Vision Expert Menu Instruction Manual (Rough Draft)

LIVE CONTROLS, MENU, and EXPERT MENU, are all different windows looking into the same set of features or adjustments. Progressively greater detail and option choices are offered. In this way keeping rarely adjusted features out of the way during normal searching yet allowing experts quick access from either LIVE CONTROLS, or Menu.

One can quickly and easily access the Expert Menu from a search mode. Simply press Menu Twice ARROW down to Expert Menu, and press ENTER.

Remember, once in any menu, pushing the toggle on the grip forward provides "Help Bubbles" regarding that particular highlighted feature.

All Live Control Options, Six Block Menu Options, and Expert Menu Exclusive features, can be adjusted using the Expert Menu.

Many personal preference choices within the EXPERT MENU will automatically reconfigure the Live Controls and Six Block Menu to accommodate those preferences. For example different methods of adjusting the Discrimination in the EXPERT MENU will automatically bring that specific method out to the Live Controls and Six Block Menu. Vision intuitively perceives your personal preference choices as "the way you like it" and accommodates by automatically utilize those preferences.

All custom changes automatically save and return for that specific Program. However, unless COMMON and then Exclude is used during a SAVE sequence, changes made to one Program (COIN) are not usually shared be any other Programs (COIN & JEWELRY). COMMON and then EXCLUDE allows implementing the preferences you choose to indicate are your common desired settings, during a Manual SAVE sequence.

Example, normally if the volume is increased in COIN, the COIN & JEWELRY Program volume is not automatically increased. One would either have to manually increase the volume within each and every specific Program, or use the COMMON and then EXCLUDE features during a manual SAVE sequence to dictate your custom selected Volume. One may want different volume levels for different Programs or uses. However, one may want all Programs to have the same volume level. Thus the reason for the COMMON and then EXCLUDE feature. More on COMMON under SETUP.

The exception is global options such as Backlight and Metric units. Some options (because of the way they are normally used) are not included in regular manual Save sequences. Change them once in one Program and they remain at that setting for all Programs. They stay changed for all programs until manually changed back. Choosing Metric Units or Backlight for example.

All or part of the following options are treated as "global selections" exempt from the standard Save sequences;

Metric Units, Share, Wireless Selections, Frequency Offset, (Menu – Size, Expert, Wrap, Top), (Control - Size, Wrap, Min, Hide) Battery Type, Auto Power Off Time, Key click, Effects, Audio Samples, Status Normal, Auto Track Report, Bookmarks, Backlight.

Most users will not notice because of the way these selections are used. However, some will, specifically, a person cannot save programs with different Backlight selections. One Backlight selection only, for all programs. Similarly, the Metric Units setting will hold at the manually selected level through all Programs and Save sequences.

If you find your custom setting automatically carries through all programs, and or, you have difficulties setting an option differently among different programs, that option is part of the "global selection" exempt from normal Save, listed above. A manual selection will be required with no differences allowed between different programs.

Performance settings, levels, choices, are active (performing) regardless of Expert Menu being activated (accessed) or not. Every Program is utilizing the expert exclusive features at their factory set choices or levels.

In many sections of the Expert Menu, use of the MENU/TAB key to select among several options is required. As well, if you are selecting among options with the Up & Down keys, once at a multiple choice option, the ARRROW Left & Right are then used to make that selection.

A good way to remember the key to use…

If you are using Up & Down Arrows to find options, ARROW Left & Right are often used to make a specific adjustment highlighted within an adjustment bar or rectangle, side to side (horizontally).

MENU/TAB is used to select between options every time you see a CANCEL or EXIT option on the lower right side of display and/or a secondary rectangle of data for adjustment.

Once in the Expert Menu, under Configure, under Menu, "Expert Only" can be selected, press ENTER to activate "X".

"Expert Only " eliminates the secondary Six Block Menu, making the expanded "Expert Only" Menu the primary and only Menu (live controls still appear). When MENU is pressed once, Expert Menu appears.

To return to simplified Six Block Menu, going back to Configure, Menu, select Expert Only, and press Enter to deselect. Six Block Menu returns and pressing MENU twice is, once again, required to access Expert Menu.

Additionally, if the Color Theme CUSTOM is selected, and Expert Only is also selected, custom color mixing options then appear throughout the menu system. In other words you can then create or mix your own custom colors to suit any color perception issues common among male population.

