"Recovery speed: This is real simple, if your recovery speed is to fast you will lose depth if you can keep it at the factory preset or just a little lower, this will give you max depth as far as the recovery speed gos.

Bottle cap reject: This will not only affect depth but sound also, if it is set to high the machine will reject the caps in such a way as you won't hear them or they will be brokin in sound if you do, by setting the BCR at 1 will give the most depth and will make your nickels sound better,(I could throw in the part about masking but....) as they are made of the metal nickel which has a close relationship to iron.

As Paul Harvy used to say: The rest of the story......

To get a bit more Depth there are a couple of things you can do.... accept +95 if you can this will give another inch or so..... then try mixed mode, here you are useing (AC) motion (DC) non-motion or disc. and non-disc.this will give you a couple of inches. By opening up your numbers accept from -40 to +95 will not only give you the depth but I guarantee will make all your sounds and tones sound much better. any questions just email or ask here.... 73 Jim (calif)"

Thanks Dave Phillips in the United Kingdom for the following tip:

"I suggest that you turn the icons OFF as it will improve the response and should anyone of your visitors be hunting Roman coins they should be aware that many of the late period AE 3 & 4 coins come in on the display close to + 7 as many appear to have a slight iron content. In the uk the Roman sites have a lot of Lead fragments and I have found that many of the silver coins and plated silver coins give indications similar to lead on the display."

Great beginners tip Posted by Mike Ramon(St.Pete,Fl):

"Get some pulltabs(round, square,etc..), and bottlecaps as well as a zinc penny, nickel, dime, quarter, half dollar, and dollar coin. Now lay them on the ground with a few inches seperating them. Check the sound and display of each target. All the coins will be a nice crisp sound. Check the pinpoint on the coins. They all have a distinct center. The pulltabs and bottlecaps are also small objects and will usually have this good centering also. I usually only hunt with ratchet pinpointing turned off so I get a true size of the target when pinpointing. I can still detune the XLT by double-clutching the trigger if I have to. The round pulltabs will usually come in the 20's VDI depending how large they are. The broken round ones will come in like nickels(19 to 25 VDI). I look for the VDI centering on 19 for nickels after a couple of sweeps. Bottlecaps usually don't have a nice crisp sound to it and the VDI is not as steady on them from different directions of loop passes. Always check the VDI and see if the numbers are close together. Bottlecaps can have a wide range of VDI numbers being displayed. Zinc pennies usually center around 64 VDI, dimes around 79, quarters around 85, half dollars high 80's, and dollars around 93. Indian Heads come in like zinc pennies but will usually be deeper in the ground. Silver on all dimes, quarters, half dollars, and dollars will usually read just a little higher than their counterparts. I like to use Tone ID and can usually tell which kind of coin I ran my coil over just by the sound alone. Try using Tone ID on your test targets. This just might be the ticket that you are looking for. I forgot to mention that the square pulltabs will be in the 40's and the bottlecaps in the 50's & low 60's. In any case, look for a close together spread of VDI numbers being displayed and a distinct center in pinpointing with ratchet-pinpointing turned off. A tip to get better sounds from your targets would be to lower the bottlecap reject and to accept +0 to +7 VDI numbers into the coin or coin and jewelry program. With the excellent sound and display that the XLT provides, I sometimes wonder why some MD'rs use so much discrimination when it usually isn't necessary. If you can't seem to get the hang of the 9.5 loop try the 5.3/6.0 loop which is worth its weight in gold. Mike"

The following tip Posted by Mike Ramon(St.Pete,Fl):

"Try tweaking the sensitivities up a little. Put VDI sensitivity to 85. If using the Jewelry Beach program, it is already there. When bumping up the sensitivities, turning on modulation seems to help stabilize the machine, also you will instantly know when something is deep by a lower tone. Bump up AC sensitivity to 69 or 70 and check how your threshold sounds. If not getting false signals, go to Preamp Gain and bump it up one at a time with a balance after each one. Keep doing this until you start getting false signals mixed with the threshold. Back it down until no more false signals. Go back to AC sensitivity and see if you can raise it any higher. Usually you can't but you never know. Keep the coil parallel and as close to the ground as you can. But you already know this now, right? :)) Also remember, the older the site in combination with it having a lot of past traffic where one could lose coins is definately to your benefit. After doing all this, your coil STILL has to pass over the goodie!"

The following tip Posted by Mike Ramon(St.Pete,Fl):

"Silver rings will usually show up in the low 80 VDI #'s. Gold is much more difficult. First, you have to contend with the different Karat rating for each particular ring. Gold rings are alloyed with different base metals also. If this is not enough, the size of the ring has an effect on the VDI also. Small gold rings will appear in the foil range usually +9 to +12. Others can run the gambit of the pulltab range. If the tone sounds good and you have a steady VDI(tightly grouped) from different angles of detection, dig."

The following tip Posted by Tom in CA:

"Forget the bottle cap reject option on the XLT, there's some drawbacks in that it may soften the sound of some deep targets. Instead do this when you're in an area w/bottle caps: When you get a signal, slightly increase the speed little by little, and from slightly different angles. Bottle caps will always break up to some degree w/increased sweep speed. Coins will alway come in better w/increased sweep speed. You'll also notice that the slower you sweep over bottle caps, the better they will sound. This characteristic was very well pronounced w/the older Whites 6DBs 6000's, and is still a trick that can be used on **the newer Whites."**

The following tip Posted by Coinist (OH):

"If you just want to coinshoot in a newer area and you are not afraid of missing some jewelry or indian heads etc. Take your favorite preset program or your own program and make the following changes."

Accept +15 thru +25 : This will get most nickles outside of the Silver War nickles and a shot at a Gold ring

Accept +70 thru +94 / +95 : This will get Copper Pennies, Dimes, Quarters, Halves & Dollars

"With these settings you won't have to dig very much junk as it elminates bottle caps, tabs, zinc pennies, and other things (good and bad!). But remember for every piece of junk that you discriminate out you take the chance on discriminating out a good target. This is a setting I use when I go coinshooting at one of the newer schools or parks and don't want to dig much trash.

You can modify these settings to your own liking and have fun playing with your XLT at the same time. That's the only way to learn."

The following tip Posted by Coinist (OH):

"When I coinshoot I use a variation of 3 programs they are accept(+8 to +95) this will get most coins, I use this setup when I suspect Indian Heads, accept (+10 - +27) & (+70 - +95) this cuts out a lot of junk and still gives you a shot at a gold ring, nickels, copper pennies, dimes, quarters & above I use this or a variation of this for newer schools and parks. At newer places when I get tired of digging trash I just accept (+70 - +95) which gets very little trash and still gets copper pennies, dimes, quarters & above. These are setups I have done very well with try them if you like. Some will say don't even try them, but then some said the world was flat. In the end we all have to decide what works best for us. HH Coinist"

The following tip Posted by Coinist (OH):

"HOW TO MAKE YOUR OWN XLT RING PROGRAM

We are all looking for a program that finds only rings and little junk, but the fact of the matter is there aren't any. The way a ring enhancement program works is to accept everything from about (+4 to +94 or +95). Then eliminate the known "bad" VDI numbers common to the area you are searching. The best ring program you can get is one that you modify yourself so that the discrimination settings fit the area you're searching. The most important things to remember when making a ring program are the discrimination settings (gold is found from the low VDI #'s to the high VDI #'s), and not setting the sensitivity options too high (AC Sensitivity, VDI Sensitivity, and Preamp Gain). These are the options that are bumped up to get added depth when looking for the older deeper coins. If you set your sensitivity settings too high it tends to make even the bad targets sound good. After getting your program loaded with the settings you like, hunt an area for while where you suspect there may be jewelry and dig the good sounding signals. When you encounter a particular type of ab or junk item again and again, eliminate that VDI number or numbers from your program. Keep a listing of particular tab & junk VDI numbers common the area you're searching since no two areas are exactly alike. Then when you revisit that area you will know what particular VDI numbers to eliminate from your program."

The following tip Posted by Unknown:

"Recomended Settings For High Junk (Trash) Areas

Turn on TONE ID, Turn on VCO

Unless you are tone deaf, you are losing the information you could get audibly regarding whether or not you have a shot at a valuable target... no sense digging trash. I had a terrible time learning to pinpoint without the VCO on. The ability to search the strongest signal right left and then to and fro is a time saver.

TURN OFF the ICONS, ICONS ON wastes processing speed, and helps you lose focus on the VDI number and what the VDI number is likely telling you. You will dig a lot less trash if you think about what the VDI is telling you... this will leave more hunting time to dig good stuff.

You can play with AC Sensitivity and the like... but try these three changes first... and then vary the other changes one at a time to suit what you like and what works best in your area.

In real trashy areas MIXED MODE ON will likely drive you crazy, but it sends both the all metal signal and the discriminate signal through simultaneously. It is reported to give a significant (25%) depth increase and keeps you from missing things will it is rejecting closeby targets. I believe I have seen that increase when using the mixed mode --- how you tell for sure I don't know.

Swing your coil evenly and slower than you would "if you were in a hurry". The even sweep seems to help gain targets.... why I don't know."

15. ADVANCED TUNING FOR EAGLE, SPECTRUM AND XLT

Custom Program One (Land: Parks, Playgrounds, Schools)

The following changes are recommended by Trans Bay....

Custom Program 1 (For Land Applications)

These changes will optimize response on jewelry and coins at deeper depths which would be normally masked or broken up by rejected bad targets or ground mineralization. The main emphasis on this program is to enhance selectivity of desirable targets and to minimize the digging of junk type targets.

Pro Option Changes:
Tone ID: On (Helps to differentiate bad from good targets). Deeper targets will tend to be clearer to hear.
Trac View: If Trac View is continuously flashing, this would indicate along with too much audible gating (nulling of threshold) that TOO MUCH sensitivity is being used. Use it like a thermometer or gauge to dial in the right amount of sensitivity.
Edit: The following will optimize depth and enhance response on good deep targets.....

NON-Ferrous Targets
+95 to 68 [accept] Silver Rings, Coins, Clad Coins
+67 to 63 [reject] Reject Zinc Penny
+62 to 38 [accept] Small Silver Rings, Large Gold Rings, Keys etc.
+37 to 33 [reject] Nuisance Lift Tabs
+32 to 06 [accept] Nickels, Small Rings
+05 to 00 [reject] Tin Foil

Ferrous Targets
-01 to -39 [accept] Mostly Ground Signal
-40 to -95 [reject] Iron/Ground Signal

By using this User 1 program, the ground signal will start to add to rather than detract from signals on deeper good targets. You will lose a small amount of gold rings in the +37 to 33 range but the time saved is well worth it.

Note: User 2 is an expansion of User 1, with following changes in the Edit portion;

+95 [Reject] in Black Sand Beaches when stability cannot be controlled by reducing the sensitivity.
00 to +06 [accept] Small Chains and Jewelry
-50 to -01 [accept] Increases Additive Signal to deep coins.

A word about sensitivity: The Spectrum gives you a wide dynamic range of sensitivity. Don't get carried away. Too much sensitivity can work against you in trashy areas (more than one target on the average per sweep) and heavier mineralization. The sensitivity setting should be used to dial in optimum stability of threshold....key to excellent performance.

When one is hunting at the park and beaches, set the sensitivity control high enough so that when in the Discrimination Mode, you can pump the loop up and down and not hear the nulling or gating effect on the threshold which sounds like a bad target being rejected. Optimumly if one reduced his threshold down to a point where your typical abundant light foil targets are ignored, this would optimize the Spectrum in terms of bad target recover and masking problems. Contrarily, to run the unit at excess sensitivity will cause severe negative response (nulling) on small trash and increase the recover time of the threshold.

A word about Mixed Audio. This mode is quite frankly the deepest one because your listening to the all metal mode AS WELL as the discrimination mode. All metal mode will as a general rule hear the deepest of targets. In a trashy park area your going to unfortunately hear the trash as well as the good targets and too some this mode can drive you bonkers. In a cleaned out park, its one worth using. Because your running the unit in all metal mode, you can slow down much like the slower two filter units. When you hear a target that's relatively deep (usually beyond 4 inches), make a couple of quick short passes over the target center which helps to enhance the audio response of the Discrimination mode.

I don't care too much for this mode myself and I don't recommend it for the beginner. Stick with the U1/U2 programs mentioned above.

Also....If I didn't mention a given basic/pro option, this is because I can't determine for instance the optimum settings for target volume, threshold, etc....your going to have to make this change yourself. Other options are pretty much left as the factory set them (default). Any questions about making the changes....don't hesitate to call me.

16. MASTERING THE WHITE'S SPECTRUM XLT

....A truly wonderful general-purpose detector!

by Monte

As with any effort to convey personal thoughts and opinions I know I am destined to hear some complaints about my programs. While that is expected, I also hope to receive some favorable replies along the way as well. I know that my programs as just that …… Mine. Designed by me and for me based upon the types of sites that I am most likely going to encounter, and for my 'style' of searching. Knowing that this write-up will be reaching XLT users from the experienced, to the occasional, to the novice who's planning on the arrival of his or her XLT any day, perhaps it would be good if I share a little background about me. That way you might appreciate just what I mean by 'my style' of hunting. To help you get a feel for the types of sites I prefer to use the XLT, the coils I favor, and how I have come to regard the XLT as an important tool in my arsenal.

I started back in March of '65 when we referred to them as "Metal-Mineral Locators" and my earliest unit was a homemade model from a kit my older brother, Ed, had ordered. That early unit, and all those I owned until 1971, were of the BFO (beat frequency oscillation) principle. Some of my fondest early-day detecting memories are with my brother in the late 60's using a White's Ghost Towner BFO. In '71 I switched over to using the TR (transmit/receive) type detectors and my finds continued to increase. Early to mid-seventies I had my best success with the Compass brand, and then I started to use the Garrett, D-Tex and finally Gold Mountain VLF/TR-Disc. models starting in '77. I have always been one to 'resist change' unless I can see a definite advantage to

doing so. So, when the motion discriminate (VLF-Disc.) models started to appear I gave them some consideration, but found their very fast whipping-speed requirement to be unpleasant. Besides, it didn't suit me and my old-site searches well, either. Most were heavier and awkward by comparison to what I was using.

When Fisher came out with their 1260-X I liked its slower motion sweep speed, but not their terrible iron nail rejection. I could appreciate, however, the ultra-slow motion and silent-search performance of the Tesoro's when the Inca was introduced in '82 and I quickly converted from the VLF/TR-Disc. types to the VLF/VLF-Disc. designs. Almost immediately I noticed I was finding more good targets and less trash. Ghost town and other old-site searches were really paying off and I found myself spending more and more time 'out of town!' Even after working in marketing for Compass Electronics and dealing with their offerings in slow-motion models, I still preferred the audio qualities of the Tesoro line. Gold Mountain had 'died, but was resurrected in the late 1980's with a few models which were light weight and well balanced, and mimicked the performance of Tesoro's discriminate circuitry. At the same time another short-lived company, Pillar Electronics, came on the market with two models that also rivaled the Tesoro performance.

During this time not only were there several other slow-motion models offered to the consumer, but the newest 'fad' was the incorporation of "target ID" circuitry. Most with this feature were the faster-motion detectors, but it wasn't something that impressed me very much. Too many people fell into the trap of putting near 100% faith in their target ID models. Though you could limit some recoveries to most-likely coin targets, you also missed a lot of coins and desirables because they were too deep, poorly positioned, or near by some other metal that masked their signal. In each case the TID was either 'off' or was not a reliable 'lock-on' signal. The Teknetics 'Coincomputers' and White's 6000 Di Pro were the first target ID models that got my interest up, but I still preferred to rely on the quality of the audio response. There's more information available from good audio responses than many people realize. I continued to resist change. Besides, most of those TID models were not only faster motion designs, but they were too heavy for day-long searches in the ghost towns and didn't function very well in the high trash scenarios typical of my normal destinations.

Besides, I knew that most Indian Head cents and many early 'Wheaties" (into about the mid-20's) were less conductive and discriminated out about like many of the screwcaps that were becoming popular. Most of those early TID designs didn't reflect that, simply lumping 'penny/dime' signals together and not factoring in the lower-reading older cents and zinc cents. Along the way, however, I kept an open mind to at least consider a target ID model, should one come available that really appealed to me. Of those earlier offerings, the White's 6000 Di Pro struck me as being perhaps the best in TID concept and accuracy. The 'package' was not, however, appealing to me.

Then White's came out with the Eagle, Eagle II and Eagle II SL 90 models. Not only more visual information available, but also more functions a user could control. Still, however, not a good pick for the older towns and homestead sites **. Then I moved. I was back into more urban areas and didn't have the quick access to as many dated locations. I had more city parks, city schools, city parking strips and obviously a lot more city yards to detect. That also meant I had a lot more city trash to have to deal with. And what should come along about then to get my attention? Signagraph. With the introduction of the White's Spectrum I realized there was finally something offered that could give me more visual information that could certainly support the audio information that I feel is very important. Not only that, but it also offered several audio functions

which I thought were appealing. The ability to increase the target volume, to select an operating tone (frequency), the tone ID in the Disc. mode and the VCO in the All Metal mode, and what has become a favorite with me, Mixed Mode audio. The ability to hear both the All Metal and Discriminate channel information at the same time. Unfortunately, I am frugal and achy. The 'C' cell system was expensive to operate, and the weight and balance still took its toll on me.

With the introduction of the Spectrum XLT, however, it was evident that many of my wishes were answered. The SL's 'slim-line' appearance and better balance were apparent, and with their new 8-AA battery pack I knew that it would be a very 'fuel efficient' detector and much more to my liking. It comes with factory programs that are quite functional and with the four 'Custom Program' slots and wide-range of function adjustments available for the user, I knew it would become my wide-open area, low-trash 'cruiser' unit.

I have had three XLT's during the last four years. I can say 'have had' because there were times when I would become frustrated simply because it is not 'perfect' and I would get into some rather long spells when other models were pulling the load because they did things different or better **. As of this writing, in March of '99, I am making use of a NEW XLT, my 4th, and do not plan to part company again. I have established a good working battery, which includes the XLT, and with my custom programs I am able to get a lot of performance out of it. At my selected sites they work for me. Readers and users comments are always welcome. I enjoy learning, and have ever since taking on this hobby over 34 years ago. I hope that some of my suggestions are beneficial to readers in some way, and that my programs might either reflect an increase in other's success afield, or at least provide a basis for you to design your own 'custom programs.' Some that will enhance performance with a particular search coil, and/or with handling some challenging site conditions.

The XLT has a very wide range of adjustment options. Because they are there it seems logical to many that they must be played with. You might think that it will be no problem to "bump up the performance" or to "get great depth" or maybe to set it up to "find silver coins, only!" Oh, you can do some things with the XLT that will satisfy you, but most of us know that you won't be able to get only silver coins, or that if you accept only the higher numbers that you won't miss some silver coins, too.

I have hesitated printing out and making available any custom programs simply because I do NOT want to suggest that they are 'magic,' nor do I want people to think they are infallible. Most of all, I DO NOT want this to be interpreted as a 'back patting' session or taken in the wrong light. Therefore, I hope everyone will read the following comments prior to scrambling to experiment with a new program.

COMMENTS ABOUT THE XLT:

As I have already stated, I feel the XLT is an excellent detector with a lot of potential, but may have been designed with too much adjustment range in several of it's available functions. It is too easy for a user to get it 'messed up' or to make a program that appears to work great on a table top, but stinks in the field. There are even some adjustable functions that I would prefer to see removed from the XLT completely. That would keep people from designing a poor-performing program, and at the same time making scrolling through the options faster.

I also believe White's did a good job in setting up their Factory Programs. Remember that most of us are just coin hunters, and most coin hunters do NOT like to recover a lot of trash. For them the

COIN program ought to work just fine. If they don't mind digging a little more trash to get a few more coins and improve their odds on gold jewelry, then they can select the COIN/JEWELRY or JEWELRY/BEACH factory program.

As a rule I always recommend that a new XLT user make it a point to use ALL of the factory-set programs until they are familiar with them, and feel 'comfortable' with the little changes there are from program to program. I especially suggest that a serious user, interested in some diversified coin and relic hunting (old coins and small artifacts and jewelry) make good use of the RELIC program. A key to 'learning' with the Relic program is making use of all the visual information the XLT has to offer other than the generalized Icons. The VDI numbers and Signagraph have a lot to offer and many users never appreciate them or use them; simply relying on an Icon that has a 'lock- on.'

Once you are comfortable with the stock programs, have an understanding of the XLT's required and/or allowable sweep speeds, and perhaps have tried an optional coil or two, then you are ready to experiment with some of the XLT's functions.

Suggestion #1: Make sure you are using a set of quality headphones. I do not care for the $14.95 to $34.95 'standard' headphones that most manufacturers sell. Certainly there are many aftermarket headphones that are good, but I personally favor the White's K/W PRO headphones, as well as the Koss TD-81's and a couple of Radio Shack models made for them by Koss. The reason for this is Koss' excellent audio qualities matched by their equally excellent lifetime repair warranty.

Suggestion #2: Turn several functions 'ON' and 'OFF' with each Factory Program to see what effects they have. Make some adjustments to some of the variable features, too, until you feel you have a general understanding of what each is, what each does, and any strong or weak points. Decide if you like certain functions or not, or if they seem to benefit you for the preferred applications you have in mind.

Suggestion #3: Put in some field time with different sized search coils to see how the coil itself can make a difference, as well as how some subtle adjustments might enhance performance with different coils.

DISCLAIMER: The following programs are offered as 'food for thought' and something to try out. I make no claims as to the success you will, or will not, have with these programs, and with this disclaimer I ask not to get a lot of E-mail, telephone or regular mail complaints about poor performance. If you care to drop me a note with any 'positives' that you have, I would welcome them and will gladly correspond with you.

I have listed my "5.3 Bushwhack" program that I use with my 5.3 Black Max coil (same 6" coil as the Blue Max 600) to work in and around brush, trees and/or building rubble ** when I am searching old picnic groves, woodsy trails or 'blanket sites.' It allows a slower sweep speed due to the smaller coil size. I do NOT search high-trash sites with this program as it would be too noisy. It is for those times when I am working older-use sites that are not heavily littered.