Expert Menu

Expert Menu is arranged into nine categories most with additional sub-menus.

Summary

(1). Programs

A. Select – *(Choose a Current Program to use or search with).*

B. Save – *(Save Custom settings you have selected to a Program & Name It).*

C. Restore/Load – *(Bring a Program out from Library to Live Controls & Menu).*

D. New/Copy – *(Create an entirely new Program, or bring one out from the Library).*

E. Rename – *(Give an Existing Program a New Name).*

F. Erase – *(Delete a Program).*

G. Setup – *(Substitute custom setting categories from Common, to a Program being SAVE-ed, or Add a Program Comment (custom Help Bubble).*

H. Share – *(Transmit or Receive Programs from one Vision unit to another).*

I. Library – *(Add, Re-name, Delete, Programs from the Library).*

(2). Discrimination

A. Visual Reject – *(Select if rejected VDI numbers appear, or do not appear, on display).*

B. Bottle Cap Reject *– (Adjust Discriminate break up on iron/steel).*

C. Hot Rock Reject – *(Adjust the response of +95 Hot Rocks).*

D. VDI Selected By – *(Select Different Ways of Setting or Selecting Trash Rejection or Discrimination).*

E. Icons – *(Select Icon Sets and/or add custom word icons for specific VDI ranges.)*

(3). Sensitivity

A. Rx Gain – *(Preamp Gain, Receive Signal Intensity).*

B. Tx Boost – *(Boost the Transmitter).*

C. Discrimination – *(AC or Motion Discrimination Sensitivity).*

D. All Metal – *(Non-motion Non-discrimination and Pinpoint Sensitivity).*

E. Sensitivity Live Control Zoomed – *Probe provides a Signal %, Noise %, and reasonable Rx Gain recommendation.*

(4). Audio

A. Target Volume – *(How Loud a Metal Beeps, different settings allowed for each sound devicse).*

B. Audio Threshold – *(Continuous Background Hum During Searching, different settings allowed for each sound devices).*

C. Tone – *(Audio Tone or Pitch, different settings allowed for different sound features and sound devices).*

D. Search Audio – *(Audio Mode Selections, Discriminate, All Metal, Mixed Mode).*

E. Pinpoint Audio – *(Pinpoint Options, VCO Pitches, Ratchet Detuning).*

F. Wireless Headphone – *(Activating and adjusting Wireless Headphone).*

(5). Frequency

A. Three Frequencies (Primary) - *(Transmit & Receive thee Primary Frequencies).*

1. Best Data – (Vision chooses to use only the information which provides the strongest signal or response).

2. Correlate – (Vision calculates signal considering the information from all primary frequencies).

VDI (Correlate)

a. Span Limit – (How different a signal can be between frequencies to still be considered a good target).

b. Wrap Limit – (How far beyond +95, wrapping around into the -90 VDI range, a signal can be and still be considered a good signal).

B. Salt Compensate *– (Special Multi-Frequency Salt Subtraction).*

1. Best Data – (Vision chooses to use only the information which provides the strongest signal or response).

2. Correlate – (Vision calculates signal considering the information from all primary frequencies).

VDI (Correlate)

a. Span Limit – (How different a signal can be between frequencies to still be considered a good target).

b. Wrap Limit – (How far beyond +95, wrapping around into the -90 VDI range, a signal can be and still be considered a good signal).

C. 2.5 kHz – *(Single 2.5 kHz Frequency Only).*

1. Normalize – (Calibrates 2.5 kHz to indicate traditional VDI numbers).

D. 7.5 kHz *– (Single 7.5 kHz Frequency Only).*

1. Normalize – (Calibrates 7.5 kHz to indicate traditional VDI numbers).

E. 22.5 kHz *– (Single 22.5 Frequency Only).*

1. Normalize – (Calibrates 22.5 kHz to indicate traditional VDI numbers).

F. Frequency Offset – (Slightly Off Frequency to Avoid Interference).

(6). Ground Tracking

A. Autotrac

1. Report – (Indicate on Display When Ground Tracking Adjustments Occur and Indicate Increasing or Decreasing Levels).

2. Inhibit – (Restrict Ground Tracking or Not During Hot Rock Detection).

3. Speed – (Track Faster or Slower).

4. Offset – (Balance & Track Ground "+ or –" Perfect, to Enhance Small Targets and/or Avoid or Enhance Ground Signals).

B. Trac-Lock – *(Lock Ground Tracking, or Use Manual Non-Tracking Ground Balance).*

1. Offset – (Offset Locked Ground Balance "+ or –" Perfect, to Enhance Small Targets and/or Avoid or Enhance Ground Signals).