My "9.5 Open Range" program is for use with the standard 950 search coil when I am working the wide-open spaces of some of the older parks and hillsides where there is little trash and targets are often few and far between. Quite often, however, those few targets are desirable finds! I do

NOT use this program when I am working IN a ghost town **, but it can work well on the outskirts of towns where I am trying to find any signs of prior human activity. Old baseball fields, picnic groves, watering holes and that sort of thing. Again, it is for sites without a lot of detectable targets. It has also proved worthy in some older parks that are not too trashy.

"Relic Plus" is my personal 'default' program. The first two programs are designed for my type of hunting, and for the mineralization and low trash levels I frequent. I have them set up to that if they are on the 'edge' of stability, I can quickly access settings and adjust for stability. Relic Plus is just a modest enhancement of a factory Relic program with the Mixed Mode, Tone ID, VCO, Track View & Icons turned 'ON.'

As I prepare this write-up I'll remind you that I am in my 35th year of detecting and I enjoy doing just that… detecting, and not detector fiddling. I have my 5.3 Bushwhack and 9.5 Open Range programs set for maximum performance under typical conditions that I encounter; yet I know the few simple adjustments to try should I be unstable upon start-up. If a few logical attempts to gain stability go unrewarded, that is when I quickly load up my 'default' program and get on with detecting!

The Custom 1, Custom 2 and Custom 3 program slots hold the three mentioned Custom Programs. Custom 4 is my 'experimental program' slot. I might put in a 'Flash Money' program for working popular sportsfields, or just have some other program in there that I am working with for a particular application.

As of April 1st, '99, this is 'Revision B' of my 5.3 Bushwhack, 9.5 Open Range and Relic Plus programs. Revision 'A' was okay, then I tailored them to more desirable sites and enhanced their performance under above average conditions that I encounter, and now rely on Revision B.

Let's see the program on the next page…

X

XLT Adjustments	5.3 Bush whack	9.5 Open Range	Relic Plus
Basic Adjustments:			
Target Volume	60	62	60
Audio Threshold	6	8	8
Tone (Audio Freq.)	215	180	180
Audio Discrimination	ON	ON	ON
Silent Search	OFF	OFF	OFF
Mixed-Mode	ON	ON	ON
A.C. Sensitivity (Disc.)	75	80	72
D.C. Sensitivity (All Metal)	38	35	35
Backlight	0	0	0
Viewing Angle	25	25	25
Pro Options:			
Audio:			
Ratchet Pinpointing	OFF	OFF	OFF
S.A.T. Speed	8	7	7
Tone I.D. (Disc.)	ON	ON	ON
V.C.O. (All Metal)	ON	ON	ON
Absolute Value	OFF	OFF	OFF
Modulation	ON	ON	ON
G.E.B./Trac:			
Autotrac	ON	ON	ON
Track View	ON	ON	ON
Autotrac Speed	16	14	14
Trac Inhibit	ON	ON	ON
Discrimination:			
Disc. Reject	-95 to -41	-95 to -41	-95 to -36
Disc. Accept	-40 to +95	-40 to +95	-35 to +95
Recovery Speed	20	20	20
Bottlecap Reject	1	1	1
Display:			
Visual Disc.	ON	ON	ON
Icons	OFF	OFF	ON
V.D.I. Sensitivity	85	85	85
D.C. Phase	OFF	OFF	OFF
Graph Averaging	ON	ON	ON
Graph Accumulating	ON	ON	ON
Fade Rate	10	8	8
Signal (Transmit, Receive):			
Transmit Boost	ON	ON	ON
Transmit Frequency	4	4	4
Preamp Gain	12	12	10

Programming comments: You'll note that I do not list separate Disc. Edit and Block Edit info, nor do I indicate Learn Accept & Learn Reject 'Off' settings. It only stands to reason that you do NOT want to use them. Additionally, if you are selecting Autotrac 'On', then there is no sense in commenting on Course G.E.B. or Fine G.E.B. either . Since you have the automatic ground balance, which you can use with or without Autotrac being turned 'On', similar to the 6000 Di Pro, and because there really is no practical application for the manual adjustment, I feel it is one of the features that could be removed from the XLT's selection. I also feel the Learn Accept & Reject, Modulation and Recovery Speed functions should be removed, and just have the XLT programmed for Modulation 'ON' and a Recovery Speed of 20. Since there is a "Hot Key" access to the Backlight then it, too, could be removed from the programming screen and simply accessed via the "Hot Key."

Hot Keys & Quick Adjustments, and 'Why' they are so 'Hot'

Okay. Now you've seen or 'heard' my custom programs. Since I first handed out some of my programs I've been bombarded with comments about the "instability" many have experienced with y 5.3 Bushwhack and 9.5 Open Range programs. Quite often they are stable when I am out in the 'wilds' and away from the RF interference of the big city. In town, however, you might have to deal with 'WHY' I set them so 'HOT'. Easy answer to understand, especially if you have ever played baseball in the outfield.

Now you could be in left, right or center field and play in close to the bases. That's good, if you're likely to have some shallow hits to go after. But if you are after the deep ones then you would have to start running backwards, trying to 'go deep', and it is much more difficult to estimate how much extra distance you need in order to handle the situation. If, however, you play deep to easily handle the situation you know where you are in order to move (adjust) to be right-on. In baseball it is much easier to run forward than it is to run back. Easier to gauge 'how much adjustment' you might need in order to accomplish your task.

If you are playing with Little Leaguers and hits (coins and typical targets) are most likely shallow, you don't need to go deep and can adjust yourself accordingly. Yet when conditions call for some serious play, "play deep" (depth, for deeper coins, jewelry or artifacts) and run forward (adjust as necessary.)

So, I have set my 5.3 Bushwhack & 9.5 Open Range programs to 'go deep', so to speak, in the areas that I am most likely to use them. Do they have too much sensitivity? Maybe. Are they 'too hot' for a lot of people? Probably. But there is logic in their set up, at least for me.

Let's say you get to a site and fire up the XLT in a "stock", factory-set program. It will probably work just fine, as I have mentioned, and I have a lot of appreciation for White's factory settings. Especially the RELIC program. Anyway, you load a program and then you ask yourself (and don't deny it because you often do) "I wonder how much deeper I can go? -or- "I wonder if I can turn up the AC Sensitivity or Preamp?" Maybe it is; "I think I will try and get just a little more oomph out of the XLT." The problem here is that you have no reference info. You don't have a good idea how much of which adjustments you need. You are 'playing shallow'!

You see, if you turned on a 5900 Di Pro SL, for example, you could do as I would and adjust a Threshold audio, be tuned to Hot Rock Accept, and have the Discrimination set low where it would just be kicking out surface nails. Then run the Signal Balance (Preamp Gain) as high as possible and still be stable, and then adjust the Ground Balance. These are easy knob adjustments and you can immediately hear the conditions and make adjustments if necessary. Turned on and tuned UP all in less than thirty seconds or so. Yet what do you now about the XLT's condition when in a factory-set program? Is it topped out? Just how much can you "turn things up?"

In the factory program you might be very quiet and stable, but you don't know how much of which adjustment is needed, or "how deep" you need to go. The only thing to do is select some options and make adjustments. *** Menu, Scroll to Basic Adjustments --- Enter --- Scroll to AC Sens. --- Enter --- Arrow Up a few increments --- Menu --- Pull toggle trigger ---Enter to start a readjust of the Ground Balance --- Lower the coil and press Enter to get a ground sample. *** Check it out and if you feel it could still handle more sensitivity, repeat the adjustment procedure -try it again, adjust it, try it, adjust it, try it.

Then you might want to adjust the Preamp Gain and/or other functions. Personally, I feel you would find more if you just turned the XLT 'ON' and searched in a factory Program and recovered targets during the time that you'd be guessing just how much more you might need, or be able to add.

When I turn the XLT on, and depending upon the coil in use, my knowledge of the site and/or my "best guess", I pick the program I want. Let's say it is my 9.5 Open Range. If it works stable and quiet, then I'm satisfied because I know it is set up for enhanced performance over any factory program. But, if it is NOT stable, and that's often the case in town, that's okay because I can 'hear something' and that usually is enough to let me determine what function(s) I should adjust, and maybe about how much adjustment, in order to get maximum performance at the site and still be stable. Doing so without a lot of horsing around!

For example, I worked five potentially good sites in Portland, Oregon, and rural suburbs there. Two of them are large parks on hills; one of which is an extinct volcano with a lot of exposed rock and very mineralized. Due to the size of the open area I selected my 9.5 Open Range program using

the 950 coil. At the first site it was just a little noisy and I quickly turned down the Preamp Gain to 10, rebalanced, and was just into stable operation at the 'fringe', but on the stable side.

At the second park I used the same coil and program, had some 'noise' upon beginning the search and decided to reduce the AC Sensitivity about 5 numbers. I was off to find stuff and running comfortably, yet with a powerful program.

When I reached the third site I encountered a tree-studded hillside with a lot of underbrush. Here I was looking for old trails and picnic or blanket sites. I opted for the 5.3 Black Max coil and my 5.3 Bushwhack program. Stable. Great! I spent nearly two hours with minimal trash targets and had no problem. That is, not until I got nearer to the power houses for the reservoirs on the west side of the hill. Two quick attempts to regain stability didn't really get the job done, so I went to my 'default' Relic Plus program and worked the area for a couple more hours.

The fourth location was a city park in a small town about 35-45 miles away. A sleepy little town with a well-hunted park. Due to the large openness of it and my detecting time limited to about four hours, I chose the standard 950 coil for coverage. In the 'front-half' of this park you'll find much more trash, as well as metal playground equipment, etc. I used my default Relic Plus program here and turned "Off" Mixed mode. In the back half you can cover a lot of territory without a signal. I loaded my 9.5 Bushwhack program and left Mixed Mode 'On'.

The fifth journey took me to an old recreation site. Not only were there some brushy areas, there was also some scattering of nails visible. I also suspected there would be quite a few old rusty bottle caps from the days when they had cork sealers. I was right. I quickly switched to my 5.3 Black Max coil and went with my 5.3 Bushwhack Program. I turned Mixed Mode 'Off' in the worst areas, and I also cut my AC Sens. to 70, and Preamp Gain to 8. This was quick and easy to do and gave adequate operation until I moved away from the more heavily used section and into the thickets. There I simply called up my 5.3 Bushwhack program again and re-loaded it. The unit was stable and I continued on.

"Hot Keys" and Quick Adjustments

In order to really get a lot more hunting time in and less fiddling around, learn about the "Hot Keys" as explained in your Owner's Manual and printed on the bottom of the control housing. Keep them in mind when setting up your own custom program. For example, I don't feel it is important to add the 'Backlight" feature to a custom program as it can be quickly accessed via the "Hot Keys." I have my favorite "Hot Key" combinations, which are:

Air/Ground Balance, Ground Balance only, Backlight and Battery Check.

Using "Arrow Return" as noted in your manual is a very important and useful feature. If want to adjust a proper level, pressing at Arrow Up or Arrow Down quickly returns you to the last function you adjusted. Better still, the "Arrow Return" will access the last adjustment made to a custom program. Therefore, an important step in setting up your own programs is to determine which function you would most likely want to change in the field, then make that the last function you access prior to 'Saving' your program. For example, I will refer you to my custom programs. Notice that I like to use Mixed Mode audio, if conditions allow, and have it turned 'ON' with each program. If there is too much iron junk, or just too many targets of any kind, in an area, that's the first option I would care to change and turn it 'OFF.' Therefore I have entered Mixed Mode 'ON' as

my last function adjustment prior to saving any program. When I load up a program at a particular site I just listen during a few sweeps. If it is too distracting due to an abundance of junk, I just press an Arrow key, calling up Mixed Mode, and hit Enter to turn it 'Off.' As a rule, if I am operating with Mixed Mode AND stable, then I have no concerns. My first interest is in the amount of target responses at a given site. Very few targets, I leave Mixed Mode 'On' and if too noisy, I turn it 'Off.' Now, if I opt for Mixed Mode 'Off' and it still lack stability, I would most likely want to adjust the AC Sensitivity or the Preamp Gain. If I want to adjust my AC Sensitivity, I simply press an Arrow key, calling up Mixed Mode, and then Arrow Down one step to AC Sensitivity. A quick access to that function without going through the entire Menu program and scrolling steps. As a rule I will run my AC Sensitivity as high as I can and remain stable, then up the Preamp Gain. That means that as a rule I would lower the Preamp first, if conditions were unstable. But, as we all know, rules were made to be broken and there will be times when I will opt to adjust the AC Sensitivity instead. If so, it's quick to do as I indicated. But what about Preamp? Why, that's even simpler! If you start up a program and want to increase or decrease the Preamp Gain, you just press Menu and then Arrow Up which takes you to the last function in the Pro Options, and that's Preamp Gain. There really are not a lot of adjustments you would want to make in the field. It stands to reason that you are into the hobby to detect and not just fiddle around. By thinking through any custom program YOU decide upon, and then entering last one of the features you feel you want to access the most, along with mastering the 'Hot Keys', you'll enjoy more detecting time and be more in command of the XLT.

Search Coils and those '' Heavily-Littered Sites**

A final few comments about search coils and detector selection are in order. It is my belief that the thin-profile, open-center Blue Max 950 search coil is an excellent 'general-purpose' search coil and can perform well with the XLT. I especially use it when the trash levels are very low and there are very open and large areas to search. I also prefer it for those occasions when I desire the best depth of detection. I like to have 'optional coils' as well, but only if there is enough practicality, for my applications, and therefore I don't have an 8" coil in my arsenal. I DO, however, have the 5.3 Black Max and it gets a lot of use! The 5.3 Black Max is identical to the Blue Max 600, except for the color of the plastic and the decal. Also, most BM 600's had the longer cable while the 5.3 Black Max has the shorter one. I like the 6" coil because it 'fits' into many areas I hunt better than the larger 8" or 9-1/2" coils. That is why I have a program labeled 5.3 Bushwhack. I use it almost exclusively in the brushy sites I enjoy searching. For one thing it is much more maneuverable, and as an added bonus, by using a smaller search coil (especially with a warmed-up program) you are able to effectively sweep at a slower motion speed. This is naturally helpful when working around brush and building rubble. It is also a much better coil for use in more trashy sites. As you'll note I added some '**' indications in some of my writing, associated with working 'trashy' sites or ghost towns. When you get into a situation where the trash levels are particularly bad, either due to a lot of iron trash, such as nails, or just an abundance of closely-spaced modern-day junk, you could go to an even smaller search coil. Don't be fooled into thinking that one multi-featured detector such as the XLT can 'do it all' and do it all well. It can't. Naturally you could use a 4" coil on the XLT, but it is my personal belief that if conditions get that bad, you are better off going with a different detector. In the trashiest areas I recommend a slow-motion, two- filter type detector. Most are silent-search in the motion discriminate mode and that can help concentration in very trashy sites. My personal favorite is the White's Classic IDX, although the Classic ID and Classic II SL are equally appreciated. You have to be strong-willed in really bad trash areas with any target ID model, including the Classic ID & IDX, because target masking will quite often to most often give you an

incorrect TID reading. It is most important to rely on a good audio response and any of the three models suggested will perform about equally. I use the 9-1/2" and 6" coils mostly with the XLT, and the 9-1/2" on my Classic IDX especially at the beach or in dark (black or gray) sand-filled volleyball courts. If the trash level gets severe enough to hamper good performance with my XLT then not only do I switch to a slow-motion detector, I use the 4" 'Snooper' coil (White's Blue Max 350) which is mounted on my IDX as a regular-use coil. Don't let the small size fool you, either. It performs quite well, especially in the trashiest sites, and the excellent low-end discrimination range of the Classic models give them an excellent performance advantage over most of their competitive slow-motion models. So, with the XLT and my three personal-preference custom programs, a Classic IDX to compliment it when conditions get challenging, and the 4", 6" and 9-1/2" coils, I feel I have a well-rounded battery that will serve me well in almost any of the day-to-day sites I am likely to encounter. I trust that you will have the patience necessary to overcome any detector's weaknesses and master it's abilities, and that you will come to appreciate the White's XLT as much as I have. For those who are Internet active I welcome any communication about programs, coils, tips & techniques. Feel welcome to E-mail me at: MonteVon@aol.com

17. COINIST'S XLT TIPS

The easiest way to get more depth with the XLT is increase the **Preamp Gain** as high as you can while maintaining stability

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The most important XLT options that help gain **depth** are: Preamp Gain, AC Sens, VDI Sens, and if you are in Mixed Mode DC Sens. Also by accepting -35 to +95 (Using Low Discrimination) will help gain about an inch in depth.

Programming the XLT to be similar to an Explorer ....

- Start with the Preset Relic Pgm.
- Turn on Tone ID.
- Set Recovery Speed to 10 or less (similar to the Deep Setting on the Explorer).
- Either lower the AC Sens so you can bump up the Preamp Gain as in Terry's Preamp 15 Pgm or leave the AC Sens set on 64 and bump up the Preamp Gain as high as you can while maintaining stability.

That setup should give you good depth and an idea what the Explorer is like in Iron Mask.

No matter what PGM you use **Mixed Mode** with the following holds true. Targets that fall within your accepted VDI# range will have the higher tones and targets that fall within your rejected VDI# range have the lower tones. Mixed Mode will increase depth because it adds an All Metal Mode. Which accounts for the fact that every target the XLT picks up will respond with either a high tone or a low tone. If you like Mixed Mode use it as that is the only way to learn it. At first I would just go after the high tones. After you get used to using it you may want to investigate some of the rejected low tones as they could be deep targets (Coins) that the XLT can't ID correctly.

The easiest way to get into an **All Metal Mode** with the XLT is to push the trigger forward. But **the best way to get into a "Good" All Metal Mode** with any Pgm is to Turn Audio & Visual Disc OFF.

How to go Deeper - Here is a couple suggestions that may Help First if you try Mixed Mode at a site with a lot of potential dig the low tones and the high tones since it has been stated that with the DC Sens set on 40 Mixed Mode may add as much as 50% in depth. With this increase in depth there is a very good chance that the XLT will not identify the deep targets correctly and may ID them as iron for example. Also make sure you accept +95 if there aren't many hot rocks around as the XLT will ID targets as +95 if it doesn't know how else to ID them and it will help add depth. If you get a weak signal some short fast swings may help you locate it or if you get a target that gives off a weak pinpoint signal dig down a few inches and then your XLT should be able to ID & Pinpoint the target better. If the targets aren't close together at the site you are hunting lower your Recovery Speed as this will help increase depth. You could also try hunting in All Metal Mode which you can do by taking your favorite program and turning (Visual & Audio Disc) OFF. Also go slow and I am sure you will find some nice coins. I have recovered dimes at depths of 6 1/2 inches that gave off a strong signal with my Custom Relic Pgm.

Accepting and rejecting VDI #'s if you want to change a lot of VDI#'s use Bloc Edit. If you want to just change a few then use Disc Edit. Basically when changing a lot of numbers go into Block Edit

and push enter that puts the box around the VDI# now if that number is showing rejected and you want that number accepted hit enter again that will change it from rejected to accepted or vice versa. Now when you scroll thru the numbers they will be accepted or rejected by where you have the arrow pointing to. When you use Disc Edit push enter that puts the box around the VDI#. For "Every" number you want to change you have to push enter and scrolling in Disc Edit doesn't change anything. In computer terms think of Disc Edit as browsing and Bloc Edit as Editing or Changing when scrolling. So if you want to see how you have your numbers set up or just to change a couple use Disc Edit. When you want to change a big range of numbers use Block Edit and then arrow up or down to change them. When you are done selecting your numbers hit menu as that puts the box around the option and then you can move on in the menu process as your selecting is done. The Disc & Block Edit options are the most confusing options for most people new to the XLT.

In consistent ground conditions you want to use a faster **Trac Speed**. In changing ground conditions a slower speed is best. By turning **Trac View** ON with an ideal Trac Speed setting you would see Trac every 3 to 5 swings.

Using a positive (+) **Trac Offset** will help with depth in mineralized ground and make the XLT more sensitive to smaller targets.

A shorter faster swing will help pick up weak sounding targets and also help identify trash by causing the audio signal to break up.

If there aren't many hot rocks around **accept +95** as that will help depth and give you a chance at targets the XLT cannot ID correctly.

A Quick Frequency Tip for XLT Competition Hunters The XLT has 7 different frequencies you can choose from with 4 being the best performance wise. Go into Pro Options and change it to a different frequency other than 4 if you are picking up interference. Here is something that you may find useful. Before a hunt go to Transmit Frequency you can leave it on 4 but the point is if you start hunting and you run into interference you can just hit the arrow and that will take you to Transmit Frequency and you can quickly change it. The arrow always takes you to the last option selected provided you haven't removed the battery.

If a site is very trashy you would probably be better off with a smaller coil (So the XLT "see's" less ground and can separate and ID the targets better). Other things to try when in trashy areas are: Keep your sensitivities lower (Around the Preset Level), take shorter & slower swings, lift up the coil some as that will cut down on the signal, and if you are in a really trashy site I would consider raising your Recovery Speed (maybe as high as 27). This will force the XLT to process targets quicker.

Raising the **Recovery Speed** on the XLT will help by increasing the rate at which the XLT processes targets. This decreases the time it takes the XLT to reset itself from one target to another. Increasing Recovery Speed helps in trashy conditions and/or where the targets are close together. On the other hand slow Recovery Speeds are to be preferred when it comes to targets that are deeper and farther apart.

Along with how the coin is laying, depth, nearby metals, mineralization, moisture, etc also **how a target reads is determined by the size and what it is made out of**. Since the 3 Cent Pieces aren't very big you could guess that the one made out of nickel will read lower than a nickel and the one made out of silver would read less than a dime because of its size. This site has a list of XLT VDI#'s for old coins. http://www.coinsnh.com/xlttips.htm These VDI#'s listed are just average readings but it gives you an idea of how the various coins read on the XLT.

Nickels A few things that I use when looking for targets in the nickel range are: I look for a single tall straight bar with the VDI#'s from +19 to +24 (Silver War Nickels will read higher). Most of the time when I get a tall straight bar and a consistent VDI# range from +19 to +24 (without the numbers jumping all over) this will be a nickel. Although I have dug some nickels that jumped all over the place. This method is not fool proof but it helps when wanting to find more nickels and not dig a lot of junk. Another setting I use is a +1 Trac Offset as this makes the XLT more sensitive to small targets. I also set my Bottle Cap Reject on 1 as this makes the Nickels sound better.

A few XLT Settings to enhance Gold Signals: use a + Trac Offset as this makes the XLT more sensitive to nickels, gold, & small targets. Set Bottle Cap Reject on 1 as this makes the Nickels & Jewelry sound better. Taking for granted that the only thing for sure that can tell trash from treasure is a shovel. When I am hunting rings nickels & gold (the lower conductive targets) I look for a tall straight bar on the graph. While this is not fool proof by any means it does help cut down the odds in my favor as some of the junk targets that fall in the Nickel & Gold Range that make our task harder are: the metal eraser end of a pencil, some tabs including bent tabs or parts of tabs, wadded up foil and various aluminum junk. Set Tone Frequency at 200 to enhance the sound of gold and nickels.

Rings on the XLT look for the most part like coins. A small silver ring will read as a zinc, a medium size one will read as a penny or dime, and a large silver ring will usually read like a quarter. As a rule rings show up with a good display as they are not usually smear patterns. While a lot of the gold rings will read like nickels. Gold rings usually are in the Foil to Tab range (depending on their size and make up) so they are tough to find in the ground because their range is in the middle of a bunch of junk. One of the worst looking and sounding targets I dug was a 10Kt gold & silver diamond ring and it showed up on the display as a smear. As far as certain VDI#'s to look for when hunting rings and jewelry it is hard to say because their numbers vary so much according to content and size among other things. But if I had to name two ring ranges I would say +0 to the +20's for gold and platinum rings and +60's to +80's for silver rings. Keep digging and you will find a nice ring.

DC Phase Turn DC Phase ON then put your coil on the ground away from any metal. Pull the Trigger and look in the upper right of your display. That should show the ground reading. While it has been debated how accurate this reading is. It is still an interesting piece of data the closer to -50 the better.

If you were not over any metal when checked your **DC Phase** and your reading of -93 is correct it indicates that you have very mineralized ground as the closer to -50 the better. **Mineralized Ground** is just what the name suggests ground with minerals in it. The mineral that gives us TH'ers problems is iron. More iron in the ground means less depth and the harder your detector has to work to establish and maintain the baseline it sets up when you ground balance. A good baseline is critical as your detector must see a difference between the target and the ground for the target

to be detected. My ground reads around -90 or worse and so far in my ground conditions the XLT has done as well or better than any detector I have used as far as finding the older deeper coins.

If the XLT is unstable the following may occur: The Threshold is broken and unsteady. Falsing where the XLT will be giving off audio & visual signals when there are no targets. You may not be able to balance the XLT correctly. Also if Overload appears a lot on your display it may be unstable. If these occur just lower the settings a tad and try it again. I have run my XLT hot in the past where it was a little chattery but still stable and it worked fine.

Some of the causes for **Phantom Signals** are: A target will not be ID'd correctly at first giving off a signal and then after the XLT ID's it correctly the signal will disappear. This happens a lot with iron. Some targets will only give off a signal when sweep from one direction. If you change the direction of your sweep the signal will disappear. If you are around electrical interference or a lot of metal which happens a lot if you turn the XLT on in your house this will cause falsing or instability. If you are by power lines or another detector this can cause problems with the audio. If you have the sensitivities and or Preamp Gain up too high that will cause Phantom Signals or instability. When you set up Custom Pgms by others remember to only use them as a model as they need to be fine tuned for your environmental conditions. Sensitivities, Preamp Gain, & Tracking most likely are the settings that will need to be fine tuned for the areas you are going to hunt in.

XLT & Big Signals Just wanted to say that not all big sounding targets are Junk with the XLT or for that matter any other detector. With the XLT in the past I got an overload signal from a shallow Ike Dollar and on a different occasion from a shallow SBA Dollar. Also the change purse I found with 10 Silvers in it sounded like a pop can and last night at the same site there were 5 clad quarters in a small area that I almost didn't dig because I thought it was a can or a pipe because of the signal size. Also the higher your sensitivity settings the bigger the signal will be which may fool you on some targets.

I use **a setup in trashy modern places when I am just going for coins** where I accept +10 to +27 & +68 or +70 to +94 or +95. If the site is real trashy and I want to get rid of the foil, bottle caps, & zincs I will just accept +68 to +95. Other times I will accept +50 to +95 when I am in a junky old site and there may be Indian Heads around. I also have a Relic Pgm that Accepts -50 to +95 when I want to get extra depth and make sure I pick up most targets. Most of the XLT users consider the Programmable Disc as one of the XLT's best Features as you can set it up specifically for the site or targets you are hunting.

A good way to make your own XLT Custom Pgm is first take a preset pgm that is close to the custom pgm you want to create and save it with your new name. Then set the options the way you like without worrying about "jacking up" the Sensitivities and Preamp Gain. Once you have the options (Volume, VCO, Discrimination, etc.) the way you like save your pgm and then take your XLT to a place where you think your custom pgm would work well. Once at the site then set up the (VDI Sens, AC Sens, Preamp Gain, AutoTrac Speed, etc.) and save it. Now you have a custom pgm that is set up for your conditions. Much better than taking someone else's pgm that they have setup for their conditions and just copying it. You might get lucky and it would work well for you but it is usually a better idea to use someone else's custom pgm as a model and then follow the steps given above.

To specifically address what settings may need to be changed for your areas hunting conditions:

Sat Speed - You want a stable steady background hum **(Threshold)**

Ground Tracking Options: - AutoTrac Speed & Trac Offset

Sensitivity Settings: - VDI Sens, AC Sens, DC Sens, & Preamp Gain

The above are the settings that most likely will be the ones that may need to be "Tweaked" for your areas conditions. **If you are in doubt about any setting try the preset program settings** as they are set up to work in most areas.   As far as settings like volume, etc., use the settings you like.

Hi since there have been a few posts lately concerning how to find rings, **why not take the XLT Gold or Prospecting Pgm and use that as a model to make our own Coin & Ring Pgm?** Start with the Preset Prospecting Pgm and make the following changes:

Basic Adjustment Changes:

1:Change Tone (Audio Freq.) to 200 as this will enhance the sound of gold targets.
2:Turn Audio Disc ON or every metal target will sound.
3: Change DC Sens from 45 to (30 - 33). This will help pinpointing targets that are not so deep.

Pro Option Changes:

1: Change SAT Speed from 9 to (4-6). For coins and rings a slower SAT should be used than when prospecting. Since we are not going to use this program for prospecting and we will be hunting in less mineralized conditions a slower SAT Speed will be better.

2: Turn VCO ON as that will aid in pinpointing (This is not critical to the performance of the program but the pinpointing setup I prefer). Use whatever Pinpointing method you prefer.

3: Change Preamp Gain from 2 to 3 that will give you a little more Depth on coins but since we are going to be hunting and digging more lower VDI#'s in search of Gold and Platinum Rings it is a good idea not to "Jack Up" the Settings Too High since we want better target separation, stability, and a good clean audio. Also we may be hunting areas that have a lot of junk so we won't get good depth anyway.

After making the above changes name and save your pgm as explained on page 10 of the manual. I think this set up will give you a very nice Coin & Ring Pgm that you can further set up to your liking. One final note about the custom program you created is that Trac Inhibit is OFF which means it will Trac while you are pinpointing with this option OFF it will be helpful to ground balance from time to time. Since we won't probably be hunting highly mineralized ground this setting could be changed to ON if you prefer. But some XLT experts recommend Trac Inhibit be OFF when hunting for Gold.

Your XLT is Setup with your Favorite Pgm & now you want to find a Hunting Site. Any site that is old where there has been some people activity is a good place to hunt. Old schools, parks, churches, houses, and athletic fields make good sites to hunt. Also if you have a library or a historical group in your area you might want to do a little research and see what sites people held their activities in. If that doesn't lead to any promising sites I would get a good map of the closest or biggest city near you and find out some of its older sites (usually the parks and schools closest to the downtown area are among the oldest) and plan to hit a few when you can get to them. Even if the sites you go to have been hunted a lot if you take your time the XLT will find some nice stuff for you as no one gets it all. I am hunting sites for the most part that have been hit hard but they still give up some nice finds. If you can't find many older sites because of distance or safety factors just hit some modern parks, schools, & athletic fields they will have some nice stuff in them. Also since you have access to a computer you can do searches for cities, parks, schools, civil war sites, etc and get a lot of info. I hunt mostly public places such as schools, parks, and athletic fields. I will go to old places that have had a lot of people activity over the years no matter how many times they have been hunted and just take my time. I may hunt them a few times and not get much but sooner or later I will make a nice old find. I spend a lot of time thinking about finding new sites to hunt (for clad or older coins) as well as areas of sites I have already hunted that may have been overlooked. I know some of my sites real well and I will analyze the site until I have a plan where I will concentrate on just a certain part of the site. Sometimes this pays off with some nice finds and other times I will have to give the plan up and come up with a new approach if I want a certain site to pay off. Using this strategy and putting in a few hours has helped me make some nice finds.

18. FIELD TESTS

DFX E-Series FIELD TEST REPORT By Andre Bulter

I finally received my DFX, the new White's Spectrum DFX from my local dealer Detection Systems Holland. As an XLT fanatic (being hooked on the White's XLT) I was very excited about how it would perform and compare to the XLT.

Opening the box I found that the DFX was well packed, to ensure no harm or damage during transportation. The DFX looks like an XLT only the labels indicate that we have the "newest and most advanced" detector from the Whites Clan!.

The DFX comes in 4 separate parts: The Armrest with the meter and control box, the upper and lower rods, the 25cm Multi Harmonic Widescan coil. Other parts included are dry cell battery pack (no batteries), rechargeable battery, charger, loop cover, arm rest foam, velcro cable ties.

The DFX is easy to put together and feels very solid and light which is no more than we are used to from White's. The charger instructions advise the user to give a first time charge of 22 hours on the rechargeable battery, however being an impatient human being I put in 8 alkaline batteries and off I went.

Turning the machine on, I notice the brightness of the screen. The XLT screen was good but the DFX is even better and clearer to read. The information the screen gives me during my search, as an old XLT user, a lot of confidence. The DFX software has more items than the DFX, I will go into this in more detail, later in the report. The information "flies" over the screen so its obviously a higher clockspeed than the XLT. Loading and/or changing of the programmes also happen a lot quicker. The DFX has 5 factory preset programmes and four custom Eeprom programmes. The latter 4 can be altered to the searchers own ideas.

I am fortunate enough to have a good test/search area close to my house. Fields that are mineralised due to it being an old 15th Century dumping place for rubbish from Amsterdam.

Initially I tried out one of the Eeprom programmes and I conclude that these are, in my opinion not suited to use on European soil so I reprogrammed the detector with the programmes given by my dealer and tried it out again.

Stopping briefly to rest during my first outing with the DFX - I asked myself if the machine works well and to assure myself I sweep my shovel over the coil. A loud and clear beep tells me all is well.

During searching clear signals are coming in and after some digging, I detect a small silver dime. A couple of metres further on again a clear signal and on a depth of 20" (50cms) I find a piece of aluminium of 8 x 8 cms. Slowly it occurs to me that after searching for some time there were no Œfalse[1] signals to be heard at all. Something I found very interesting was that occasionally I heard an audio signal and when I looked at the screen two diagrams were visible, one in the iron part and one in the non iron part. After digging I found a small piece of iron lying beside a piece of lead. The display really gives you excellent information - tone mask on iron but still detecting the piece of lead and both to be seen on screen! The DFX was very stable and quiet. No Œbad[1] sound was

heard. The discrimination of Iron and minerals is more than excellent. I did alter the AC up to 80 (was at 75) with the result, still stable and quiet.

Having searched in two frequencies BEST DATA which means that the DFX sends two frequencies inside the soil - 3kHz and 15kHz. The processor then shows the best data on the screen with an audio sound in the headphone. I then tried to use only the 3 kHz frequency but on this type of soil (heavily mineralised) the DFX was unstable and began to sound like a "normal" detector. A lower frequency gives more depth with the detector being very sensitive on metals such as copper and silver but it has a tendency to be less stable whereas a higher frequency is better for metal like gold, is more stable less false signals but you do tend to lose a bit of depth. I would recommend therefore with 3 kHz lower the AC sensitivity but on 15 kHz sensitivity can be increased.

The programmes given to me by my dealer are four good Œturn on and go¹ ones which makes things easier for beginners but professional users will have endless fun with all the permutations available, and able to be used in a very personalised way.

The DFX has 44 different adjustment possibilities, with interaction between them so really the variety of adjustments is almost unlimited.

New options as compared to the XLT are "Hot rock reject" (complete rejection or acceptance of minerals) 2 Frequency best data, 2 frequency correlate the detector comparing data from the two frequencies and if the information is not reasonably predictable will be automatically rejected VDI normalised, basically same reference numbers as the XLT. The DFX original filtration giving you the possibility of using six filters (normally on detectors only two are available) with greater depth ability on mineralised soil. Having now appreciated this function I don't think I could detect without it any more.

Many times I detect on archaeological sites and was very keen to try the DFX on one particular site that I know had been searched several times with various makes of detectors and which I was assured there could be nothing else to find. Accepting the challenge and adjusting discrimination nearly to its lowest limit I ventured forth and very quickly had a good signal which turned out be a very small pieces of copper at about 18cms a few steps further and an iron nail at 38cms. I was truly amazed at this depth capability and will be recommending to our local Archaeologists that the DFX could be very useful in their searches.

I then moved to a very heavy mineralised site, in fact a place used frequently by horses with all that entails! Loaded my bad ground programme but because of mineralisation could not get the detector to stabilise, the remember about ground filtration, adjusted from 4 to 6 a key and hey presto - a quiet and stable detector. Immediately the finds started to appear, buckles and other horse brasses, keys, old coins etc. etc.

In conclusion I think White¹s have another winner on their hands a light weight, stable, deepseeking detector with the different frequencies and filtration process a great asset. Certainly a good buy for both the beginner and the experienced but I do stress that the user read and re read and re read again the more advanced parts of the manual and don¹t expect to become an expert overnight. Many long time users of the XLT say that after years of use they are still learning what can be achieved with all the options available and I don¹t expect the DFX to be any different.

FIELD TEST REPORT White's DFX - Part 1
By Chris Rogers
Controls and Settings, Clarification of Terminology

Without doubt the biggest problem facing everyone involved in metal detecting is the choice of the best detector for their needs. It is the one topic that seems to lead to more discussion and disagreement in the hobby than any other.

Let's take just one point in isolation from the many that arise in those discussions and, ignoring the cost factor, ask the question "What is better, a simple 'turn on and go' detector or an 'all dancing and singing' state of the art computerised machine?" Put another way, does the operator benefit from the so-called gadgets on a programmable machine?

There is, of course, no definitive answer to this except to say that, in the case of the latter, the majority of user programmable detectors do have the facility to simply switch on and go. This is achieved by using the factory pre-set programmes, which avoid the need to progress further into the finer details of the detector's operating capability. In my experience very few individuals, once bitten by the detecting bug, drop out and most are soon looking to upgrade their machine to help their efforts in the field. The more that is learnt about the other factors that come into play after gaining some search experience, such as different soil conditions and the varying conductivity of metals, the need for greater flexibility soon becomes apparent. The ability to adjust your machine to these changes can make the programmable detector appear the more desirable option. Whether the individual chooses to progress to these options could depend on his or her available finances.

Some years back White's introduced a new detector onto the market called the XLT. It was a well-balanced, lightweight machine, with easy to use pre-set programmes. It also had seemingly limitless operator adjustments for the experienced detectorist, coupled with a rugged design and super performance. It is not surprising, therefore, that the XLT came to be one of the most popular and best selling detectors available. During its existence a couple of modifications were introduced, but it remained basically the same machine until last year when the new dual frequency XLT was introduced onto the market, known as the DFX XLT.

Having used the XLT for hundreds of hours with great success, I found that a lot of the criticism expressed by the "turn on and go" fraternity was brought about by their failure to read and understand the operator's handbook, which - to be honest - can appear a bit daunting at first glance. This, when coupled with the retailer who either through lack of knowledge of the machine and/or time, fails to go through the different functions shown on the display screen with the prospective buyer, leads to a lot of the misconception about the XLT and programmable detectors in general.

With this in mind I have split my report into two halves. The first part concentrates on the controls and settings while attempting to clarify some of the terminology used. The second part will be the actual field test in which I conducted a number of searches using my own and other recommended settings in a number of different field conditions. My report pre-supposes that the beginner has carried out some research into the basics of detecting and is aware of such terms as "motion" and "non-motion", "ground minerals", "discrimination" and "sensitivity".

I have not included a beach test of the DFX but hope to be able to report back on this aspect of the DFX later in the year.

Physical Description

Immediately on opening the sturdy carrying box the DFX XLT is pleasing to the eye being well constructed and finished. Assembly is straightforward and takes just minutes to complete. As already stated, the owner's guide can appear complicated especially if you do not take the time and trouble to study it properly. I cannot stress the importance of reading this booklet thoroughly so that you are fully aware of what is available to you and how to go about achieving the best from your detector.

The detector's looks have not changed much from the earlier XLT, but the 9.5in coil is now of the Wide Band Multiple Harmonic type. The LCD meter panel is mounted at the end of a padded handle and under the meter is a toggle switch, operated by the index finger. This can be used for pinpointing and depth screen display. The metal control box, which is fitted below the armrest, has a hinged compartment in which the drop-in battery pack is housed. The detector's power is supplied from either the re-chargeable type nicad battery (green decal) pack or eight AA dry-cell batteries fitted into the (blue decal) standard battery box. The quarter inch headphone jackplug socket is also fitted in the rear of the control box.

One of the more obvious changes is the logo on the side of the box, which now reads "White's DFX Spectrum E-Series". Also printed on the control box is the start-up procedure and a target identification display scale. On the underside is a "Hot Key" shortcut chart that enables easy access from the search mode to the most needed adjustments. Among the less obvious changes are: dual frequency operation, four new user-designed programmes, adjustable sweep speed, and a digital signal filtration system.

Set Up

The pre-set programmes in the DFX allow the user to push a couple of pads to begin searching while the detector automatically controls the adjustments for you. Beginners will find this facility the best option until they become familiar with the many adjustments that the more accomplished detectorist will want to access.

Looking at the display panel you will see five push button control pads. Reading from left to right they are marked: Menu, Arrow (down), Enter, Arrow (up), On/Off. The detector is turned on by pressing the On/Off pad, at which point an automatic battery test is carried out. The screen will momentarily show the battery voltage followed by the main menu. To recheck the voltage, squeeze and hold the trigger while pressing the down arrow. When the battery strength becomes too low for proper function of the detector, the words "Low Bat" will automatically appear on the display.

The main menu offers a number of choices commencing with "Preset Programmes". To access this setting simply press Enter after which a choice of five preset programmes appear on screen with an arrow pointing to the first "Coins". By pressing Enter (a bleep signal will be heard each time it is pressed) and following the instructions on the screen to raise the search coil to waist level, press

Enter again then lower coil to ground level. The detector will now be correctly ground balanced and ready for operation in the Coins programme. While the coil is held at waist level the DFX's circuitry is measuring air temperature and other variables that effect electronic circuits. When lowered to ground level and the Enter pad is pressed again, the DFX is cancelling out the ground mineralisation effect (or 'Ground Balancing' the detector). In this and the other four preset programmes no further adjustments are needed. Nevertheless, any number of control adjustments are available to meet almost any need or style of detecting.

The last screen to appear will be the search screen, at which point you will also hear the threshold hum. After sweeping the coil across the ground listen for a repeatable solid signal and look at the display. The icon will show what is likely to be below the search head and the VDI (Visual Display Identification) number can be checked against the chart on the control box. The SignaGraph section of the screen provides even greater information. Because this is a motion type detector the search coil must be kept moving to respond to a target. (See Mixed Mode).

Other Menu Options

We have already covered the first option on the VDU, Preset Programmes. The other options are: Basic Adjustments, Pro Options, and Custom or EEPROM programmes. Within these headings there are a number of settings, such as RACHET PINPOINT, COARSE GEB, PREAMP GAIN and many others that may not be familiar to users of different makes of detectors. With more than a little help from the manual, I will try to explain in detail what these terms mean.

EEPROM stands for Electrical Erasable Programmable Read-Only Memory, which is a memory chip that allows the storage of up to four custom programs despite battery changes and years of storage. These four "memory slots", along with the five Preset Programs, add up to a total of nine programs that should fit just about everyone's needs. The four EEPROM programmes can be erased and replaced with your own custom programmes. Setting them is a simple operation and I will cover this in the field test part of this report.

The first five Preset Programs are in permanent memory, with a similar looking name of EPROM (notice that one E is missing for Erasable). Changes made in these programs will return to factory settings when you change from one program to another or change batteries. However, if you have made changes and forget to save them in a custom program before turning off the machine, all is not lost. With a good battery still intact, squeeze and release the trigger immediately upon turning the detector back on, and the circuitry will revert to the last settings used. Otherwise, settings will revert to factory preset.

Preset Programs

The following is an explanation of each Preset Program.

Coins - All controls are set to handle rubbish contaminated areas such as parks, responding to most coins and larger jewellery. Discrimination is high in order to eliminate signals from items like nails, foil, ring-pulls, and "hot rocks". If possible, though, try to start with a program of low discrimination, as good items can be missed along with the bad. This is true for all metal detectors due to various reasons such as the conductive properties of different metals. This program will save you a lot of digging in badly contaminated areas.