C. Ground Tracking Live Control Zoomed – *Provides a Ground Probe for measuring and comparing a target, or the ground's, phase, phase angle, and signal strength, at each primary frequency in use.*

(7). Filter & Speed

A. Search – *(Choose Search Mode Characteristics)*

1. Ground Filter – (Adjust ground filtering to optimize for regional ground conditions and search coil sweep speeds).

2. Recovery Delay – (Speed or Slow target signal processing between multiple targets, within any Ground Filter selection).

3. SAT- (Self Adjusting Threshold or Automatic Threshold Maintenance).

B. Analysis – *(Choose Analysis Mode Characteristics, Toggle On Grip Forward away from Grip).*

1. Match Search - ("If Selected "X", Same Settings as Search", If Not Selected "empty box", Selecst Different Settings for Analysis Compared to Search).

a. Ground Filter – (Adjust ground filtering to optimize for regional ground conditions and search coil sweep speeds).

b. Recovery Delay – (Speed or Slow target signal processing).

c. SAT- (Adjust "Speed or Slow" Self Adjusting Threshold or Automatic Threshold Maintenance).

(8). Configure

A. Metric Units *– (Choose Metric Depth and Measurements).*

B. Backlight – *(Select Backlight Level).*

C. Color Theme *– (Select A Color Theme For the Display).*

D. Sound Effects *– (Select and adjust the Level, Volume, tone of sound effects, key licks, warning tones).*

E. Live Search Screen *– (Select Different Ways to Present Information On The Display, Search, Pinpoint, Analysis, and Status Line which indicates options in use and their status).*

F. Live Controls – *(Select and Arrange Live Controls across bottom of search display).*

G. Menu – *(Select Different Menus Options).*

H. Battery – *(Select Different Battery Options, Types, Auto Power Off Time).*

(9). Information

A. Owner Registration *– (Embed your personal information deep within vision software).*

B. Battery – *(Manually check the current battery voltage)*

After the DISCRIMINATION section it will be assumed a person knows how to access and navigate the MENU.

(Navigation Graphic, Alan/Mary)

To Review…

Press MENU (twice), ARROW DOWN to EXPERT MENU, and press ENTER.

ARROW to category or selection.

ENTER always Activates, Deactivates, Enters or expands selection.

ON/OFF selections "X" indicates that options is selected or ON, empty square indicates that option is not selected or OFF.

Discriminate Edit selections, "X" indicates accepted, Empty Square rejected.

ARROWs always adjust a bar, numbered level, or name. If already using ARROWs UP & DOWN, often a rectangle selection highlighted requires ARROW RIGHT & LEFT to select.

MENU/TAB, tabs (moves) between limited selections, CANCEL, EXIT, or secondary adjustment data rectangle. If ARROWs do not produce the movement you want, use MENU/TAB.

Squeeze and release toggle on grip once, twice, or three times to back out or exit.

(1). Programs

Summary

Select – (Choose a Current Program).

Save – (Save Custom Settings to a Program and Name It).

Restore/Load – (Bring a Program out to Live Controls & Menu).

New/Create – (Create a new Program).

Rename – (Give an Existing Program a New Name).

Erase – (Delete a Program).

Setup – (Exclude Settings from SAVE or Add a Program Comment).

Share – (Transmit or Receive Programs).

Library – (Add, Re-name, or Delete, Programs from the Library).

Programs Detailed

A. Select – Choose a Program.

1. ARROW down to SELECT and press ENTER.

2. Use ARROW Up & Down to select the PRORAM you want to use, then Press ENTER.

3. Squeeze and release toggle on grip twice to begin searching using that program.

B. Save – Save changes you have made to any program as that programs new underlined defaults and standard starting settings.