Coins and Jewellery - This is similar to the Coins program but with less discrimination. This means you will receive a few more dubious signals but it is recommended when searching areas where there is less rubbish.

Jewellery and Beach - Much like the above, but with settings enhanced to keep the false signals of salt water from spoiling your searching. Use this one on the beach where gold jewellery can appear anywhere on the display from iron through to the silver range due to the amount of debasing that has been used, as well as the length of time the object has been buried, size, etc.

Relic - Here the discrimination is really low to permit the acceptance of all metals except small iron targets such as nails and some stainless steel. It separates ferrous/non-ferrous by display indications. However, large pieces of iron such as nails, horseshoes, broken ploughshares and other fragments will give a positive signal.

Prospecting - This is a good program if you are looking for gold. All metals will give an audio signal, but the only ones to give a VDI (number reading) are likely to be gold. I personally wouldn't use this programme much in this country.

Basic Adjustments

Target Volume - Adjusts for the loudness of the target signal. Some people believe that setting this very high will bring greater depth, but this isn't necessarily true. Always use a setting that doesn't cause any discomfort.

Audio Threshold - This is the continuous background hum. Set it to a just audible level that is right for your hearing. Again, lots of old hands will tell you to have a high threshold setting for deeper targets - don't believe them.

Tone (Audio Frequency) - Quite simply this means pitch of signal. Set it at a pitch that matches your hearing. I found the higher range best for my hearing.

Audio Discrimination - Use the OFF position to detect all types of metals. ON rejects rubbish with different sounds for different types of targets. Trash goes silent or gives a clipped sound, while better targets produce a solid sound.
Silent Search - I prefer to have a very low threshold level but for those people who prefer no background noise this facility will suit them. Others, of course, like to hear the background hum, to listen for subtle changes in audio such as the threshold fading over rejected targets, and changes in ground conditions. As you might expect, AUDIO DISC is ON, and MIXED MODE is OFF, during SILENT SEARCH.

Mixed Mode - This means two modes of operation at once with the ALL-METAL NON MOTION and the MOTION DISCRIMINATE mode both working together - one accepting everything and the other discriminating rejected targets. For the advanced user adding TONE ID and/or VCO will lead to better results. SILENT SEARCH needs to be OFF and AUDIO DISC ON. Discrimination settings will give a high or low pitch signal while the All Metal mode will give all targets a low-pitched signal. Together with Motion Discriminate and All Metal Non-Motion, Mixed Mode provides a third type of operation. Discriminate requires coil motion, All Metal does not.

A.C. Sensitivity - Sets sensitivity for the motion discriminate mode. Along with DC SENSITIVITY and PREAMP GAIN, this control determines how deep the detector will search. It should be set as high as possible without causing the detector's circuits to become unstable and give false signals (chatter). Experiment with the ground conditions, adjusting this control and the Preamp Gain to achieve the greatest depth possible.

D.C. Sensitivity - Sets sensitivity for the ALL METAL NON-MOTION mode for stability and pinpointing. Shallow targets pinpoint better with a lower setting. MIXED MODE and VCO AUDIO are also affected by the D.C. Sensitivity setting.

Backlight - The use of the backlight can be quite a drain on the battery, and this control allows you to use as little power as possible. In an improvement over past Spectrum detectors, the DFX stores the setting in the custom programs. The backlight is used for searching in poor light. In an emergency hold the trigger and press MENU to turn it on.

Viewing Angle - This is a control that adjusts the visibility of the display for various temperatures. The higher numbers speed up the display to improve visibility in cooler temperatures, while lower numbers work when detecting in warmer conditions and in strong sunlight. Again, the settings can be saved in the custom programs.

Pro Options

I spent a lot of time messing around with these options and found that it pays to experiment. More details will be given about this in the actual field test.

Ratchet Pinpointing - Pinpointing has always been a very personal operation, although a detector's ability to pinpoint a target varies greatly between makes. How many times have you heard people say that they can't pinpoint well? This control does the detuning process automatically. The previous need to release and then re-squeeze the pinpointing trigger as the centre of the coil approaches the centre of the target is now done by the detector, reducing the virtual size of the target. Think carefully before using this facility as some people prefer to judge the size of the target before detuning.

S.A.T. Speed - This is an abbreviation for Self Adjusting Threshold, otherwise known as auto-tune. It keeps the threshold hum even, which is especially important when hunting in the All Metal mode or when Sensitivity is high. Generally, faster speeds are for more mineralised ground, and slower speeds for less mineralised ground. Without this control the Threshold would drift due to ground changes, and the trigger would have to be continually re-squeezed. In relation to types of hunting, slower speeds are for coin hunting, higher speeds are for beach and relic hunting, and the fastest are for prospecting.

Tone I.D. - Allows each V.D.I. (target ID) number to have its own tone. The higher the V.D.I., the higher the pitch. There are 191 different pitches used in the MOTION DISCRIMINATION mode. TONE I.D. comes into its own when using the MIXED MODE.

V.C.O. - Stands for Voltage Controlled Oscillator, and that means the stronger the target signal, the higher the tone pitch. This feature is used in the non-discriminate modes to aid in pinpointing as well as helping in MIXED MODE. The D.C. SENSITIVITY setting has a direct effect on V.C.O. In pinpointing, when you hear that pitch at its highest, you know you are over the centre of a target.

Modulation - This control determines whether the motion mode gives a strong signal on deep targets, or a soft one. ON gives lower volume deep responses; OFF supplies the same volume regardless of how deep the target lies. When experiencing faint signals, which could mean deep targets and possibly older finds, this control may be of help,

Autotrac - Automatically keeps the ground balance setting adjusted while you hunt. The importance of precise ground balance cannot be over emphasised. The only time you would want to turn this OFF is if you are over a lot of rusting, man-made iron. Be aware that TRAC INHIBIT affects AUTOTRAC.

Trac View - The word TRACK appears on the display when AUTOTRAC adjusts the ground balance. Preset to OFF, it should really be kept ON to be certain that you have the correct TRAC SPEED setting. When TRACK appears often on the display, it could also mean bad ground mineralisation.

Trac Speed - Determines how often AUTOTRAC regulates the ground balance, by setting how much change in mineralisation is needed to cause an adjustment. Slower speeds equal great change; faster speeds equal minor change. Excessive tracking can cause ground balance errors, and too little does not keep up with changing ground. When TRACK is seen appearing every three to five coil sweeps, the TRAC SPEED is correct.

Trac Offset - This feature is intended to be used by experienced searchers to track mineralisation either of the extra negative or positive type. Small metal targets such as gold nuggets in heavy mineralisation would benefit from a slightly positive setting, while a slightly negative setting can help reduce "hot rock" signals.

Trac Inhibit - Use OFF for prospecting and ON for most other detecting situations. It prevents Autotrac from tracking the ground while the target is detected. ON reduces the tracking to corrosion of most metals. Since gold does not corrode, OFF is automatic in the PROSPECTING Program.

Coarse G.E.B. & Fine G.E.B. - This is for manual ground balancing. Those who opt for manual ground balance over the exceptionally good automatic ground balance already know what they are doing. With 255 settings, COARSE is for large adjustments, while FINE is for small ones. There are times when manual ground balance can be useful, but the large majority of users will choose the DFX's automatic ground balance.

Disc. Edit - Permits setting each V.D.I. Number to be accepted or rejected by the discrimination with no apparent loss of depth while using discrimination. Be aware, though, that the more V.D.I. numbers are rejected, the greater the possibility of rejecting good targets. The best advice is to keep discrimination as low as possible, thus accepting the widest range. V.D.I. numbers (Target ID) can be accepted or rejected from -95 to +95. While +95 is often associated with a "hot rock", it is best to dig if it indicates a deep target on the display.

Block Edit - Allows the user to change the accepting or rejecting of larger groups of V.D.I. numbers by dragging ACCEPT or REJECT, using the ARROW controls.

Learn Accept/Reject - This feature is useful when your program is all set and working well, but you keep encountering one specific type of trash. Select LEARN REJECT and sweep the coil over that junk until the signal disappears. On the other hand, if you were hunting for one specific item - say, a lost earring - you could reject everything, and then LEARN ACCEPT that one signal by running the other earring under the coil. Don't forget to turn LEARN off, or the detector will be learning to reject or accept everything the coil passes over.

Recovery Speed - This is the time it takes your detector to recover from the last target before it can respond to the next. Faster speeds work best for trashy areas. Use slower speeds for cleaner areas and better discrimination. The faster speeds are also good for separating closely spaced targets, but you will reach a speed where depth and the sounds of discrimination begin to suffer. A speed just below this seems to work the best.

Bottlecap Reject - Sets how well the detector rejects iron. A higher number causes more broken sounds on iron targets and thus makes them easier to identify. Set it too high, though, and good targets will start to sound bad also, and iron next to a good target will lose both. Start at preset and experiment from there in the area being hunted.

Hot Rock Reject - Determines the responses to those rocks with a different mineralisation than the surrounding soil. A +95 V.D.I. reading is often a hot rock, but it can also be a deep good target, as noted earlier. This control allows a range of rejection or acceptance of this V.D.I. number. Instead of just accepting or rejecting +95, one can run a range from 0 to 20. Zero accepts +95 while 20 rejects it. This control provides many areas in between to help give the hot rocks a different sound than real targets. A negative hot rock is also called a "cold rock", and the response will disappear in pinpoint. A positive hot rock will continue to respond in pinpoint mode. This control could be invaluable in an area with similar hot rocks.

Sweep Speed - If you need to move quickly, a higher speed is indicated. Conversely, if you need to slow down, a slower coil movement is needed. Faster speeds could be effective in a competition hunt or when you want to cover ground where targets are fewer. High-trash areas will cause you to slow down, so a slower sweep speed is best at those sites, or anywhere you need to do a slow search. Sweep speed is more important than the casual detectorist would think, so a little more time has to be spent here. Sweep Speed is related to Recovery Speed and Ground Filtering, and that relates to depth and discrimination. Basically, a faster sweep goes with faster Recovery speeds, and vice versa. Some people like to swing the coil fast, and some slow, never realising that speed affects the depth and discrimination ability of the detector. A nice feature on the DFX is this ability to set your own speed. I also mentioned GROUND FILTERING, and we will get to that in the next section. However, you need to know that the sweep speed of the DFX is not adjustable when using two filters, as the detector does that for you. On the other hand, when using three to six ground filters, you can set the speed yourself if desired. Too fast a Sweep Speed and it will get ahead of the Recovery Speed, but you don't want it too slow either. It's a matter of choosing the right width of target signal that the circuitry analyses. You want a Ground Filter, Recovery, and Sweep Speed that will give you the best depth and discrimination. A bit of experimenting will reveal the ideal speed for your preference and type of hunting. If you don't have a test area

already, bury a few coins away from each other in clean ground and at various depths. Make all your settings and then try various sweep speeds to see which provides the best performance.

At this stage it is good to remember, that all these things are for people who want to tweak up the DFX's performance. If you are new to the hobby, don't get mind boggled. Just let the detector do the work in the Preset Programs.

Ground Filtering - As stated earlier, the DFX offers a choice of up to six filters! What does that mean? Well, it means versatility. It means that you can use the same machine for both coinshooting in parks and relic hunting in extreme ground. The two filters will provide a quicker response to separate closely spaced targets in a trashy area, while the four, five and six filters will better handle mineralisation - and that means more depth. White's use this number system to let you know that as the level of mineralisation goes up, the depth penetration goes down with the lower number of ground filters being used.

Visual Disc - When this feature is on, rejected VDI numbers and ICONS are prevented from appearing on the display. This keeps the display cleaner for interpreting other information.

Icons - The ability to look at the display to see the graphic representation for a ring pull, nail, screw cap, foil, or various coins is good. It can speed things along as you walk. However, it does slow down the display for other indications, which in turn slows down how soon you go to the next target.

V.D.I. Sensitivity - This determines the strength of response of a target required to cause a display indication. It can also provide a third digit to the VDI number when set to 86 or above. A lower setting brings fewer and more reliable indications to the display, but may also keep deeper targets from registering. A higher setting brings more indications to interpret. Try listening to signals first, and then look at the display to isolate a good target.

D.C. Phase - Those people who set their own manual ground balance will find this of use. When the coil is stopped over a target or ground, the D.C. PHASE is shown in the display.

Accumulate, Average, & Fade - These three controls are listed together for convenience. With ACCUMULATE turned ON, SignaGraph information is gathered from multiple coil passes. OFF shows information only from the last coil sweep. AVERAGE is best used with ACCUMULATE to reduce indications from strange loop or target angles. AVERAGE does what it says, it "averages" received information for the SignaGraph. FADE is the rate at which old information is cleared from the SignaGraph. With up to 14 settings, you can easily choose one that allows enough time to view the SignaGraph info before it is reset.

Preamp Gain - This was commonly known as "signal balance" on older machines. It is very important to the depth capability of the detector. Like Sensitivity, it needs to be set as high as possible without causing circuit instability. Unlike Sensitivity, however, it has a great influence on OVERLOAD. Overload should not be appearing in the display during searching. White's limit the PREAMP GAIN settings from 1 to 4. Get it as high as possible without OVERLOAD. One thing to remember is that every time PREAMP GAIN is changed, the detector needs to be re-ground balanced.

Multi Frequency Method - The DFX provides four choices in operating frequencies: two Frequency Best Data, two Frequency Correlate, one Frequency 3kHz, or one Frequency 15kHz. Only one of

these can run at a time. The DFX is offering a choice of frequency settings and not limiting you to what the manufacturer provides. No one choice is best for everything. Gold responds better at higher frequencies, while silver and copper respond better at lower frequencies. The 3kHz option is great for high iron content black sand when salt is not present, and gives better depth on higher conductivity metals like silver. The 15kHz works well in lower mineralisation without salt for gold and cupronickel range targets. Multi Frequency operation does a great job in areas with magnetic iron and conductive salt. The term "BEST DATA" can be misleading as one of the two choices in multi frequency. It suggests that it is the "best" method to use, and while that is often true, it is not always the case. CORRELATE compares data taken from both the 3kHz and 15kHz and rejects those that do not offer predictable information. For instance, iron does not compare predictably between the two frequencies, and thus this method would provide good iron rejection. The BEST DATA multi-frequency method transmits and processes data at both frequencies just as Correlate does, but then automatically chooses to accept the data from the most reliable. Both multi-frequency methods eliminate salt signals. BEST DATA is the preferred method for most applications.

V.D.I. Normalisation - Using two frequencies changes where targets show up on the normal VDI scale. The DFX is automatically set up to account for this when using one of the multi-frequency methods. But when using one of the single-frequency methods, the calibration is different. With NORMALISATION ON, the circuitry recalculates and displays the normal V.D.I.s we are all used to seeing with the 6.59kHz. When OFF, the display becomes distorted in that the "Silver" end is expanded and the lower end compressed when using 3kHz, while just the opposite happens with 15kHz. This expanded resolution presents a bonus when seeking specific targets - for example, looking in the "nickel-foil" range for differences between gold jewellery and aluminium.

As previously stated, please don't get hung up with all of the foregoing. The purpose of going through the individual details of the DFX was simply to take some of the mystery out of the settings available as well as to show the potential of the detector. Having gone through all of the technical data, there's nothing like using a detector for the real answers and I have tried to do this in the second half of the report. Just as a taster, after experimenting with some of the adjustments, I found 127 non-ferrous finds in just four hours detecting!

FIELD TEST REPORT PART II
by Chris Rogers

In Part 1 of this field test I discussed the advantages of a fully programmable detector as opposed to a "turn on and go" machine. I also covered the setting up and using of the XLT DFX in the preset programmes and went on to describe and identify the use of the basic settings and Pro options. In this second part I will describe how I went about setting up the DFX to my personal preferences. I will also suggest some ideas that may help you when setting out with your new machine.

Previous or present owners of XLTs will be familiar with most of the programmes and, with this in mind, I will be concentrating on introducing the newcomer to the programmable world of the DFX. For those experienced users who are looking to improve the performance of their machines I hope that I can give them some ideas that have helped me over the past few months. I also found that there is a whole mass of information concerning the DFX on the Internet, including some revised programmes that may be of assistance to the advanced user.

Getting To Know The DFX

I make no apologies for stressing again the importance of reading and re-reading the manufacturer's handbook that is supplied with the DFX. It is laid out in an easy-to-read format and follows a logical sequence of directions covering all of the detector's functions. Failure to do this could lead you to not fully understanding the detector's capabilities and not benefiting from its advanced technology. Although I had previous experience of using the XLT, I spent several hours shut away from any distraction with the new detector and a selection of coins and other metallic objects. I went through the basic adjustments with the aid of the handbook, familiarising myself with the controls and readings on the display panel. When you have also done this, spend the first few weeks getting used to the feel and responses of the detector in the preset programmes.

In field use one of the most important things is to get the balance right. I found that I had to keep putting my thumb across the control buttons to counteract the weight of the coil because I hadn't adjusted the shaft to a suitable length. Don't dig your targets until you are sure that you understand what the display is telling you, and try going through all the basic adjustments until you find the ones that are right for you. Get used to reading the screen and practise your pinpointing techniques. Use the trigger to determine the depth of the target and, most importantly, keep your battery fully charged. Avoid progressing to the Pro options until you have this experience and confidence.

First Moves

I live and detect in the north of East Anglia. While there are some excellent sites in the area and some good finds to be made here, the soil conditions in this part of the country are, to say the least, extreme. You have to work your detector hard to achieve any sort of result. The soil is sandy and light but is very heavily mineralised. My experience has shown that getting the correct adjustments to the machine is vital. The five factory preset programmes in the DFX are very good and will locate most targets, but in my opinion they are not totally suitable for British conditions. Certain alterations need to be made - especially in the discrimination department - if you are serious about finding the smaller objects such as hammered cut halves and quarters.

With this in mind, and before any testing of the DFX, I looked through the Custom EEPROM Programme settings and decided that the EEPROM Hi Pro most closely matched the conditions I was going to be searching in. I started my tests without any adjustments except to the Tone ID. I prefer to operate with this in the "Off" position, relying on my experience to determine the difference between the signals received rather than the detector's varying tones with it switched on.

Tests

I learnt a long time ago never to worry about the large targets; if a detector is picking up the small ones it will certainly pick up the larger ones. I carried out a number of tests that I have used over the years when assessing a detector's "in air" performance. Using a Henry VI farthing, an Edward III cut halfpenny and a small gold ring, I received a clear and precise signal from all of these items in this programme varying in distance from 3-5in from the search coil. I have a large, heavily mineralised rock that I use when purchasing a new detector. I am confident that if a machine can find a hammered coin under this, then it will perform well in the field. It is surprising how many of the upper price range models I tried failed this test, and I looked forward to seeing how the DFX would cope.

With the discrimination set to reject iron the DFX picked up the cut half with a "broken" signal but failed with the ring and farthing. I then put a full hammered penny under the rock and it was picked up this time more clearly.

Moving out onto the fields with the same settings, I was happy in the knowledge that the DFX could cope with the soil conditions. I tried it firstly on pasture with little finds of interest to comment on. It was noticeable, though, that I was not picking up any ferrous material.

The second site was mineralised with the added burden of heavy iron infestation; it had also been previously detected on for around 20 years. The soil was freshly ploughed, with the rough furrow pressed and very wet. In fact, these were not very nice conditions to be out in. However, I found a Georgian silver seal matrix at about 6in and this gave me the necessary boost to carry on.

Overall, my reaction to the DFX was that it was marginally better than the XLT. But it was not what I was looking for on my difficult sites, even when tried in all the suggested programmes and settings posted on the Internet. However, I did have an ace up my sleeve. I had been given a tip off that White's had a 10in x 5in elliptical coil available as an accessory to be used with the DFX in poor ground conditions. I purchased one from Regtons and fitted it to the machine.

Before trying the DFX with this different coil and using the experience gained from the initial testing, I decided to carry out a few minor adjustments to the basic settings of the preset Prospecting programme. The settings of the programmes are to be found at the rear of the handbook in Chapter 5.

Basic Adjustments To The Preset Program

As already mentioned, the Prospecting programme settings are most suitable for searching in the mineralised and very difficult conditions described above; but they do need some minor changes. To fine-tune this programme (shown on page 55 of the handbook), I would suggest the following procedure:-

1. Set the volume, tone, sensitivity and threshold levels to your personal preferences.
2. Turn the Audio Disc ON (the prospecting programme is set for gold searching and therefore needs to be off).
3. Scroll down to Pro Options and alter Auto Track speed from 18 down to 8 or 9.
4. Continue to scroll down to Bottle Cap Reject and increase it from 1 to 3.
5. Go to Rock Reject and adjust to 10.
6. Sweep Speed should also be increased to between 12-15.
7. Scroll on to Pre Amp Gain and adjust to 3.
8. Most importantly go to 2 Frequency Best Data and turn it ON - this will automatically turn 1 Frequency off in the original programme.

This is all that I feel is necessary to match our bad British conditions, and as you become more familiar with the detector it may well be that you can make even finer tuning pay off. Remember,

though, that these settings will only remain as long as the machine is turned on; when you switch it off the alterations will be lost and the detector will return to the factory settings.

To store the changes to the programme it is essential that they are transferred to one of the EEPROM Programmes. To do this after making the adjustments do not turn the detector off. Press Menu, which will take you to the preset programmes. Press Enter and using the down Arrow scroll down until you reach the Prospecting programme; this will have a flashing cursor next to it. Carry on scrolling down until you reach any of the EEPROM Programmes and press Enter. The screen will indicate a flashing cursor at LOAD. Do not press but continue on to SAVE. Press Enter again and your personal settings will be saved safely for you to recall anytime after switching off.

Tests With Elliptical Coil

Using the same "in air" and "below the rock" tests with the elliptical coil the DFX picked up all the test pieces with ease. To say that I was astounded would be an understatement. These were the best results I had achieved with any of the machines I had tested, and transformed the DFX in my view from a top range detector to the top detector.

Over the same ground that has been the graveyard to many machines, I located 127 non-ferrous finds. These included buttons, musket balls, pieces of lead, a medieval thimble, jettons, some hammered silver and two personal seals. This was all in four hours of detecting! Depth was excellent. I found a hammered penny at a measured 9in, and musket balls at depths of up to 10in. The discrimination was very good and I dug no iron at all. On three or four occasions I had doubtful two-way signals, but these were easily identified as iron on the SignaGraph display.

Hammered silver found with the elliptical coil

The detector was very sensitive to the very tiny finds, which it identified at good depths. Pinpointing was very easy with both coils. One interesting fact was that even in the factory preset coin mode the DFX rejects modern iron centre copper clad 2p and 1p coins.

There are few faults with this detector, and those that exist are more than made up for by its performance. In certain configurations it is sensitive to high-tension electricity cables. On two occasions it also switched off without warning. The other more familiar "bad" design features of the XLT are still obvious: the control box and battery housing are at risk of damp when the machine is rested on the ground and the display screen is prone to scratching; as a result you really need to purchase covers for both of these components.

Summary

Going back to the original theme of which is the better type of machine - "turn-on-and-go" or user programmable - the question becomes redundant when talking about the DFX. Here you have a simple pre-programmed detector that can be up and running as soon as you get on site. At the same time it is a machine that can be adjusted to meet the most demanding of circumstances. Even when using the Pro options that have been stored in the EEPROM settings you still turn on and go!

My intention was to take some of the mystery out of the technical side of the DFX, and I hope I have achieved this aim. It is not a difficult detector to use provided you read the handbook. Sit with the detector and handbook, and go through each stage again and again until you understand what you are doing. Don't attempt too many changes at once, as you will not be able to tell what differences the changes have had on performance. Go out with the intention of concentrating on certain aspects of the settings rather than trying to achieve perfection all in one go.

My suggestions as to the setting up of the detector are just a start, and I'm sure that you will rapidly become competent in achieving the right settings for your personal conditions.

I think that White's should give you the option of either the 9.5in concentric or the 10in x 5in elliptical coils when the DFX is first purchased. I can see a use for both but in my book the elliptical coil was the winner.

Although the DFX is priced at over £800, this is money well spent and there will be no need to upgrade at a later date. I still have a long way to go with the DFX - experimenting with the frequencies for example - and you will find the same. Therefore be patient. I am fully aware that the cynics will say that this is another "be kind to the manufacturer" report and that I have exaggerated some of my comments. But I can assure you that I have never written a field test before, neither have I had any contact with White's. I have written about the detector as I found it….there is no point in doing otherwise.

Whites DFX Metal Detector

Reprinted with permission from Lost Treasures from page 36 of the September 2001 issue of **Lost Treasure** magazine. By Joe Patrick

It is said, good things come to those who wait, and for many White' s metal detector users and customers, who have been eagerly awaiting White' s new multi-frequency 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 White' s 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 XLT's 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 or15 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. White's 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 White' s 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 pull tab and bottle cap 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 the3-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 tree's 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 White's excellent display technology. The Signa Graph 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 DFX's power and sensitivity needed to be handled with care. Those who have used or are currently using White's 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.,Pre-amp and/or V.D.I. gain too much, making the DFX's 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 what's needed, rather than not enough. A user can always scale back a little when required, but can never increase what's not there to begin with! Conclusion In the September 2000 edition of Lost Treasure magazine, I field-tested White's Spectrum XLT. I began my report with the word IMPRESSIVE! This time, I am concluding my report with the words MOST IMPRESSIVE! Yes, this is exactly how I feel about White's 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. White's new DFX 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 owner's 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 White's impressive display and abundant user-selectable menu options, the new DFX is definitely most impressive.

19. OPTIMUM DFX "SWEEP SPEED" SETTINGS

Posted By: Jeff Foster
Date: Tuesday, 30 July 2002, at 10:21 a.m.

The "Sweep Speed" setting does two important things. One thing that it does is that it allows the user to adjust the "Ground Filtering" for better rejection of varying ground mineralization within a single sweep of the search coil (See my prior post titled "Optimum 6 Filter DFX Configuration" 07/25/02.) It also controls, to quote the manual, ". the width of the target signal that the detector's electronics circuit samples or analyzes." So, what does this mean? Here's my shot at trying to explain it. I don't have inside information on the design of the DFX, but in order to help explain these topics, I will describe how I believe these features work based on my experience as a software engineer, and my conversation with Mark Rowan. Even if I am off with some of the details, the concepts that I describe should be beneficial. Inside the DFX, the computer processor (CPU) keeps repetitively looking at the received signal. It does this many times a second. One can imagine that the results of all these signal samples are put on an imaginary shelf. This shelf isn't wide enough to hold all of the results, but it does hold the results of some portion of the search coil sweep. As the shelf fills up, new results are slid on from one side, pushing the oldest results off the other end. In the DFX manual, this concept that I am describing as similar to a shelf, is called the "sample window" (pg. 43). The "Sweep Speed" setting controls the size of this window. So far, this information is not very helpful. The key is to know that we want our sweep of the coil to be synchronized with this sample window such that the signal sample just "pushed out of the window" corresponds to the area of ground that just reappeared from beneath the trailing edge of the moving search coil. This means that as the stored signals get continually moved through the sample window, the current ones in it will be representative of the area of ground that is currently under the moving coil. To illustrate this concept let's look at an example where this is NOT the case. Assume that the largest possible sample window is configured, by selecting a "Sweep Speed" of one, but the search coil is being swept fairly fast. Let's say that the coil has just finished sweeping over a "bad" target. If the correct sweep speed was chosen, all of signal samples with the "bad" target's rejected VDI numbers would now have been pushed out of the sample window. Here, though, before this could happen, the coil is over a "good" target. The "good" target may be rejected because the "bad" target's VDI numbers are still in the sample window. To see this phenomenon first hand (and by the way, configure the optimum "Sweep Speed" setting) perform the following experiment:

Step 1. Prepare a configuration setup.
To clearly show the effect of the sample window size (set by the "Sweep Speed" setting) we want a setup with a dime and a pull-tab separated by a distance a little larger than the search coil. For emphasis, we want the signal from the dime to be weak and the pull-tab to be strong. This is the key to success in being able to see, repeatedly, the behavior that I am describing. If the dime signal is very strong, the DFX will know that the strong VDI signals from should outweigh any remaining "bad" VDI signals in the sample window. Find an area of ground that is "clean" of targets. Put a coin in the ground, deep enough so you are just still getting a solid signal. About ten inches away from the dime (assuming the 9.5" coil), bury a pull-tab about an inch down. (Instead of burying the targets, I prefer to stack up three or four four- foot scraps of "two-by-four" lumber and put the targets between the boards because it allows me to more easily tweak the target locations.)

Step 2. So we're all starting on the same page, load the standard coin program. Ground balance the unit.

Step 3. Change the discrimination settings.
To minimize the variables, do the following: with the "Block Edit" function, set all of the VDI numbers to "reject." Then with the "Disc. Edit" function set VDI numbers 78 - 82 to "accept." (This VDI range will accept dimes.) Confirm that, when the coil is swept over only the dime, you still get a good response. Confirm also that when you sweep the coil only over the pull-tab that you get no response (other than the threshold blanking out). Adjust the target depths if necessary.

Step 4. Set "Ground Filtering" to three and "Sweep Speed" to one.

Step 5. Perform the test
To do this you must take some time sweeping your coil over the test targets and observe the results. During these tests, DO NOT sweep the loop back-and-forth over the targets. Instead, make single smooth sweeps, which first pass over the pull-tab and then the dime, pausing at the end of each sweep. We want to observe just a single sweep of the loop over the target. Notice that when the coil is swept slowly over the targets, you will get a solid response from the dime. As you begin to speed up your sweeps over the targets, it will begin to break up. With even faster sweeps, you will not get any reading from the dime. This is because the VDI numbers from the pull-tab are still in the DFX's sample window when the coil is over the dime. Take some time and find the speed that is just fast enough to get a solid target response. Practice a little at sweeping the loop over the target at this speed. By sweeping the coil at this speed, you can see firsthand what the proper sweep speed is for this "Sweep Speed" setting.

Step 6. Adjust the "Sweep Speed" setting as needed.
If, in the previous step, you have found that the optimum sweep speed needed for the current "Sweep Speed" setting is too slow for your comfort, do the following. Increase the "Sweep Speed" setting a little and repeat Step 5 until, at a comfortable sweep speed for you, you are getting a solid target response AND slightly faster sweeps cause the target response to start to break up.
Step 7. You're done. You now know how to optimize the "Sweep Speed" setting to match your actual sweep speed. (Don't forget to load another program when you're done, unless you only want to find dimes from now on!)

NOTE: In my last post I presented a way to determine the best "Sweep Speed" setting for ground filtering. Here, I show how to determine the best "Sweep Speed" setting for matching the "Sample Window" to your actual sweep speed. You shouldn't be too surprised to see that the results of these two exercises are about the same since the "Ground Filters" and the "Sample Window" have been calibrated to work together! At the other extreme, if a high "sweep speed" setting is chosen, the less data in the smaller sample window will make it more difficult for the DFX to accurately determine what is under the coil. Will it hurt anything to keep the "Sweep Speed" setting at one and maintain a brisk search motion? If you're willing to accept the reduced "Ground Filtering" performance and the risk of nearby "bad" VDI contamination, a low "Sweep Speed" setting will allow much less demanding requirements on the speed you can sweep your search coil and still get otherwise excellent performance.
In Response To: Optimum DFX "Sweep Speed" Setting (Very long) (Jeff Foster)

QUICK REVIEW:
In the above post, titled: "Optimum DFX "Sweep Speed" Setting," I described one of the two important things that the "Sweep Speed" setting controls; the elusive and mysterious "Sample Window." We learned that while the DFX is operating (in "motion" or "discriminate" mode I should add) it is continually, many times a second, reading the signal coming from the search coil. Each sample of the signal is stored in an area of computer memory (the "sample window") that has been set up to act like a shelf. When this shelf is full, new samples that are slid onto one end push the oldest samples off the other end. For best performance of the DFX, it is desirable to coordinate the rate at which the search coil is moved with the current set of samples in the "sample window." This is to say that at any given time, we want the "sample window" to contain samples which only correspond to the ground currently under the search coil. This allows the DFX to most accurately respond to the target currently beneath the coil. If the coil is moved too quickly (for the current "Sweep Speed" setting), "good" targets may be masked by the old signal samples of "bad" targets (still in the "sample window") which are more than one coil-width away. Lower "Sweep Speed" settings create larger "sample windows" because when the DFX's coil is moved slowly, it can make more signal samples during a one coil-width portion of the sweep.

QUESTION:
 You've just bought a spiffy, new, smaller (either 5.3" or DD Eclipse) search coil for your DFX. You go to use it in a "high trash" park. You've searched this park before with the stock 9.5" coil, with the "Sweep Speed" setting configured as described in the above post. You now want to search it with your smaller coil. Assume that you will sweep the new coil at the same speed as the wider old coil. How do you change the "Sweep Speed" setting so the "sample window" will better match the new, smaller, coil? Why?

1. Increase the "Sweep Speed" setting.
2. Decrease the "Sweep Speed" setting.
3. Leave the "Sweep Speed" setting the same.

ANSWER:

1. Increase the "Sweep Speed" setting.

Here's why. Remember that a goal of the "Sweep Speed" setting is to coordinate the set of signal samples in the "sample window" to match the width of ground underneath the search coil. If we left the setting unchanged, the width of the "sample window" will still correspond to the width of the old 9.5" stock coil (since the question says that we are sweeping the new coil at the same speed). To better match the "sample window" to the smaller coil, the "sample window" size needs to be reduced. A higher "Sweep Speed" setting will do this because a higher "Sweep Speed" creates a smaller "sample window". Decreasing the "Sweep Speed" setting would diminish the benefit of the smaller coil by increasing the size of the "sample window" allowing "bad" VDI signals to linger in the "sample window" longer after the coil has moved past the "bad" target. Just the opposite of what we want from a smaller coil!
That's the answer to the question, as it is worded.

20. LEARNING DFX WITH VISION V3

This post contains technical details for experienced DFX users. (Beginners may want to skip it at first.) Many DFX users mistakenly believe that when the DFX is used in 2-Freq Best Data, the DFX merely operates as if both 3kHz and 15kHz were running at the same time. With this misunderstanding, it is not apparent that operating the DFX in one of the Single-Freq modes can be beneficial. The difference is that when the DFX is run in 2-Freq mode, it always operates with two ground-balance points: one at salt (near VDI 0) and one in the iron range. While there are benefits from doing this, there also are tradeoffs. Using Single-Freq modes allow the experienced user to get around the tradeoffs…if they know when to choose between 15kHz Only or 3kHz Only operation. In general, 15kHz Only on the DFX tends to provide the best overall depth for targets, in most circumstances. However, one important exception to this is the case where high-VDI targets are being sought (i.e. U.S. quarters: +84, halves: +88, and silver dollars: +92). In this situation, 3kHz Only **may** be best. Whether or not 3kHz Only is better than 15kHz for high-VDI targets depends on what ground-balance setting the detector uses. The ground-balance setting has nothing to do with the strength of the ground mineralization. Its setting only relates to the **type of mineralization** - the VDI number (D.C. Phase) of the ground. (The ground's VDI number, or D.C. Phase value, represents the ratio of magnetic (iron-based) to electrically conductive material in the ground. *It does not indicate how much mineralization there is – only the type.*) I have been through this topic many times here. And, in the book Digging Deeper with the DFX there is a graph that shows how much deeper 3kHz Only is than 15kHz on a quarter, for different ground VDI numbers. The following is yet another illustration of this basic detector principle using the new White's Vision™ metal detector's Analysis Screen. The Vision™'s Analysis Screen allows the user to sweep the search coil over the pinpointed target to see how the Vision™'s three separate frequencies respond to the target. In this example, a quarter was used as the target. The only difference between the tests, in the first and second image, is the ground-balance set-point.
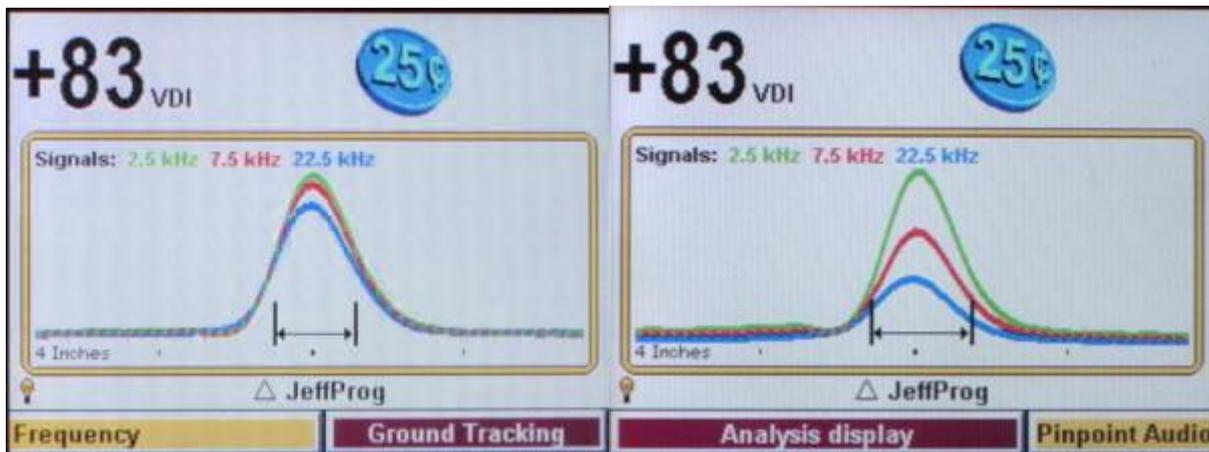
In the first screen, it can be seen that the 3 frequencies, 2.5kHz-green (very close to the DFX's 3kHz, or, actually 2.98kHz), 7.5kHz-red, and 22.5kHz-blue, respond to the quarter at about the same strength. Here, the ground-balance is set away from the -95 end of the VDI scale.

On the second screen, note that 2.5kHz clearly responds best to the quarter. In this test, the ground-balance is set near -95. Again, the only difference in these two tests is the VDI number to which the ground-balance is set. For a DFX user, this is another illustration of how 3kHz can be the frequency of choice for high-VDI targets when the ground's VDI number is near -95.

21. DFX VDI TABLE

Target	Type	Code	Best Data	3 KHz Norm.	15 KHz Norm.	3 KHz Raw	15 KHz Raw
Morgan Silver Dollar 1898 O	Coin	C1	92	92	92	87	93
Eisenhower Dollar 1776-1976 D	Coin	C2	91	91	92	86	93
Kennedy Half Dollar 1776-1976 D	Coin	C4	87	87	90	81	92
Walking Liberty Half Dollar 1944	Coin	C3	85	85	87	79	91
Washington Quarter Dollar 1993 D	Coin	C6	83	83	85	74	90
Sliver Ring 1	Silver Ring	SR13	81	80	84	72	91
Barber Quarter Dollar 1893	Coin	C5	81	81	82	70	89
Roosevelt Dime 1946	Coin	C8	78	78	79	64	87
Silver Ring 2	Silver Ring	SR14	78	78	80	64	88
Roosevelt Dime 1996	Coin	C9	75	76	76	60	86
Lincoln Cent (Wheat Ear) 1958	Coin	C14	75	75	73	60	85
Mercury Head Dime 1945	Coin	C7	78	78	79	54	87
Lincoln Cent (Memorial) 1993	Coin	C15	54	54	61	39	79
Indian Head Cent 1902	Coin	C13	52	52	59	36	78
Large Matrimonial Band	Gold Ring	GR12	46	38	48	24	72
Pull Tab 5	Pull Tab	PT5	40	32	40	21	68
Pull Tab 4	Pull Tab	PT4	31	29	31	20	64
Pull Tab 7	Pull Tab	PT7	44	35	44	19	70
Large Diamond Ring	Gold Ring	GR11	28	27	28	19	58
Pull Tab 6	Pull Tab	PT6	36	27	36	18	66
Medium Diamond Ring 2	Gold Ring	GR9	29	25	29	18	60
Pull Tab 1	Pull Tab	PT1	28	25	28	17	57
Aluminum Slaw Large	Junk	J1	25	21	22	16	50
Large Nugget Ring	Gold Ring	GR10	22	21	24	16	49
Pull Tab 3	Pull Tab	PT3	22	21	22	16	51
Medium Nugget Ring [no GR7]	Gold Ring	GR8	22	21	22	15	51
Pull Tab 2	Pull Tab	PT2	28	25	28	14	57
Buffalo Nickel Five Cents 1936	Coin	C11	20	20	20	14	45
Jefferson Five Cents 1995	Coin	C12	19	18	19	14	43
Liberty Head Five Cents 1901	Coin	C10	18	18	18	13	42
Small Diamond Ring 2	Gold Ring	GR4	18	15	19	13	43
Pinky Cross Ring	Gold Ring	GR5	15	15	16	12	34
Eraser Tip	Junk	J5	14	12	14	11	31
Small Diamond Ring 1	Gold Ring	GR3	12	7	11	9	24
Medium Diamond Ring 1	Gold Ring	GR6	12	11	12	9	26
Aluminum Slaw Medium	Junk	J2	12	11	12	9	26
Candy Foil	Junk	J4	11	11	11	8	23
Pinky Ring	Gold Ring	GR2	10	8	10	7	21
Toe Ring	Gold Ring	GR1	8	5	8	5	15
Medium Gold Chain	Gold Chain	GC1	6	5	7	4	12
Aluminum Slaw Small	Junk	J3	7	2	5	3	13
Small Chain	Gold Chain	GC4	5	3	5	2	10
Thin Chain with Pendant	Gold Chain	GC2	4	2	4	1	7
Medium Chain	Gold Chain	GC3	3	2	3	1	6
Small Tennis Bracelet	Gold Chain	GC5	2	2	2	0	3

22. OPTIMAL SWEET SPEED TABLE

Sweep Speed (setting)	Ideal Sweep Speed (in feet per sec.)
1	5.0
2	5.3
3	5.6
4	6.0
5	6.2
6	6.5
7	6.7
8	7.0
9	7.2
10	7.5
11	7.7
12	8.0
13	8.2
14	8.5
15	8.7
16	9.0
17	9.2
18	9.5
19	9.7
20	10.0

Sweep Speed / Vorschub (m/sec)

1	1,5
2	1,6
3	1,7
4	1,8
5	1,9
6	2,0
7	2,05
8	2,15
9	2,20
10	2,30
11	2,35
12	2,45
13	2,50
14	2,60
15	2,65
16	2,75
17	2,80
18	2,90
19	2,95
20	3,05

Please remember, it is difficult to estimate how fast the loop is moving. Also each person may get slightly different results.

23. DFX PROGRAMMING

DEEP SEEKING MISSILE

I posted the following a bit over a year ago and it led to a discussion which eventually dubbed this the Deep Seeking Missile program ("DSM").
_____
Once you know what the machine is telling you with TONE ID ON, I recommend that you tweak the following controls (in this order!) one at a time:

(This is from the COIN program, but the concept will work for other programs)

PREAMP 4 (or as high as it will go and still run stable)
AC 85 ("")
DC 40 ("") Keep in mind that this only affects results when pinpointing
BOTTLECAP REJECT 0 (unless you HATE digging deep iron)
HOT ROCK REJECT 0 (unless this is unstable - depends on your conditions)
SWEEP SPEED 1 (and SWEEP SLOWLY!)
RECOVERY SPEED 10 (these last two interact -- you must sweep slowly or this recovery time will cause you to miss deep targets.)
I run mine like this and it works great. I find things -- Indians and silver well past the 8" mark -- and thats all I can ask for here in MICH, where that IS the deep stuff. If you have comments on programming, post away!