1. Make the desired changes to a Program.

2. Press Menu twice, ARROW to EXPERT MENU, and press ENTER.

3. Press ENTER to ENTER PROGRAMS, ARROW down to SAVE and Press ENTER.

4. Use ARROW Up & Down to select the PROGRAM you wish to SAVE all changes as underlined defaults and standard settings.

5. Use MENU /TAB to Tab between selecting a program, selecting the Save box, and/or selecting Cancel.

6. Tab to SAVE and press ENTER to save changes made to that listed program.

7. Squeeze and release toggle on grip to exit.

8. Vision has copies of all the original factory programs in it's Library should anyone ever want to resurrect them. The modified and Saved program automatically becomes the default version immediately available from Live Controls and both Menus under PROGRAMS.

9. There is a limit to the number of Programs kept within the standard PROGRAM listings (Live Controls, Menu and Expert Menu). However, vastly more PROGRAMS can be kept in the Library. Keep the most used PROGRAMS under standard PROGRAMS, and store many more of the less often used PROGRAMS in the Library.

C. Restore Load – Used to return a program to the last saved manually saved defaults, or activate a program from the Library.

1. Select Restore/Load and press ENTER.

2. Use ARROWs Up & Down to select the program you are interested in restoring or loading. Remember, "+/- after program name indicates it is a modified version of the original factory program.

3. Press MENU/TAB to tab between selecting a standard program, selecting where to look for a Program, Saved Copy, Library, or an Active Program, ENTER, and ARROWS to make selections.

4. Use MENU/TAB to tab between Restore or Cancel (to cancel restore), ENTER to activate choice.

5. Squeeze and release toggle on grip twice to exit.

D. New – Create a new program and name using settings from an existing program.

1. Use MENU/TAB to tab between selections, ARROWs Up & Down to select vertically, and ARROW Left & Right to further select horizontally. ENTER to activate. Remember optionally when selecting a name pressing ENTER brings up a key-board and then arrows and enter to spell out that name.

E. Rename – Rename an existing program.

1. Use ARROW Up & Down to select the old program, then MENU/TAB to New Name and use all the ARROWS (or menu to bring up a key0-board) to spell out a new name, MENU/TAB to RENAME or CANCEL and activate selection with ENTER.

F. ERASE - Eliminate a Program from appearing in the normal MENU.

1. Select a Program and press ENTER, MENU/TAB to highlight Erase or Cancel, press ENTER to activate choice.

2. Copies of all the original factory programs are automatically stored in the Library and can be re-stored at any later date. If the available memory has not been overtaxed, Restore can also bring back erased programs.

3. Squeeze and release toggle on grip to exit.

G. Setup – Exclude settings from SAVE or add Personal Comments (custom help bubbles).

1. Exclude - Allows options for a selected Program to be excluded from normal SAVE sequences, instead reverting to the chosen COMMON levels or selections.

a. For example, exclude allows a person to set all audio adjustments levels once in COMMON and implement those levels during the manual SAVE sequence. If you always want a particular settings or selections the same, first select those preference in COMMON, then under setup, select EXCLUDE, ENTER, MENU/TAB to the categories to exclude with ARROW Up & Down, and then exclude with ENTER. Excluded sections revert to your COMMON choices.

2. Comment – Allows the addition of a personal custom comment for any specified Program (custom help bubble). A person may want to ad a custom comment to jog their memory for a rarely used custom option. Comments like "Use For River Park" for example.

a. Select Comment and ENTER. Select a program to add a comment too. MENU/TAB to Comment. Use ARROWS to spell out the comment you wish added or press ENTER to bring up a key-board then ARROWs to spell out comment, MENU/TAB to EXIT and press ENTER or Trigger to exit.

H. Share – Allows sharing of program settings both Transmitting (sending a program) to another Vision and receiving (getting a program) from another Vision.

1. Transmit – Send one or more of your programs to another Vision.

a. ENTER, select where to get the program and ENTER. MENU/TAB to SEND, ENTER. Wait until transmitting complete.

b. Note, the other Vision has to be set to RECEIVE.

c. From Library, ARROW to Library, ENTER, select specific program.

d. Channel, select a clear channel for Transmitting.

e. Speed, select the quickness the data is transmitted.

f. Power, select the strength of the transmitted signal.

2. Receive – Receive or accept a program from another Vision.

a. Arrow Left & Right to select either updating the programs you already have with new programs of the same name, or create (save) as new additional programs in your Library.

b. ARROW down to name, ARROW Left & Right to select either keeping the same name being sent or creating a new name for the program or programs being received.

c. Channel, select the same channel being used to send the program to you from the other Vision.

d. Menu/Tab to Start, wait for receive to complete, MENU/TAB to Exit, press ENTER.

I. Library – Storage for less often used programs.

1. Store – Take a program off your standard Live Control and Menus and store it in the library. Doing so makes room to place other programs on your Live Controls and standard Menu. Or a person may want to store all but a 2-3 programs in the library. There is a limit to the number of PROGRAMS that can be stored on the Live Controls and standard Menus. The Library provides storage for many more, less frequently used programs

a. ARROW to STORE and press ENTER.

b. ARROW Up & Down to select a program to remove from Live Controls and Menus and store in Library.

c. MENU/TAB to Create and press ENTER, or Cancel and press ENTER.

2. Rename – Rename programs already in the Library.

a. ARROW to Rename and press ENTER.

b. ARROW to select the Program you want to re-name.

c. MENU/TAB to New Name.

d. ARROW to spell out new name or press ENTER to bring up the key-board then ARROWS and ENTER to spell out new name.

e. MENU/TAB to Rename or Cancel, ENTER to activate choice.

3. Erase – Erase programs from the Library.

a. Select Erase and press ENTER.

b. ARROW to select the program to erase.

c. MENU/TAB to Erase or Cancel, ENTER to activate choice.

(2). Discrimination

Summary

Visual Reject – (Select "X" if rejected VDI numbers are not to appear on display, unselected "empty box" all VDi numbers appear on the display, rejected or not).

Bottle Cap Reject – (Adjust Discriminate break up on iron/steel).

Hot Rock Reject – (Adjust the response of +95 Hot Rocks).

VDI Selected By – (Select Different Ways of Setting Discrimination).

Icons – (Select Icon Sets and/or add custom word icons for specific VDI ranges.)

Discrimination Detailed

A. Visual Reject – When ON "X", rejected VDI numbers do not appear on the display. This reduces the number of VDI numbers that appear allowing better concentration on those accepted. When not selected (empty box), all VDI numbers appear on the display (rejected and accept) whenever a target measures that VDI number.

1. Select DISCRIMINATION and press ENTER.

2. ARROW to Visual Reject.

3. Press ENTER to select ("X") or de-select (empty square) Visual Reject.

B. Bottle Cap Reject – Adjusts how aggressively the Discriminator rejects bottle caps and other unusual alloyed iron that contains both

ferrous (iron) and nonferrous (non-iron) mixes. Old square nails for example.

1. ARROW to Bottle Cap Reject, ARROW left & Right to select discriminate audio break up aggression.

2. 20 is the most aggressive, offers the greatest degree of audio break up (sputter).

3. OFF is the least aggressive, offers the least degree of audio break up (sputter).

4. Caution, in some ground mineralization more aggressive settings cause the audio to break up (sputter) on all metal types.

5. Select a level that allows iron/steel to respond identifiably differently compared to good metal alloys.

C. Hot Rock Reject – Adjust the degree a target signal that appears to be a ground mineral abnormality (Hot Rock +95) are allowed to respond (beep).

1. At a setting of OFF all VDI numbers (including +95) are allowed to respond at their natural occurring single strength or intensity.

2. At a setting of -10 all signals that indicate in the Hot Rock VDI range (+95) are excluded from responding.

3. At settings between -9 and +10, all +95 Hot Rock signals are artificially reduced in their normal occurring strength or intensity compared to all other VDI numbers. The smaller the number (towards -9), the greater the reduction in the +95 VDI number signal strength or intensity.

4. If excessive +95 Hot Rock indications distract from identifying actual metals or obscure metal targets, select a more aggressive Hot Rock Reject level, (closer to -10).

D. V.D.I. Selected By – Allows four very different choices or methods regarding how to adjust the Accept and Reject (discriminate) status of the VDI target reference scale. The method chosen automatically appears on the Live Control and Six Block Menu.

1. Level - Provides a simple liner increase/decrease discriminate reject

setting (similar to a knob adjustment) increasing or decreasing discrimination.

a. ARROW to VDI Selected By and press ENTER. ARROW to Reject and press ENTER.

b. Use ARROW Left & Right to set the VDI number at which it, and all VDI numbers below (lower numbers) are rejected and all VDI numbers above (greater than) are accepted.