DFX NO TRASH PROGRAM

DFX Program Listing	Setting
Default Program is:	
EEPROM HI-PRO	
Change only these settings:	
Volume	63
Threshold	7
(Depends on how good your	
headphones are.)	
Tone	231
AC Sensitivity	75
(You can try more on this	
but you have to judge your	
stability in your area. 80 or 85	
would be nice depending on	
ground conditions.)	
Ratchet Pinpointing	ON
Reject	+95
(You are just rejecting plus	
95 in the existing	
discrimination pattern.)	
Recovery Speed	15
Bottle Cap Reject	1
Hot Rock Reject	20
Sweep Speed	1
Ground Filters	6
Visual Discrimination	ON
Icons	OFF
VDI Sensitivity	86
Preamp Gain	4

This is a good program to start with. If the area you are hunting in is relatively trash free this will work great. You can switch to 3kz if you're looking for silver and not worried about rings and nickels. If you hit heavy iron or trash however you will need to bump up your **Recovery Speed** to **20** or **30**. Lower your **Filters**, **3** to **5**, drop the **AC Sensitivity** to about **70**. This will get you through the trash fairly well until the smaller coils get out. **Please note this on discrimination pattern.** Reject -95 to -71. Accept -70 to +94, Still Reject +95 as stated above..***

ProgramUsed: Relic
State: Virginia
BeachLand: Land
TargetVolume: 52
AudioThreshold: 10
Tone: 210
AudioDiscrimination: Audio On
SilentSearch: SS Off
MixedMode: MM On
AC_Sensitivity: 70 - 80
DC_Sensitivity: 50 - 55
Backlite: off
RatchetPinPoint: RPP On
SAT_Speed: 3 - increase for Trash/Hot ground
ToneID: TID Off
VCO: VCO Off
Modulation: MOD On
AutoTrac: AT On
TracView: TV Off
AutoTracSpeed: 12
AutoTracOffset: +1... (read manual)
TrackInhibit: TI On
CoarseGEB: Auto
FineGEB: Auto
DiscriminationEdit: Reject -1 to -95
BlockEdit: Accept 0 to +95
LearnAccept: LA Off
LearnReject: LR Off
RecoverySpeed: 20
BottlecapReject: 4
HotRockReject: 5
SweepSpeed: 5
GroundFiltering: 4 - increase to 6 in High Mineralization
VisualDiscrimination: VD Off
ICONS: Icons Off
VDI_Sensitivity: 80
DC_Phase: DC On
GraphAveraging: GA On
GraphAccumlate: GRAC On
FadeRate: 11
PreAmpGain: 4
TwoFrequencyBestData: 2FB Off
TwoFrequencyCorrelate: TFC Off
VDI_Normalized: VDIN On
Three_kHz: 3F Off
Fifteen_kHz: 15 On
Username: Va Dave's Dual Tone Coin/Relic
UserEmail: gentinfred@cox.net
UserTel:
Date: 28 Oct 2005
Time: 12:31:08

Comments:
This is Mixed Mode's Dual Tone method: all Rejected metals bog with a low tone and all Accepted good metals ping with a Sweet Unique high tone. Though very busy in trash, it can used to "cherry pic" at greater depths, and of course make your usual adjustments for trash.

RUDY EUROPEAN PROGRAM
Rudy's DFX Program
ProgramUsed: relic
State: europe
BeachLand: Land
TargetVolume: 56
AudioThreshold: 10
Tone: 220
AudioDiscrimination: Audio On
SilentSearch: SS On
MixedMode: MM Off
AC_Sensitivity: 78
DC_Sensitivity: 50
Backlite: 0
RatchetPinPoint: RPP Off
SAT_Speed: 7
ToneID: TID Off
VCO: VCO Off
Modulation: MOD Off
AutoTrac: AT On
TracView: TV Off
AutoTracSpeed: 9
AutoTracOffset: 0
TrackInhibit: TI On
CoarseGEB: auto
FineGEB: auto
DiscriminationEdit: -
BlockEdit: -95<-88..-80<-25..-94/95
LearnAccept: LA Off
LearnReject: LR Off
RecoverySpeed: 18
BottlecapReject: 4
HotRockReject: 6
SweepSpeed: 7
GroundFiltering: 2-3
VisualDiscrimination: VD On
ICONS: Icons Off
VDI_Sensitivity: 73
DC_Phase: DC On
GraphAveraging: GA On
GraphAccumlate: GRAC On
FadeRate: -
PreAmpGain: 3-4
TwoFrequencyBestData: 2FB On
TwoFrequencyCorrelate:
VDI_Normalized:
Three_kHz:
Fifteen_kHz:
Username: Rudy

Comments:

For Europe on normal mineralised soil

Robert Ramsey Custom Program
****
ProgramUsed: Any custom slot
State: North Texas
BeachLand: Land
TargetVolume: 56 or user preference
AudioThreshold: 23
Tone: 231 or user preference
AudioDiscrimination: Audio On
SilentSearch: SS Off
MixedMode: MM Off
AC_Sensitivity: 68 - 70
DC_Sensitivity: 30
Backlite: 0
RatchetPinPoint: RPP On
SAT_Speed: 5
ToneID: TID On
VCO: VCO On
Modulation: MOD On
AutoTrac: AT On
TracView: TV Off
AutoTracSpeed: 8
AutoTracOffset: 0
TrackInhibit: TI On
CoarseGEB: autotrac
FineGEB: autotrac
DiscriminationEdit: See block edit
BlockEdit: rej -95 to+14 acc +15 to +22 rej +23 to +70 acc +71 to +94 rej +95
LearnAccept: LA Off
LearnReject: LR Off
RecoverySpeed: 30
BottlecapReject: 5
HotRockReject: 10
SweepSpeed: 10
GroundFiltering: 4
VisualDiscrimination: VD On
ICONS: Icons Off
VDI_Sensitivity: 80
DC_Phase: DC Off
GraphAveraging: GA On
GraphAccumlate: GRAC On
FadeRate: 10
PreAmpGain: 3
TwoFrequencyBestData: 2FB On
TwoFrequencyCorrelate:
VDI_Normalized:
Three_kHz:
Fifteen_kHz:
Username: Robert Rumsey
UserEmail: rrumsey@swbell.net
UserTel: 817-832-3578
Date: 12 Jan 2002

Comments:

Rej the +15 to +22 if you find you're digging too many tabs. I typically need a Hard +19 to dig for a nickle. Try 5 filters if you're ground mineralization averages high.   Tone ID is critical to success. Program is very stable.

Two suggested programmes that I found very good for the DFX using the Elliptical Coil

GROUND CONDITIONS:	Medium to high iron	Very high iron
BASIC ADJUSTMENTS		
Target Volume 48-63	63	63
Audio Threshold 0-42	13	18
Tone (Audio Frequency) 0-255	225	231
Audio Disc ON/OFF	ON	ON
Silent Search ON/OFF	OFF	OFF
Mixed Mode ON/OFF	OFF	OFF
A/C Sensitivity 1-85	73	72
A/C Sensitivity 1-60	50	30
Backlight 0-6	0	0
Viewing Angle 1-50	25	25
PRO-OPTIONS		
Rachet Pinpoint ON/OFF	OFF	OFF
S.A.T. Speed 0-10	9	7
Tone I.D. ON/OFF	OFF	OFF
V.C.O. ON/OFF	ON	ON
Modulation ON/OFF	OFF	OFF
Autotrac ON/OFF	ON	ON
Trac View ON/OFF	ON	ON
Autotrac Speed 1-20	18	9
Autotrac Offset	+1	+0
Trac Inhibit ON/OFF	ON	ON
Coarse G.E.B. 0-255	Auto	Auto
Fine G.E.B. 0-255	Auto	Auto
Disc Edit -95 +95	ACC +95 -40 REJ -95 -41	ACC +95 -45 REJ -95 -46
Block Edit -95 +95	SAME	SAME
Learn Accept ON/OFF	OFF	OFF
Learn Reject ON/OFF	OFF	OFF
Recovery Speed 1-40	30	33
Bottle Cap Reject 1-20	1	3
Hot Rock Reject 0-20	15	10
Sweep Speed 1-20	7	15
Ground Filtering 2-6	4	4
Visual Disc ON/OFF	ON	ON
Icons ON/OFF	ON	ON

V.D.I. Sensitivity 0-99	86	86
D.C. Phase ON/OFF	OFF	OFF
Graph Averaging ON/OFF	ON	ON
Graph Accumulate ON/OFF	ON	ON
Fade Rate 1-14	7	7
Preamp Gain	3	3
2 Freq (Best Data) ON/OFF	ON	ON
2 Freq (Correlate) ON/OFF	OFF	OFF
V.D.I. Normalized ON/OFF	ON	OFF
1 Freq 3kHz ON/OFF	OFF	OFF
1 Freq 15kHz ON/OFF	OFF	OFF

Chris Tuttle EEPROM HI-PRO (tweaked for bad ground)

Custom

BASIC ADJUSTMENTS:

	TARGET VOLUME 48-63	63	
	AUDIO THRESHOLD 0-42	15	
	TONE 0-255	172	MY PREFERENCE
	AUDIO DISC. ON/OFF	ON	
	SILENT SEARCH ON/OFF	OFF	
	MIXED-MODE ON/OFF	OFF	
	AC SENSITIVITY 1-85	77 TO 85	DEPENDS ON STABILITY
	DC SENSITIVITY 1-60	42	
	BACKLITE 0-6		
	VIEWING ANGLE 1-50		
PRO OPTIONS:	RATCHET PINPOINT ON/OFF		
	S.A.T. SPED 0-10	8	
AUDIO	TONE ID ON/OFF	ON	
	V.C.O. ON/OFF	ON	
	MODULATION ON/OFF	OFF	
	AUTOTRAC ON/OFF	ON	
	TRACK VIEW ON/OFF	ON	
	AUTOTRAC SPEED 1-20	8	
G.E.B./TRACK	AUTOTRAC OFFSET -10 +20		
	TRACK INHIBIT ON/OFF	ON	
	COARSE G.E.B. 0-255		
	FINE G.E.B. 0-255		
	DISC. EDIT -95-+95		
	BLOCK EDIT -95-+95	-30 TO +94	
DISCRIMINATION	LEARN ACCEPT ON/OFF	OFF	
	LEARN REJECT ON/OFF	OFF	
	RECOVERY SPEED 1-40	15 TO 25	25 FOR TRASH
	BOTTLECAP REJECT 1-20	1	
	HOT ROCK REJECT 0-20	20	
	SWEEP SPEED 1-20	1 TO 4	STILL EXPERIMENTING
	GROUND FILTERING 2-6	3 TO 6	3 TRASH
	VISUAL DISC. ON/OFF	OFF	
	ICONS ON/OFF	OFF	
	V.D.I.SENSITIVITY 0-99	80	
DISPLAY	DC PHASE ON/OFF	ON	
	GRAPH AVERAGING ON/OFF	ON	
	GRAPH ACCUMULATE ON/OFF	ON	
	FADE RATE 1-14	11	
PREAMP	PREAMP GAIN 1-4	3 TO 4	
	2 FREQUENCY (BEST DATA) ON/OFF	ON	
MULTI	2 FREQUENCY (CORRELATE) ON/OFF		
FREQUENCY	VDI NORMALIZED ON/OFF	ON	
METHOD	1 FREQUENCY (3kHz) ON/OFF		
	1 FREQUENCY (15kHz) ON/OFF		

Comments: Of course in trash, back down on the AC and drop your filters to 3. Also, up your recovery speed to 25 or maybe more and use a slower sweep speed (1). I keep the icons OFF, you really don't need them and it's one less function that the machine doesn't have to perform. One thing I do which really helps me on deciding to dig a target or not is after I've totally set up the machine ie; GB etc., I'll scroll down to Tone ID and leave it ON so when I get a probable target I'll arrow UP or DOWN (Hot Key) and ENTER, then listen to it with just the one tone to see if it's edgy or a nice crisp tone which I don't think you can hear as well with the TID ON. It' s a double check and also another tool that can be used when detecting. It works for me, so if you decide to try it, please let me know your thoughts on it. I used to do it just the opposite with the TID OFF, but now use it ON, with much better results......

```
************************************************************************
ProgramUsed:        EEPROM HI-TRASH
State:           Missouri
BeachLand:        Land
TargetVolume:     50
AudioThreshold:     18
Tone:            220
AudioDiscrimination:  Audio On
SilentSearch:      SS Off
MixedMode:        MM Off
AC_Sensitivity:     75 adj as needed
DC_Sensitivity:     35
Backlite:          0
RatchetPinPoint:    RPP Off
SAT_Speed:         8
ToneID:          TID On
VCO:             VCO On
Modulation:        MOD Off
AutoTrac:          AT On
TracView:          TV Off
AutoTracSpeed:      8
AutoTracOffset:     +1
TrackInhibit:       TI On
CoarseGEB:
FineGEB:
DiscriminationEdit:
BlockEdit:         Acc  -30 to +94
LearnAccept:       LA Off
LearnReject:       LR Off
RecoverySpeed:     20
BottlecapReject:    1
HotRockReject:     20
SweepSpeed:        2
GroundFiltering:     6
VisualDiscrimination: VD On
ICONS:            Icons Off
VDI_Sensitivity:     80  adj as needed
DC_Phase:         DC On
GraphAveraging:      GA On
GraphAccumlate:      GRAC On
FadeRate:          8
PreAmpGain:        3 or 4
TwoFrequencyBestData:  2FB On
TwoFrequencyCorrelate: TFC Off
VDI_Normalized:      VDIN On
Three_kHz:        3F Off
Fifteen_kHz:       15 Off
Username:         BobinMo
UserEmail:        bobdavis45@worldnet.att.net
UserTel:
Date:            17 Jul 2001
Time:            10:53:01
```

Comments:

This program works well for deep hunting in medium trashy areas. It is set for mineralized Missouri ground but can be bumped up for milder ground. The key to this program is TONE ID. The trick is to keep Ground Filtering on hot-key. When you get a hint of high pitch coin tone near trash - hit the down-arrow key and set filters to 3. Re-sweep and listen for improvement in coin tone. If there is a repeatable improvement...DIG! Its probably a coin. To go back into hunt mode, hit the up-arrow key and reset filters to 6. Also, if there are multiple targets under the coil - use DC Phase VDI's to sort them out. In pinpoint mode slowly move the coil from one target to the other. Don't look for any particular VDI number but rather a repeatable shift in VDI that indicates whether target is low VDI trash or high VDI coin. I prefer Modulation OFF for deep hunting. Ratchet Pinpoint is OFF to make it easier to distinguish large deep targets like beer cans. Discrimination may be set to individual taste. Be aware that more discrimination will make it MUCH harder for the machine to "see" a coin close to trash. I kind of like Dave Z's philosophy of "listen to it all and dig what you like".

Roger's DFX Deepsearch Program

Target Volume:...........................50
AudioThreshold:.........................18
Tone:.......................................220
Audio Discrimination:...................On
Silent Search:.............................Off
Mixed Mode:...............................Off
AC_Sensitivity:...........................75 (adjust as needed)
DC_Sensitivity:...........................35
Backlight:...................................0
Ratchet PinPoint:........................Off
SAT_Speed:................................8
ToneID:.....................................Off (on if prefered)
VCO: ....On
Modulation:................................Off
AutoTrac:...................................On
TracView:...................................Off
Trac Speed:................................8
Trac Offset:................................+1
Track Inhibit:..............................On
Coarse GEB:...............................Auto
Fine GEB:...................................Auto
Block Edit:..................................Accept -30 to +94
Block Edit...................................Reject -31 to -95 and +95
Learn Accept:.............................Off
Learn Reject:..............................Off
Recovery Speed:.........................20
Bottlecap Reject:.........................1
HotRock Reject:...........................0
Sweep Speed:.............................2
Ground Filtering:.........................6
Visual Discrimination:..................On
Icons:.......................................Off
VDI_Sensitivity:...........................80 (adjust as needed)
DC_Phase:..................................Off
Graph Averaging:.........................On
Graph Accumlate:........................On
Fade Rate:..................................8
Pre-Amp Gain:.............................3 or 4 (depends on ground)
2 Frequency BestData:..................On
2 Frequency Correlate:..................Off
VDI_Normalized:..........................On
3kHz:..Off
15 kHz:......................................Off

DFX Extreme Program

Target Volume.............................60
Audio Threshold..........................14
Target Tone...............................231
Audio Disc..................................ON
Silent Search..............................OFF
Mixed Mode................................OFF
A/C Sensitivity............................60
D/C Sensitivity............................40
Backlight? 0
Viewing Angle.............................25

Ratchet Pinpoint.........................OFF
S.A.T Speed...............................5
Tone ID.....................................OFF
V.C.O..ON
Modulation................................ON
Autotrac....................................ON
Trac View...................................ON
Autotrac Speed............................8
Autotrac Offset........................... -2
Trac Inhibit.................................ON
Course G.E.B..............................AUTO
Fine G.E.B..................................AUTO
Block Edit Accept.........................-30 To +95
Block Edit Reject.........................-95 To -31
Learn Accept............................. ..OFF
Learn Reject.............................. ..OFF
Recovery Speed............................8
Bottle Cap Reject.........................2
Hot Rock Reject...........................5
Sweep Speed..............................6
Ground Filtering..........................3
Visual Discrim..............................ON
Icons...OFF
V.D.I Sensitivity...........................85
D.C Phase...................................OFF
Graph Averaging.........................ON
Graph Accumulate.......................ON
Fade Rate...................................5

Preamp Gain...............................3
2 Frequency Best Data...................OFF
2 Frequency Correlate...................OFF
V.D.I Normalize............................ON
1 Frequency 3KHz.........................ON
1 Frequency 15KHz.......................OFF

Roger's Farmland 2 (High Trash)

Target Volume ....63............(PP)
Audio Threshold ....6.............(PP)
Target Tone ....232............(PP)
Audio Disc ....ON
Silent Search ....OFF...........(PP)
Mixed Mode ....OFF
A/C Sensitivity 65
D/C Sensitivity 45
Backlight ....OFF
Viewing Angle ....30..............(PP)

Ratchet Pinpoint ....OFF...........(PP)
S.A.T Speed 5
Tone ID ....OFF
V.C.O ....ON............(PP)
Modulation ....ON
Autotrac ....ON
Trac View ....OFF
Autotrac Speed 8
Autotrac Offset 0
Trac Inhibit ....ON
Course G.E.B ....AUTO
Fine G.E.B ....AUTO
Block Edit ....Accept -45 To +95
Block Edit ....Reject -46 To -95
Learn Accept ....OFF
Learn Reject ....OFF
Recovery Speed 36
Bottle Cap Reject 1
Hot Rock Reject 0
Sweep Speed 5
Ground Filtering 5
Visual Disc ....ON
Icons ....OFF
V.D.I Sensitivity.............................85
D.C Phase ....OFF
Graph Averaging ....ON
Graph Accumulate ....ON
Fade Rate 8

Preamp Gain 3
2 Frequency Best Data......................ON
2 Frequency Correlate ....OFF
V.D.I Normalize ....ON
1 Frequency 3KHz ....OFF
1 Frequency 15KHz ....OFF

Novice DFX Program

Target Volume: (Personal Preference)
Audio Threshold: (Personal Preference)
Tone: User Select
Audio Discrimination: On
Silent Search: Off
Mixed Mode: Off
AC Sensitivity: 80
DC Sensitivity: 50 - 55
Backlite: off
Ratchet PinPoint: OFF
SAT Speed: 8
Tone ID: Off (Personal Preference)
VCO: ON
Modulation: Off
AutoTrac: On
TracView: Off
AutoTrac Speed: 8
AutoTrac Offset: +1
Track Inhibit: On
Fine GEB: Auto
Block Edit: Reject -95 to +09, Accept +10 to +95
Learn Accept: Off
Learn Reject: Off
Recovery Speed: 15
Bottlecap Reject: 1
HotRock Reject: 20
Sweep Speed: 1
Ground Filtering: 4
Visual Discrimination: Off
ICONS: Off
VDI Sensitivity: 90
DC Phase: DC On
Graph Averaging: On
GraphAccumlate: On
Fade Rate: 05
PreAmp Gain: 4
Best Data: ON
VDI Normalized: On

DFX BEACH PROGRAM

Target Volume = 63
Audio Threshold = 15
Tone (Audio Freq.) = 231
Audio Disc. = ON
Silent Search = OFF
Mixed-Mode = OFF
A.C. Sensitivity = 78
D.C. Sensitivity = 48
Backlight = 0
Viewing Angle = 25
Ratchet Pinpoint = ON
S.A.T.Speed = 5
Tone I.D. = ON
V.C.O. = OFF
Modulation = ON
Autotrac = ON
Trac View = OFF
Autotrac Speed = 8
Autotrac Offset = 0
Trac Inhibit = ON
Coarse G.E.B. = AUTO
Fine G.E.B. = AUTO
Disc. Edit, Block Edit = REJ. -95 - -26, ACC. -25 - +93, REJ. +94 - +95
Learn Accept = OFF
Learn Reject = OFF
Recovery Speed = 20
Bottlecap Reject = 2
Hot Rock Reject = 3
Sweep Speed = 1
Ground Filtering = 5
Visual Disc. = ON
Icons = ON
V.D.I. Sensitivity = 95
D.C. Phase = OFF
Graph Averaging = ON
Graph Accumulate = ON
Fade Rate = 10
Preamp Gain = 3
2 Frequency (Best Data) = OFF
2 Frequency (Correlate) = ON
V.D.I. Normalized = ON
1 Frequency (3Khz) = OFF
1 Frequency (15Khz) = OFF

Note: ToneID is something you need to get used to, so in this case you may want to turn it off. I use it as a base, and will make adjustments in the field as needed without saving the changes.