2. Icons – Select discrimination accept / reject by the current program icon scale.

a. ARROW to Icon and press ENTER. ARROW to EDIT and press ENTER.

b. ARROW among current Icons for that program, "X" = accept that Icon range of VDI numbers, Empty square = reject that Icon VDI range.

c. Press ENTER to change each Icon range accept or reject.

d. Squeeze and release toggle on grip to exit.

3. VDI – Select discrimination accept/reject by traditional individual VDI number.

a. ARROW to VDI and press ENTER. ARROW to EDIT and press ENTER.

b. ARROW to view current program VDI numbers accept or reject status. "X" = accept, empty square = reject.

c. Press ENTER to change highlighted VDI number between accept/reject.

d. Hold ENTER then ARROW to drag current accept/reject status through multiple VDI numbers (block edit).

e. Squeeze and release toggle on grip to exit.

4. Graph – Select discrimination accept/reject by using a graph.

a. ARROW to Graph and press ENTER. ARROW to Edit and press

ENTER.

b. Use ARROW Left & Right to view the current Program accept and reject settings accompanied with both the VDI number and icon.

c. Strait green line = accept, red dip = reject.

d. Press ARROW Up & Down to change accept or reject for each VDI number. Icon is used for reference.

e. Squeeze and release toggle on grip to exit.

5. Icons – Allows selection of the desired Icon set for the current program.

a. ARROW to Icons and press ENTER. ARROW to desired Icon set and Press ENTER. Filled circle indicates selection.

b. Park – Typical Coin, Jewelry, and common trash for that type of searching.

c. Relic – Typical Civil War icons, buttons, bullets, buckles.

d. Prospecting – Typical prospecting icons.

e. Custom – Adjust Icon VDI number ranges for existing Icons and/or Spell out custom word Icons for specific VDI number ranges.

1. ARROW to Custom and press Enter, ARROW to EDIT and press ENTER.

2. ARROW Down & Up to select an existing Icon with its listed VDI range and press ENTER

3. ARROW down to First VDI, ARROW Left & Right to select the first (lowest) VDI number desired to provide that Icon shown.

4. ARROW Down to Last VDI, ARROW Left & Right to select the last (highest) VDI number desired to provide that Icon shown.

5. ARROW Down to Second Icon and press ENTER.

6. ARROW Down & Up to select a second Icon for the same VDI range if a second Icon is desired. Or ARROW down all the way to Custom

Text and ENTER, then spell out custom Icon text with ARROWS and ENTER. Squeeze and release toggle on grip to exit

7. Delete Entry, Clear, Restore, Load standard Park, Relic, or Prospecting options, are also offered.

(3). Sensitivity

Summary

Rx Gain – (Preamp Gain, Receive Signal Intensity).

Tx Boost – (Boost the Transmitter).

Discrimination – (AC or Motion Discrimination Sensitivity).

All Metal – (Non-motion Non-discrimination and Pinpoint Sensitivity).

Sensitivity Detailed

NOTE: From this point forward, it is assumed navigation is mastered.

A. Rx Gain - (Formally called Pre-Amp Gain) Dramatically adjusts the search coil receive signal prior to entering the electronic circuitry for signal processing (pre-amp). Sizing the search coil signal allows optimum noise rejection from both external electrical noise and ground minerals and thus optimizes detection depth. Constant OVERLOAD signals (not over a target) indicated by a low pitch audio beep and display OVERLOAD indication require a decreased Rx Gain setting. Smooth, stable, predictable results and little or no overload, suggest a higher Rx Gain setting might be usable in that area.

Probe (Sensitivity Zoomed).

1. When the Sensitivity Live control is highlighted, pressing ZOOM brings up the standard Sensitivity Menu with a Probe section to the right hand side of the display. When Rx Gain is highlighted in the menu and with the search coil held steady over the ground, this probe provides the following information, which is valuable for comparing and choosing options (hold search coil steady a few seconds for true a

accurate measurement).

a. Signal = %. 15% indicates the Vision is losing 15% of the original transmitted signal. In other words 15% of the transmitted signal is being degraded through ground minerals, electrical resistance, and other natural occurring phenomena. It is extremely rare (not expected) if ever, to find an area where 100% of the transmitted signal returns. Electrical resistance, ground mineralization, and external noise common to all areas, normally and typical result in some degree of signal loss. Low signal levels indicate that the Vision is receiving less of the rebounding signal.

b. Noise = %. 0.0 indicates there is an unusually low degree of external noise (zero) in the area. With low external noise, and without adverse ground mineral conditions, greater degrees of Rx Gain are usually possible and recommended. High degrees of Noise suggest a different frequency method or Frequency Offset should be selected.

c. Best Rx Gain = 5. Based on the receive signal, noise, and all the current option selections, Vision is suggesting a reasonable Rx Gain setting. This recommendation will be different when different options are selected. For example it is expected to have Vision recommend a different Rx Gain setting using one multi-frequency option compared to another. As well, Optional Search Coils will change what Vision recommends as a reasonable Rx Gain setting.

d. Tip #1. – If Signal loss is significant (50% +), the ground is highly metallic (contains a lot of natural ground mineral/metal oxides). Conservative sensitivity settings, multi-frequency operation, and perhaps a smaller accessory search coil, is highly recommended for such areas.

e. Tip #2. – If noise is significant (50% +), electrical interference is a major issue for the area. Conservative Sensitivity settings, offsetting frequencies, selecting different frequency method or a signal frequency, and perhaps a smaller accessory search coil should be considered to see if a reduced Noise level can be achieved.

f. Tip #3. – Best Rx Gain setting is achieved by an electronic calculation intended as a helpful guide or reference. Always, humans can better interpret reasonable or workable settings. A setting lower than recommended may be needed to achieve smooth stable predictable results in some areas. In others areas, or for other operators, a setting higher than recommended may be usable.

B. Tx Boost – Dramatically increases the signal being sent (transmitted) to the search coil (loop). By increasing the transmit signal, the receive signal is also increased. In low mineralized ground, Tx Boost will increase detection depth, however, battery life is also reduced significantly, perhaps as much as 50%. Also requires new thought to Rx Gain, Discrimination, and All Metal sensitivity levels. If Tx Boost is not well suited to your ground type, constant overload tone and display, and lack of stable predictable results, will indicate turning Tx Boost OFF is required for that area

C. Discrimination – (Formally called AC or Motion Sensitivity). Adjust the sensitivity (responsiveness) of the Motion Discrimination search modes. The highest setting that will operate smooth, stable, and predictably provides the best detection results. Usually Discrimination Sensitivity is a close third to Rx Gain and Tx Boost in regards to reducing external electrical noise or interference.

D. All Metal – (Formally Called DC or Non-Motion Sensitivity). Adjust the sensitivity (responsiveness) of the All Metal and Pinpoint search modes. The highest setting that will operate smooth, stable, and predictably, and provides the best pinpoint results, is recommended. Reduced levels typically pinpoint better, however, do not detect or pinpoint as deep.

(4). Audio

Summary

Target Volume – (How Loud a Metal Beeps).

Audio Threshold – (Continuous Background Hum During Searching).

Tone – (Audio Tone or Pitch).

Search Audio – (Audio Mode Selections, Discriminate, All Metal, Mixed).

Pinpoint Audio – (Pinpoint Options, VCO Pitches, Ratchet Detuning).

Audio Detailed

A. Target Volume – How loudly a metal target "beeps". Different speaker devices always have different sensitivity levels. As well individual hearing varies between different audio devices. Therefore the ability to adjust volume to different levels for each of the possible speaker devices is offered.

1. Speaker – Adjust target volume external speaker provides.

2. Plug in Headphone – Adjust target volume through wire connected headphones.

3. Wireless Headphone – Adjust target volume through wireless headphones.

4. Balance – Balances target volume between all headphone left and right speakers. Many individuals have different hearing capabilities between left and right ears. Adjusting for this difference adds comfort and increases the abilities to interpret target signals.

B. Audio Threshold – How loud the Threshold (continuous slight hum) is heard during searching. Different speaker devices have different sensitivity or sound levels. As well individual hearing varies between different audio devices. Therefore the ability to adjust threshold to different levels for each of the possible speaker devices is offered.