ROGER FARMLAND 1

Target Volume .... 63......... (PP)
Audio Threshold ....6............(PP)
Target Tone ....232.........(PP)
Audio Disc ....ON
Silent Search ....OFF.........(PP)
Mixed Mode ....OFF
A/C Sensitivity 72
D/C Sensitivity 50
Backlight ....OFF
Viewing Angle ....30..........(PP)
Ratchet Pinpoint ....OFF.......(PP)
S.A.T Speed 5
Tone ID ....OFF
V.C.O ....ON.........(PP)
Modulation ....OFF
Autotrac ....ON
Trac View ....OFF
Autotrac Speed...........................8
Autotrac Offset ....+1
Trac Inhibit ....ON
Course G.E.B ....AUTO
Fine G.E.B ....AUTO
Block Edit ....Accept -40 To +95
Block Edit ....Reject -41 To -95
Learn Accept ....OFF
Learn Reject ....OFF
Recovery Speed 24
Bottle Cap Reject 1
Hot Rock Reject 0
Sweep Speed 3
Ground Filtering 5
Visual Disc ....ON
Icons ....OFF
V.D.I Sensitivity 85
D.C Phase ....OFF
Graph Averaging ....ON
Graph Accumulate ....ON
Fade Rate 8
Preamp Gain 3
2 Frequency Best Data ....ON
2 Frequency Correlate ....OFF
V.D.I Normalize ....ON
1 Frequency 3KHz ....OFF
1 Frequency 15KHz ....OFF

Notes:The program above was devised after many hours testing on "in ground" targets out on my sites, and is designed to pick up the tiniest targets possible with a detector, some will find it a bit "hot" as I like to hear the spits and cracks from iron, remember with the bottlecap reject set to 1 all iron apart from small nails, will give a broken signal rather than null completly out, this means the machine can pick the good targets right out from amongst the iron, just dig all two way repeatable signals, if you get a two way iffy signal, just scrape some soil away with your foot to get the coil closer to the target, the trick with this program is to "walk through" the spits and cracks and the one way signals, and not keep stopping to check every one out as a novice would, a lot of the one wayer's will dissappear on the second sweep over the target, if your moving slowly you'll easily pick out the two way good signals, if your using the program for the first time throw a small coin on the ground, swing over it varying the distance betwee the coin and coil, and take note of the solid, cleaner, two way signal it gives, these are the ones your listening for amongst the cracks and spits of the rejected iron, a patient detectorist will soon master it, an impatient fast swinging detectorist never will.
Plenty of detectorists have had great success with this program, and myself have found 36 hammered coins in 8 months using it, including cut halves and quarters, so its well tested and proven.

The DFX is one of the most sensitive machines on the market, which makes it ideal for hunting small hammered coins, I know some people don't get the best out of it from e-mails i've received over the past few months, to make the machine as sensitive as possible i found two settings were vital, setting the discrimination to except down to at least -40 is one and having the track-offset at +1 is the other, I found altering these two settings alone made the machine less sensitive to small finds no matter what coil i was using.

I have also been asked which settings need changing when switching to a different site, well the only settings i ever changed were the "power" settings, A/C sens, and pre-amp gain, if i found i had to reduce the a/c by more than five numbers to stabalise the machine, i would reduce the pre-amp by one number and then try getting the a/c back up again.

There's really no need to change a lot of settings when switching sites as some people seem to think, the one main thing that could be different from site to site is the amount of mineralisation in the soil, thats not a big problem as the ground tracking will take care of that, the only time you could hit a problem is when the mineralisation is so severe that it falls outside the range of the tracking, luckily this doesn't happen too often, some machines have a switch that can alter the range of the tracking, like a "black sand" switch which would alter the range of the tracking to cope with the most severe conditions.

The above program can generate a bit of noise, which is one of the trade-off's for having the machine running on a low discrim setting, and set-up to its most sensitive, the noise can be annoying to some, but the amount of cut hammered this prog has found for myself and others i think its well worth putting up with a bit of background noise, one way of reducing the noise is to switch to "silent search" mode, you'll lose very little performance wise doing this, and i ended up using this mode more and more often, and never noticed any difference at all in my finds rate.
Good luck and good hunting.

Toddy's DFX Mixed Mode

Target Volume 63
Audio Threshold   ....10 (This is Important)
Target Tone 190   (Iron Tone)
Audio Disc   ....ON
Silent Search   ....OFF
Mixed Mode   ....ON
A/C Sensitivity   ....70 - 74
D/C Sensitivity 30   (Volume of rejected Targets)
Backlight   ....OFF
Viewing Angle 30

Ratchet Pinpoint   ....ON   (Important as you don't use VCO)
S.A.T Speed 7
Tone ID   ....OFF
V.C.O   ....OFF   (Important)
Modulation   ....OFF
Autotrac   ....ON
Trac View   ....ON   (Until Set)
Autotrac Speed...........................??
Autotrac Offset   ....0 or +1
Trac Inhibit   ....ON
Course G.E.B   ....AUTO
Fine G.E.B   ....AUTO
Block Edit   ....Accept -29 To +95
Block Edit   ....Reject -95 To -30
Learn Accept   ....OFF
Learn Reject   ....OFF
Recovery Speed   ....30 - 40
Bottle Cap Reject 1
Hot Rock Reject 10   (Hot-Rocks will give a low buzz like Iron)
Sweep Speed 6
Ground Filtering 6
Visual Disc? ?   ....ON
Icons   ....OFF
V.D.I Sensitivity 85
D.C Phase   ....ON
Graph Averaging   ....ON
Graph Accumulate   ....ON
Fade Rate 8

Preamp Gain   ....3 - 4
2 Frequency Best Data   ....ON
2 Frequency Correlate   ....OFF
V.D.I Normalize   ....ON
1 Frequency 3KHz   ....OFF
1 Frequency 15KHz   ....OFF

Posted with kind permission of Colin Irvine (Toddy)

Ciao Cocco da Clan.
Se non é di troppo disturbo potresti inserire un buon programma per la 14 dd visto che sei uno dei migliori per il DFX.
Saluti e grazie in anticipo.

Ciao Clan,benvenuto sul forum,ti consiglio come da regolamento del forum a passare per la stanza saluti a fare una breve presentazione e i saluti a tutti gli utenti in modo da conoscersi un po

Per quanto riguarda un programma per il dfx io posso darti il mio che per le mie ricerche lo considero il migliore,considerà però che non ho mai provato questo programma con piastre così grandi.....ma solamente con la piastra eclipse 950 standard,la 5x9 dd (bianca) e la eclipse 5.3,se lo vuoi provare te lo posto volentieri però ti dico già che risulta un po instabile anche con piastre piccole,la differenza la si fa sopportando alcuni falsi segnali e rumori di sottofondo con l'esperienza

Traget volume 56
audio threshold 15
tone 222
audio disc ON
silent search OFF
mixed mode OFF
a.c. sensitivity 80
d.c. sensitivity 50
backlight 0
viewing angle 25
ratchet pinpoint ON
s.a.t. speed 7
tone i.d. OFF
v.c.o. OFF
modulation OFF
autotrac ON
trac view OFF
autotrac speed 12
autotrac offset +1
trac inhibit ON
coarse G.E.B (automatico non modificare)
fine G.E.B (automatico non modificare)
disc edit reject da -95 a -51 accept da -50 a +94 reject +95
bloc edit uguale a disc edit (non modificare)
learn accept OFF
learn reject OFF
recovery speed 30
bottlecap reject 4
hot rock reject 15
sweep speed 10
ground filtering 3
visual disc ON
icons ON
v.d.i. sensitivity 80
d.c. phase ON
graph avarging ON
graph accumulate ON
fade rate 8
preamp gain 3
2 frequency (best data) ON
2 frequency (correlate) OFF
v.d.i. normalized ON
1 frequency (3 khz) OFF
1 frequency (15 khz) OFF

io utilizzo sempre questo programma con qualsiasi piastra che uso trà le 3 elencate sopra e mi trovo benissimo,penso che con la piastra da 14 che userai dovrai rivedere sicuramente la sensibilità a.c sensitivity diminuendola un po e magari alzare un po la discriminazione e inserire la sola frequenza di 3 khz attiva e mettere i filtri ground filtering a 4 forse anche a 5 invece di 3,comunque tu provalo come te l'ho dato il programma poi se serve prova fare quelle modifiche.
Non spaventarti se in aria il metal suona come un cavallo impazzito soprattutto in casa.....vai nel luogo di ricerca e prova in ricerca vera e propria :)

12-14" COIL PROGRAM

Traget volume 56
audio threshold 15
tone 222
audio disc ON
silent search OFF
mixed mode OFF
a.c. sensitivity 70
d.c. sensitivity 45
backlight 0
viewing angle 25
ratchet pinpoint ON
s.a.t. speed 7
tone i.d. OFF
v.c.o. OFF
modulation OFF
autotrac ON
trac view OFF
autotrac speed 12
autotrac offset +1
trac inhibit ON
coarse G.E.B (automatico non modificare)
fine G.E.B (automatico non modificare)
disc edit reject da -95 a -30 accept da -29 a +94 reject +95
bloc edit uguale a disc edit (non modificare)
learn accept OFF
learn reject OFF
recovery speed 30
bottlecap reject 4
hot rock reject 15
sweep speed 6
ground filtering 4
visual disc ON
icons ON
v.d.i. sensitivity 80
d.c. phase ON
graph avarging ON
graph accumulate ON
fade rate 8
preamp gain 3
2 frequency (best data) OFF
2 frequency (correlate) OFF
v.d.i. normalized ON
1 frequency (3 khz) ON
1 frequency (15 khz) OFF

Ho modificato il programma a 15Khz,adesso il suono del traget risulta più deciso,che dite?

Traget Volume 60
Audio treshold 0
Tone 230
Audio disc ON
Silent Search OFF
Mixed mode OFF
A.C Sensitivity 75
D.C Sensitivity 46
Backlight 0
Viewing Angle 25
Ratchet Pinpointing on
S.A.T. Speed 8
Tone I.D. OFF
V.C.O ON
Modulation On
Autotrac ON
Trac View OFF
Autotrac Speed 12
Autotrac Offset 0
Trac Inhibit ON
Coarse G.E.B. auto
Fine G.E.B. auto
Disc.Edit Reject -95 a -40
Disc.Edit Accept da--39 a + 94 reject +95
Block Edit uguale a disc edit
Learn Accept OFF
Learn Reject OFF
Recovery Speed 30
Bottlecap reject 3
Hot Rock Reject 14
Sweep Speed 3
Ground filtering 3
Visual Disc ON
Icons OFF
V.D.I. Sensitivity 88
D.C Phase OFF
Graph Averaging On
Graph Accumulating On
Fade Rate 10
Preamp Gaing 4
2 Freq.Best Data OFF
2 Freq.Correlate OFF
VDI Normalized ON
1 Freq. 3KHZ OFF
1 Freq. 15KHZ ON

Questo programma è terrestre ma penso che con pochi ritocchi vada anche in spiaggia, io personalmente in spiaggia alzerei la discriminazione (li puoi tirare via anche più ferro) se vai in zone salate in inseriei 2 frequenze attive e aumenterei i filtri da 3 a 4 e forse a 5,se invece fai spiaggia normale sull'asciutto dove c'è poco sale usa pure la sola frequenza di 15Khz e 4 filtri attivi (considera che la spiaggia è nebbia per me,li non ho esperienza) ma secondo la teoria dovrebbe andare,tentare non nuoce,ciao
----
Con questo programma per il DFX finalmente sono riuscito a sfondare oltre 30 cm per una moneta da 20 cent di euro (anche se in aria) 33cm esattamente,cosa che fino ad ora non mi era mai riuscita :rolleyes: :woot:

Piastra eclipse 950 a stella (modello nuovo)

Traget Volume 50
Audio treshold 0
Tone 240
Audio disc ON
Silent Search OFF
Mixed mode OFF
A.C Sensitivity 65

D.C Sensitivity 40
Backlight 0
Viewing Angle 25
Ratchet Pinpointing on
S.A.T. Speed 8
Tone I.D. OFF
V.C.O ON
Modulation On
Autotrac ON
Trac View OFF
Autotrac Speed 12
Autotrac Offset 0
Trac Inhibit ON
Coarse G.E.B. auto
Fine G.E.B. auto
Disc.Edit Reject -95 a -21
Disc.Edit Accept da-20 a +95
Block Edit uguale a disc edit
Learn Accept OFF
Learn Reject OFF
Recovery Speed 30
Bottlecap reject 1
Hot Rock Reject 20
Sweep Speed 3
Ground filtering 4
Visual Disc ON
Icons OFF
V.D.I. Sensitivity 85
D.C Phase OFF
Graph Averaging On
Graph Accumulating On
Fade Rate 10
Preamp Gaing 4
2 Freq.Best Data OFF
2 Freq.Correlate OFF
VDI Normalized ON
1 Freq. 3KHZ OFF
1 Freq. 15KHZ ON

l'impressione mia è che il dfx (questo ultimo mio è del 2007 mentre quelli che ho avuto in precedenza erano di produzione 2003 con la vecchia piastra 950 non a stella) guadagni almeno 4 cm con la piastra 950 tipo a stella rispetto ai dfx con la 950 vecchia tipo a stella usando i programmi impostati da white's :shifty: :)

Invito qualche possessore del dfx a provare il tale programma e poi scriva le sue impressioni,io fino ad ora non l'ho testato su terra,spero di farlo il prima possibile.... :)
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24. GLOSSARY OF DFX TERMS

A

A.C. SENSITIVITY: A DFX menu setting that determines the discrimination sensitivity. Allows selection of the degree to which the detector will respond to signals while in a discriminating mode (one where the loop coil must be moved).

A.G.B.: Automatic Ground Balance. See GROUND BALANCE - Self Adjusting and AUTOTRAC (for DFX).

AIR TEST: A procedure performed by placing a metal detector on a non-conductive surface and passing various sized metal samples beneath the coil to check the detector's features and target response. This test is NEVER an accurate indicator of ground depth penetration capability nor is it ever meant to be. See BENCH TEST.

ALKALINE: A type of battery able to sustain longer periods of current drain with greater storage life when compared to the standard carbon-zinc type or the nickel cadmium (NiCa).

ALL-METAL: Any operating mode or control setting that allows total acceptance of any type of metal targets. Usually associated with the Ground Balance mode. This is the usual setting for hand probes.

ANTENNAE: See SEARCHCOIL.

AUDIO DISC: Menu setting that allows detector to discriminate "trash" sounds by silencing or breaking them off and giving "valuable" sounds a smooth and solid tone, if ON.

AUDIO FREQUENCY: See TONE.

AUDIO ID: Circuitry that produces different audio tones (pitch) for different targets' conductivity. See also TONE ID.

AUDIO RESPONSE: See TARGET RESPONSE.

AUDIO THRESHOLD: Menu setting that sets the desired loudness of the background hum (threshold).

AUTO TUNE: Circuitry that continuously retunes the detector's threshold to the initial manually tuned audio level. The retuning rate following target rejection or drift can be preset or variable.

AUTOTRAC: A DFX menu setting that automatically adjust the Ground Balance while searching when turned ON. OFF keeps the same original ground balance unless re-balanced manually.

AUTOTRAC OFFSET: A DFX menu offset adjustment that allows the AGB to be set either slightly more positive or negative than would normally register as a perfect ground balance. Used by the "pros" to enhance signal of tiny metals (+) such as gold nuggets or eliminate "hot rocks" (-) in difficult ground.

AUTOTRAC SPEED: A DFX menu setting that dictates when the AGB automatically adjusts the detector's ground balance. Should occur every 3-5 sweeps. See GROUND BALANCE – Self Adjusting.

AUTOTRAC VIEW: A DFX menu setting that, when ON, allows operator to see when the detector automatically ground balances (autotrac) by displaying the word "TRACK" in the right side of the display screen. Used when experimenting with different Trac Speeds to determine how often detector adjusts.

B

BACKLIGHT: A DFX menu setting that lightens the display window in dark conditions. 0 is OFF. ON levels are 1-6.

BACK READING: A false signal, when operating in the discriminate mode, caused by a rejected target coming within one inch of or contacting the searchcoil bottom.

BACK SHOOT: Caused by slightly tipping the outside edge of the coil up at the end of a ground scan (detuning the coil). Often users mistake this for a defect in the detector or a falsing signal.

BENCH TEST: An air test to determine at what approximate discriminate settings various metal samples are rejected or accepted. The test is conducted in a non-metallic area.

BLACK SAND: One of the most extreme components of nonconductive, negative ground minerals. Also called magnetite (Fe30) or magnetic iron oxide. Often associated with the location of gold flake and nugget deposits.

BLOCK EDIT: A DFX menu setting that speeds up Disc Edit changes by dragging blocks (or groups) of Accept or Reject VDI number choices with arrow controls (scrolling) rather than entering each VDI number separately. See DISC EDIT.

BODY-MOUNT: A configuration whereby the control housing is separated from the control shaft and fastened to the operator's body lessening arm fatigue and expanding usability for shallow water hunting. Also known as Hip mount.

BOTTLE CAP REJECT: A DFX menu setting that determines how strongly the detector will reject or "break up" audibly on iron targets. Allows detector to better recognize iron in difficult (often trashy) ground. Higher settings give more iron rejection. Nickels tend to sound better at lower settings.

C

CACHE: Any intentionally hidden, stored, stashed, buried or secret hoard of equipment, supplies or valuables.

CARBON-ZINC: The most common standard dry cell battery type.

COARSE G.E.B.: A DFX menu setting that allows viewing of current AGB and/or manual overriding of the AGB. Used for controlled detector reactions to specific minerals. Must turn Autotrac OFF when using. See FINE G.E.B.

COIL: See Searchcoil.

COIL COVER: A tight fitting plastic protective cover for the searchcoil bottom. Also called scuff cover or skid plate.

COIN DEPTH INDICATOR: A visual indicator used in conjunction with calibrated circuitry to indicate depth of buried coins in inches.

COIN SHOOTING: A common or slang term for metal detecting coins only.

CONCENTRIC: A searchcoil configuration using one or more transmit and one receive windings having unequal diameters aligned on a common center; most recently arranged on the same plane and called Coplanar Concentric.

CONDUCTIVE SALTS: One of the major mineral types that make up the positive ground matrix. Wet, ocean salt/sand produces a positive rise or metallic type response on an air-tuned threshold.

CONDUCTIVITY: The measure of a metal target's ability to allow the generation of eddy currents on its surface.

CONTROL HOUSING: A metal or plastic box that holds circuit boards, indicators, meter, controls and power supply.

CONVERTIBLE / COMBINATION: A metal detector configuration allowing versatility in operator handling (i.e. hand held to body/hip mount).

COPLANER: Any searchcoil configuration in which transmit and receive windings occupy the same level or plane.

CRYSTAL CONTOLLED OSCILLATOR (CCO): A transmit oscillator employing a crystal to maintain a stable output frequency.

D

D.C. PHASE: A DFX menu setting that is used to measure the ground mineralization and a Phase (reference) number of a specific target while pinpointing. This is useful to the "pros" that use the COARSE and FINE G.E.B settings. By measuring the ground and noting various target reference numbers optimum settings might be re-entered and used in a different area with similar conditions without multiple adjustments or experimenting being required.

D.C. SENSITIVITY: A DFX menu setting that sets detector sensitivity (degree to which it will respond to any signal). Allows selection of the degree to which the detector will respond to any signals while in a non-discriminate (All-Metal, non-motion) mode.

DEPTH / DEPTH PENETRATION: The greatest measure (usually in inches) of a metal detector's ability to transmit an electromagnetic field into the ground and produce a target signal.

DETECTION PATTERN: The densest or strongest region of the searchcoil's electromagnetic field where detection occurs. Its shape is balloon and changes in size directly proportional to target surface area.

DE-TUNING: A method of manually or automatically desensitizing a metal detector so that it may locate the center of a target. Accomplished by adjusting the audio threshold into the null, or less sensitivity, tuning zone. This narrows a target signal width manually for precise pinpointing by retuning the audio threshold over the target response area (e.g. releasing and pressing the pinpoint control one or more times while the coil is over the target). See PINPOINTING.

DISC: See DISCRIMINATION.

DISCRIMINATION: Adjustable control circuitry or methods which ignores (or nulls) audio responses from a specific conductivity/phase range allowing positive responses to be heard from metals higher in conductivity above the discriminate control setting. Designed primarily to eliminate audio/visual responses from trash (lower conductive) metals. Discrimination has greater impact on how a detector operates than any other feature. See also Motion Discriminator.

DISC EDIT: A DFX menu setting that allows the changing of target reference (VDI) numbers, one at a time, as to whether they are either Accepted (detected) or Rejected (discriminated out) within any given program used. See BLOCK EDIT.

DOUBLE BLIP: An audio signal characteristic common to elongated ferrous targets such as nails or coins lying close to the surface detected in the All-Metal no-motion mode.

DOUBLE D, 2D or DD: See WIDE SCAN.

DRIFT: A loss of threshold tuning stability caused by temperature change, time, battery condition, ground mineral content or detector design.

E

EDDY CURRENTS: Small circulating currents of electricity produced on the surface of metal by a transmitted electromagnetic field. These currents then produce a secondary electromagnetic field that can be detected by the search coil receiver (resulting in inductive imbalance between the windings).

ELECTROMAGNETIC FIELD: An invisible force extending from top and bottom of the searchcoil created by the flow of alternating oscillator frequency current around the transmit winding. See also DETECTION PATTERN.

ELECTRONIC PINPOINTING: An automated detuning feature that narrows signal response for the purpose of target pinpointing. Can also refer to the use of palm held electronic probes.

ELLIPTICAL COIL: A searchcoil with an ellipse (extended oval) shape. This coil can be either concentric or wide scan type.

F

FADE: A DFX menu setting that determines how quickly target bars fade (clear) from display after each target hit. Set to see target information but not still be there when another target is hit during a different coil sweep.

FAINT SIGNAL: A barely produced audio response. A sound characteristic of targets that are sometimes deeply buried or very small in size.

FALSE SIGNAL / FALSING: An erroneous signal created by over shoot, back shoot, uneven ground, ground voids or highly mineralized hot rocks. When in the discriminate mode, a signal caused by a rejected target coming within one inch of or contacting the coil bottom. See also BACK READING.

FARADAY-SHIELD: A metal foil wrapping of the searchcoil windings or metallically painted search coil housing interior for the purpose of eliminating electrostatic interference caused by wet vegetation.

FERROUS: Descriptive of any iron or iron bearing material.

FERROUS OXIDE: An oxidized particle of iron, which generally becomes nonconductive and makes up the natural negative ground mineral matrix. Hematite, which is also iron oxide (Fe2 03), will respond as positive or metallic. See also Black Sand.

FINE G.E.B.: A DFX menu setting that allows smaller adjustments of the current Coarse G.E.B. setting to determine an actual ground rejection level. Must turn Autotrac OFF when using. See COARSE G.E.B.

FREQUENCY: The number of complete alternating current cycles (on and then off = 1 cycle) produced by the transmit oscillator per second. Frequency is measured in kHz or cycles per second. (VLF) Very Low Frequency = 3 to 30 kHz   (LF) Low Frequency = 30 to 300 kHz   (MF) Medium Frequency = 300 to 3000 kHz   (HF) High Frequency = 3 to 30 MHz.   (NOTE: Most metal detectors are VLF)

FREQUENCY SHIFT: A feature that suppresses the audio interference (cross-talk) between two detectors using identical transmitting frequencies in close proximity (approximately 20 feet or less).

G

GAIN: See PREAMP GAIN or SENSITIVITY.

GRAPH ACCUMULATE: A DFX menu setting that, when ON, collects the VDI graph bars instead of clearing them after each coil sweep. It combines graphic display information over multiple coil passes over a target. Should be used with FADE to prevent display from filling up.

GRAPH AVERAGING: A DFX menu setting that averages all target hits in several sweeps to determine a target ID. It emphasizes the most common or predominant display indicators to show the most likely target. Works more efficiently if used in conjunction with GRAPH ACCUMULATE and FADE.

GROUND BALANCE: A highly misunderstood, yet important, aspect of metal detecting. It's the operation of special detector circuitry that can ignore the "masking effect" that iron (ferrous) minerals can have over metal targets in the ground. It's the detectors ability to ignore these disruptive effects; similar to fog lights penetrating heavy fog.

GROUND BALANCE - Factory Preset: A feature that eliminates the manual ground balance control and its adjustment from the operator's setup procedure. The factory, to optimize operation over an average range of nonconductive soils, performs this adjustment internally.

GROUND BALANCE - Manually Adjusted: A feature requiring a manual control adjustment procedure to neutralize the effects of negative minerals in the search matrix.

GROUND BALANCE - Self Adjusting: A feature which senses change in ground mineral content and continuously readjusts the ground balance while in operation. Sometimes called Ground Tracking or Automatic Ground Balance (AGB). See AUTOTRAC (for the DFX).

GROUND FILTER: Complex circuitry found in motion-type detectors which separates mineral signals from metal signals allowing it to be further processed by the discrimination circuitry. Used to distinguish between ground, trash and valued targets. The fewer filters there are, the quicker the detector responds. But detection depth is lost in mineralized ground with fewer filters. More filters give more depth and better audio discrimination for targets located. But response is correspondently slower.

GROUND FILTERING (High Pass Filters or Differentiators): A DFX menu setting that allows a choice of how many High Pass filters will be used while searching. Needs to be closely balanced with SWEEP SPEED and RECOVERY SPEED for optimum performance.

GROUND FISHING: A slang term for metal detecting.

H

HALO: A geological soil condition manifesting an effect known as "Metallurgical Phenomenon". A metallic halo is generated over time by the combination of acids and water in the soil leaching minute particles off a metal target into the surrounding soil.

HAND HELD: A metal detector configuration whereby the operator holds a shaft or handle that supports the searchcoil and control housing. Also called a pole mount. See BODY MOUNT for contrast.

HEAD: See SEARCHCOIL.

Hz or HERTZ: Cycles per second. See also FREQUENCY.

HIP MOUNT: See BODY MOUNT.

HOT ROCK: A rock that contains a higher or significantly different concentration of nonconductive ground minerals than the surrounding ground to which the detector is balanced. A metallic (positive/conductive) response will be heard in the motion and non-motion modes and a null or negative drop in threshold is heard in the All-Metal ground balanced mode over these rocks. Ironstone is a typical hot rock. VDI number response is +95.

HOT ROCK REJECT: A DFX menu setting that allows for varying degrees of detector response rather than a typical total Accept or total Reject

I

ICON: A graphic representation of metal targets on a display, e.g. picture of a Nail, Foil, Pull Tab, Screw Cap, Penny or Dime.

ICONS: A DFX menu setting that, when ON, allows you to look at selected Icons for possible targets detected. Many turn this setting OFF, once they feel familiar with target VDI numbers. Doing so tends to limit visual distraction and increase the overall display response speed.

INDUCTANCE: An object that conducts electricity easily (is inductive) is slow to react to changes in the current. You can think of inductance as a deep river: Change the amount of water flowing into the river and it takes some time before you see a difference.

IRON STONE: A rock heavily laced with iron.

ISOLATOR: A nonmetal stem that attaches the searchcoil to the control shaft eliminating metallic interference in the detection pattern. On some detectors, the entire lower shaft is made of a nonmetal substance.

J

K

kHz or KILOHERTZ: 1 kHz = 1000 cycles per second. See also FREQUENCY.

L

LCD or LIQUID CRYSTAL DISPLAY: Used on a metal detector as a graphic visual (digital) indicator. Serves the same as a meter/needle (analog) indicator.

LEARN ACCEPT/REJECT: Two separate DFX menu settings that, when ON, allows targets swept beneath the coil to be Accepted or Rejected by the VDI number the detector then reads. ACCEPT is very useful when searching for a specific target only, such as one of a pair of earrings. REJECT is used when a specific trash target needs to be discriminated out. These settings MUST be turned OFF after learning a target or detector will continue to Accept/Reject EVERY single target it encounters!

LIGHT EMITTING DIODE or LED: A semiconductor that produces an illuminated visual response, often on a display.

LOOP: See SEARCHCOIL.

M

MATRIX: Refers to the total volume of ground penetrated by the transmitted electromagnetic field-which may contain varying amounts and combinations of minerals, metals, salts and moisture.

MD'er / MD'ing: Recognized word contractions for Metal Detectorist or Metal Detecting.

MENU: A Series of listings and/or prompts on a visual display designed to aid the operator in feature or program selection.

METAL: Metallic substances such as iron, foil, nickel, aluminum, gold, brass, lead, copper, silver, etc.

METAL DETECTORIST: A person operating a metal detector in the field. Preferred by many over Treasure Hunter, Th'er, Ground Fisher, Sand Crabber or Beeper Swinger. Contracts to MD'er.

METER: A detector component that provides visual information to aid in target identification. Meters feature either an LCD (digital) or needle (analog) indicator which may display intensity of signal, target depth, target identification, type of metal, or battery condition.

MICROPROCESSOR: An electronic component that can be programmed to perform certain electronic functions.

MINERAL-FREE DISCRIMINATOR: Any metal detector that can reject or ignore trash metals while simultaneously balancing ground mineralization.

MINERALIZATION: Conductive or nonconductive components found in the soil.

MINERALIZED GROUND: Any soil that contains conductive or nonconductive components.

MIXED MODE: A DFX menu setting that employs a hybrid All-Metal (DC non-motion, non-discriminate, detect everything) mode to work simultaneously with a discriminate (AC motion discrimination) mode at the same time. Used by "pros" for extra depth. When used with V.C.O. and TONE ID by experienced detectors many desirable targets can be found in areas "picked clean" by others before them.

MODE: A condition of operation, selected by the operator, for specific desired functions (e.g. All-Metal or Coin-Jewelry).

MODULATION: A DFX menu setting that produces (when ON in motion modes) different volume levels based on target depth. Can save time in pinpointing for depth. Not a good setting for those with hearing problems.

MOTION DISCRIMINATOR: A detector type that requires searchcoil motion to activate its simultaneous ground balance and discriminate functions. See also MINERAL-FREE DISCRIMINATOR and VLF/TR.

MOTION MODE: Any mode that requires searchcoil loop movement to respond to metals.

N

NARROW (or TIGHT) RESPONSE: A target that produces an audio response so short that pinpointing is almost not needed.

NEGATIVE GROUND: Soil that contains non-conductive minerals that have a negative or nulling effect on an air-tuned threshold.

NEUTRAL GROUND: Soil that has no non-conductive nor any conductive mineral properties. Lacks any detectable mineralization whatsoever.

NICAD, NiCa, Ni-Cad or Nickel-Cadmium: A rechargeable type of battery cell.

NON-FERROUS: Metals not made of iron. Metals of the precious class (i.e., gold, silver, copper, etc.)

NO-MOTION MODE: Refers to any mode of operation that does not require searchcoil motion to trigger target response. Also called non-motion.

NOTCH, NOTCH ACCEPT or ACCEPT: Operation whereby all target responses are "tuned-out" except those the instrument is adjusted to accept in the desired notch "window."

NOTCH DISCRIMINATION: Filtering circuitry that allows a "window" of desirable targets to be accepted within the entire rejection range of unaccepted targets, i.e. rejecting nails, foil and pull tabs while accepting nickels and gold rings of the same conductivity. This circuitry can also be adjusted to reject All-Metal targets while accepting only a specific conductivity range.

NOTCH LEVEL: A control used to select the target level or target conductivity that the notch filter will act upon.

NOTCH REJECT or REJECT: Operation whereby all targets within the notch width at a chosen notch level will be discriminated or "tuned-out."

NOTCH WIDTH: A finite discrimination range of target conductivities (window) at the chosen notch level.

NULL: The zone just below audible threshold in metal detector tuning. This also refers to the momentary drop or quiet response of threshold sound as the searchcoil passes over a discriminated or rejected target.

O

OVERLAP: The measure of searchcoil swing advance not greater than the searchcoil's physical diameter. Also refers to the technique of maximum ground coverage while coil sweeping.

OVERLOAD: A situation in which too much information is coming too quickly for circuitry to discern and react. Can occur when sensitivity settings are too high for ground conditions or detector settings as they are. Can also be caused by targets being too large (buried car), too close (base of steel light pole) or too conductive (high power lines or another detector).

OVERSHOOT: A common false signal heard as the searchcoil passes over a rejected target when using a no-motion All-Metal mode in conjunction with automatic retuning. Excessive tuning restoration pushes the audio above threshold level creating a positive response at the edges of target detection periphery.

P

PHASE / PHASE RESPONSE: The length of time between eddy current generation sustained on a metal's surface from the searchcoil transmitter coil and the resultant secondary electromagnetic field effect on the searchcoil's receiver coil. Related to target's conductivity.

PHASE SHIFTING: The difference in timing between the transmitter coil's frequency and the frequency of the target object. Phase shift provides VLF metal detectors with a capability called discrimination. Since most metals vary in both inductance and resistance, a VLF metal detector examines the amount of phase shift and compares it with the average for a particular type of metal.

PINPOINTING: Finding the exact center of a target location with respect to a searchcoil's designated center. Accomplished by interpreting the centers of audio response width in perpendicular directions or scans. Can also refer to the use of a hand held probe. See DETUNING.

POSITIVE GROUND: Soil that contains conductive minerals or moist salts that have a positive or upward effect on an air-tuned threshold. Can create difficult searching for some metal detectors.

PULSE INDUCTION or PI: A mode of operation where the transmitter coil circuit sends short powerful bursts (pulses) of current into the ground just before it quickly shuts down. Each pulse generates a brief magnetic field. When the pulse ends, the magnetic field reverses polarity and collapses very suddenly, resulting in a sharp electrical spike. This spike lasts a few microseconds (millionths of

a second) and causes another current to run through the coil. This current is called the reflected pulse and is extremely short, lasting only about 30 microseconds. The eddy currents dissipate immediately from poor conductors such as wet salt sand and ground minerals. Precious metals hold eddy currents because they are better conductors. When the receiver circuit quickly comes back on, it picks up the returning signal from metal; the eddy currents in the ground minerals have already disappeared in this short time. Unlike VLF, PI detectors may use a single coil as both transmitter and receiver, or they may have two or even three coils working together. PI detectors have poor discrimination but work better than VLF detectors in salt-water and can find very deep metals better.

PREAMP GAIN (Signal Balance): Similar to a Sensitivity Control, it's a DFX menu setting that adjusts the detector's sensitivity to the ground or target. Used to promote stability and performance. Higher settings affect both the A.C. (motion, discriminating) and D.C. (All-Metal, non-motion) SENSITIVITY. For maximum depth tune to highest setting possible without causing OVERLOAD or unstable operation. Using MIXED MODE or AUDIO DISC OFF may not allow as high a setting as otherwise. DFX should be re-ground balanced after any Preamp Gain change.

PROSPECTING: Searching for valuable minerals, such as gold nuggets.

Q

QUICK RESPONSE: A short time period between metal target sensing and a peak audio/visual indicator appearing. Usually associated with all frequency ranges of TR detectors. See RECOVERY SPEED.

R

RATCHET PINPOINTING: A DFX menu setting that allows automatic detuning of the loop while pinpointing to help find center location of a target. Usually trigger activated.

RECEIVER COIL: On a VLF metal detector this is the inner coil loop contains another coil of wire. This wire acts as an antenna to pick up and amplify frequencies coming from target objects in the ground.

RECOVERY SPEED: A DFX menu setting that speeds up a targets normal response time, thus several targets close together can be detected separately. Use faster speeds for trash areas (but you'll lose depth). Fast speeds should NOT be used unless necessary. Use slower speeds for less trashy areas to improve detection of deep targets and get better discrimination of shallow targets. Should always be used in a tri-setting coordination with SWEEP SPEED and especially GROUND FILTERING settings. See SWEEP SPEED and GROUND FILTERING.

REJECT / REJECTION: An indication of target nonacceptance by a null (silence) in threshold or broken sound while operating in a discriminate mode.

RELIC HUNTING: Searching for items of historical value, such as weapons, ammunition, tools, or buttons used in a war.

RESISTANCE: An object that does not conduct electricity easily (resistive) is quick to react to changes in the current. Using a water analogy, resistance would be a small, shallow stream: Change the amount of water flowing into the stream and you notice a drop in the water level very quickly. See INDUCTANCE for contrast.

RF-TWO BOX: A radio frequency detector having its own transmit and receive windings separate and in an orthogonal configuration. This detector is capable of deep large object detection while naturally ignoring small targets such as nails and individual coins. Not common or even known to most hobbyists.

S

S.A.T. SPEED: A DFX menu setting that allows for a self-adjusting threshold (auto-tune). Works in the no discriminate or mixed-mode only. Has no effect in the discriminate (coil in motion) mode.

SCAN: 1) The effective searchcoil detection width or 2) The back and forth passing movement of the searchcoil over the ground.

SCRUBBING: The searchcoil is pressed and held in contact with the ground while searching to maintain even audio threshold. With newer detectors, this technique is often used to gain depth (especially on grass, leaves or pine straw).

SEARCHCOIL: A circular (or other shaped) plastic housing containing single or multiple transmit and receive windings (wire coils) in a specific configuration. A searchcoil emits and receives signals from the ground and metal targets. Also called a coil, loop, head or antennae.

SEARCH COIL CABLE: An electro statically shielded cable of conductors (wires) that convey signals to and from the searchcoil and control housing.

SENSITIVITY: 1) The intensity of the signal received from the search coil. 2) The measure or capacity of a metal detector to perceive changes in conductivity within the projected detection pattern. 3) The changing of control settings to make the searchcoil more receptive to a chosen target. 4) Also the knob that controls the coil sensitivity. Generally, the more sensitivity a detector can smoothly provide, the more depth it will achieve in sensing targets.

SIGNAL: An audio response or visual (digital or analog) display alerting the operator that a target has been detected.

SIGNAL BALANCE: A setting that selects the intensity of the signal received from the search coil. See PREAMP GAIN.

SIGNAL WIDTH: The total distance of ground an audio signal is sustained during searchcoil travel or scans.

SILENT SEARCH: Refers to detectors capable of producing a target signal while operating below the threshold audio. Also called Silent Operation. The detector is silent (not even threshold) until a target is detected.

SLOW MOTION: A description of searchcoil speed required to operate the motion discriminate mode.

STABILITY: The ability of a metal detector to maintain a smooth predictable performance. Also, the ability to maintain manually adjusted tuning threshold despite the effects of outside interference. See also DRIFT.

SURFACE AREA: Refers to the area of a target closest to the searchcoil where eddy current generation can take place.

SURFACE MOUNT: The art of mounting electronic components on the surface of a printed circuit board rather than using the "through board" method. This allows more technology in a much smaller space with much higher tolerances.

SWEEP: The motion employed in moving the searchcoil across the ground. See SCAN (def. 2).

SWEEP SPEED: A DFX menu setting that adjusts the width of the target signal to be analyzed. In competition or in open non-trashy areas a higher speed (narrower sample window) is desired while in older or trashy areas a slower speed (wider sample window) is

needed for a more thorough and accurate search. Sweep speed is highly interactive and interdependent upon RECOVERY SPEED and GROUND FILTERING settings. All must be coordinated for best results.

T

TARGET: Refers to any object that causes an audio or visual response in a detector.

TARGET MASKING: When large sized or high concentrations of trash metals drive the threshold into the null zone suppressing weaker, positive responses from deeper or smaller targets.

TARGET RESPONSE: See SIGNAL.

TARGET VOLUME: A knob or menu setting that provides the desired loudness of a target response.

TEN-TURN: A control that can be manually rotated ten times to cover the full electrical range of the function. Usually associated with tuning or ground balance function. Similar to a fine tune adjustment on an FM radio.

TEST GARDEN: A mapped plot of buried targets intentionally planted at various depths to aid in learning characteristic target responses and in comparing metal detector performances under a given ground mineral content. Also called test plot or test bed. (NOTE: Due to an effect known as "Metallurgical Phenomenon" or "halo" newly buried coins are difficult to detect. If you bury them deep don't expect to locate them for a while until they have had time to react with the acids in the soil and form an electromagnetic halo.)

TH'er, TH'ing: Contractions for treasure hunter and treasure hunting. Also known as MD'er or MD'ing. See TREASURE HUNTING.

THRESHOLD: Arguably, this is the most misunderstood term in metal detecting. It's the continuous tone, or background hum, that 1) establishes a reference point for tuning the detector so it can be ground balanced, 2) sets the audio level for pinpointing targets and 3) determines the minimum (lowest) sound level for deep targets in the discriminate mode.

TID: Target Identifier Display. See VISUAL ID.

TONE (AUDIO FREQUENCY): Menu setting that sets the tone (pitch) of the threshold (background hum).

TONE ID: A DFX menu setting that can help in target I.D. by assigning each VDI # a distinct tone (pitch). For example: low tones and #'s for iron and junk, medium tones for nickels or pull-tabs, and high tones for silver and coins.

TRAC INHIBIT: A DFX menu setting that prevents Autotrac ground tracking/balancing (or AGB) when over a possible target during detection. Helps prevent the masking or deletion of an actual target due to balancing of metal corrosion around a target. Should be OFF if looking for targets that don't corrode such as gold prospecting.

TRANSMITTER COIL: On a VLF metal detector this is the outer coil loop of the searchcoil. Within it is a coil of wire. Electricity is sent along this wire, first in one direction and then in the other, thousands of times each second (measured as kHz) to produce an electromagnetic eddy on metallic targets in the soil. See FREQUENCY.

TRANSMITTER-RECEIVER / TR: Term describing method of operation of early or primitive detectors. Some manufacturers still produce this type of detector. Electromagnetic field distortion caused by mineralized ground interferes with depth penetration as this type of detector does not ground compensate. It does balance conductive salt-water effects so; it is primarily used in salt water and on low mineral salt-water beaches or low mineral inland locations.

TREASURE HUNTING: A sub-group of the broader metal detecting hobby, it's using historical, biographical, geographical, topographical, geological and even genealogical research to locate and then (utilizing a metal detector) find: caches of gold, silver or anything else thought to have been hidden or lost.

U

V

V.C.O.: A DFX menu setting where a Voltage Controlled Oscillator can make a target's audio response increase in volume and pitch as the coil approaches target's center. Is used in All-Metal or Pinpointing (squeezed trigger) modes.

VIEWING ANGLE: A DFX menu setting that makes the display easier to see at different temperatures.

V.D.I.: Visual Display Image. Whites Spectrum detector graphic showing numbers, graphs or Icons. See VISUAL ID.

V.D.I. SENSITIVITY: A DFX menu setting that determines how intense the graphic response to a target will be. Lower setting offers fewer but more reliable displays, but some deep targets may not give a response. Higher settings give more display indications but aren't as reliable. Any level setting over 85 will display as a three (instead of two) digit number for more resolution. This is helpful in distinguishing similar targets like nickels, rings and pull tabs.

VISUAL DISC: A DFX menu setting that, when ON, prevents Rejected VDI numbers and their associated Icons from being displayed. When OFF, all VDI numbers are displayed when they are targeted. Useful in clearing display of information you are not interested in.

VISUAL ID: A feature in which a visual (or graphic) indication is produced to help identify the target, its depth and possible size on a display. Also called VID, TID, VGI or VDI.

VGI: A Visual Graphic Image. See VISUAL ID.

VISUAL INDICATOR: A meter, digital or analog that signals a target's presence.

VLF (Very Low Frequency): A metal detector that normally operates in the 3-30 kHz frequency range. Also known as Induction Balance, it is probably the most popular detector technology in use today. In a VLF metal detector, there are two distinct coils: the Transmitter (outer) and Receiver (inner) coils. Also see FREQUENCY.

VLF/DISC: Term associated with detectors capable of mineral-free operation in both the Discriminate and All-Metal modes.

VLF/TR: A class of detector that can operate in both the All-Metal, Ground Balance mode and the No-Motion Discriminate, Non-Ground Balance mode.

W

WIDE RESPONSE: A target that produces an audio signal over an area wider than the searchcoil diameter, as opposed to Tight Response which produces a signal much smaller than the coil diameter.

WIDE SCAN: A coplanar searchcoil with two "D" shaped transmit and receive windings (coils) positioned back to back and overlapping. This coil type is capable of detecting a target across at least its full diameter. Also called DD, 2-D or Double-D.

X

Y

Z

ZERO DISCRIMINATION: Used to describe detectors whose discrimination control allows the acceptance of All-Metals at zero setting.