1. Speaker - Audio Threshold provided by speaker.

2. Plug-In Headphone – Audio Threshold provided by plug in wire headphones.

3. Wireless Headphone – Audio Threshold provided by wireless headphones.

4. Balance – Balances Audio Threshold between all headphone left and right speakers.

C. Tone – Pitch or Audio Frequency.

1. Fixed Threshold – Adjust the tone, pitch, or audio frequency of the threshold hum heard without the VCO (Voltage Controlled Oscillation) option. By setting the Threshold tone differently compared to the

target tone below, greater ability to recognize target signals over threshold is provided. Typically a person would set the threshold tone lower pitched than the target tone, however, personal preference may dictate some prefer to set the threshold hum higher pitched than the target tone.

2. VCO Threshold – Adjust the tone, pitch or audio frequency of the threshold heard during use of the VCO option. VCO Threshold level is critical in determining the dynamic range (change in sound from minimum to maximum) when the VCO option is used.

3. Target Tone – Adjust the tone, pitch, or audio frequency of a target "beep". Again there is advantage to setting the target tone to a different level compared to the threshold tone making deep targets, which can produce softer beeps, more easily recognized over threshold.

4. Overload Tone – Adjust the tone, pitch or audio frequency of the overload alert indication. Select a level recognizable as unique compared to all other tone selections. When the search coil is too near a large metal, or the Sensitivity settings are set too high for the ground mineral conditions, the detection circuits become overwhelmed (saturated) making further target detection impossible. The Vision indicates with a special overload tone alerting the operator the search coil is either over a large metal (need to move to a different spot) or Sensitivity settings are set too high for the ground mineralization. Primarily, Rx Gain, and Tx Boost settings can be set too high for high ground mineralization. If it appears to be a large metal (isolated area overloads), sweep the search coil higher above the area and note the discrimination tone and display response to see if it is a metal worthy of investigation. If the Vision overloads over all ground in the area, reduce Rx Gain and/or turn off Tx Boost and try searching the area again. During overload condition target detection is not possible. Overload tone is apparent during a search mode by positioning the loop against a large metal (like the side of a truck).

D. Search Audio – Traditionally called MODES, Search Audio selects among a number of fundamentally different performing search characteristics or attributes.

1. Discrimination – Trash metal rejection search mode (Motion Discrimination) based on Programs Accept or Reject settings or custom

selections.

a. Threshold – Selects between searching with, or without, the Threshold hum recommended (to be heard) continuously during use of any search mode. Threshold indicates the edge of responding so that any increase (target response) is easily heard. Without Threshold is referred to as silent search. Traditional theory is that during silent search a target signal must be stronger, strong enough to reach and then exceed a normal threshold level, before it can be recognized (heard) as a target response "beep". Although modern circuitry diminishes silent search sensitivity concerns to some extent, most individuals can more easily recognize target signals compared to ground or electrical interference noises, when a continuous threshold is used.

Selecting no threshold is equivalent (the same as) adjusting Threshold to 0 in Live Controls, Six Block Menu, or regular Threshold adjustment.

b. Tone ID – Selecting Tone ID and pressing ENTER turns ON or OFF the Tone ID feature. When ON, targets that indicate progressively higher toward +95 on the VDI scale "beep" with a progressively higher pitch "beep". If accepted by the discrimination settings, iron type targets will produce the lowest pitch "beep", large silver will produce the highest pitched "beep". Nickels in the mid range indicate with the most medium pitched beep. Discrimination rejected target signals are still suppressed. With some practice, the pitch of the 'beep" immediately indicates the approximate VDI range of the target without noting the display. Tone ID is used to highlight target signal ranges of greater or lesser interest. Some experts rely heavily upon tone ID where as others never use it. It will dramatically increase the variation of the audio signals one needs to interpret. However, if ones patience and hearing can handle the highly variable audio tones, Tone ID has been proven to discern good targets among heavy and difficult trash.

c. Modulation –When selected deeper or weaker target signals produce a difference in the volume or intensity of the target response "beep". Deeper signals produce softer sounding "beeps". Most experts prefer modulation because the deeper (more likely to be valuable) targets are more easily recognized compared to shallower targets signals. When immediately recognized as a deeper target, not only are those targets given a higher priority to investigate, the discrimination and display information is more rigidly scrutinized as suspect. Deeper targets typically produce less reliable discrimination and display

information.

1. Range – Selects the modulation range, how weak a target signal must be to provide how much weaker audio 'beep". The range is selectable for three reasons;

a. First, ground mineral conditions vary how modulation performs. A setting in low mineral grounds will not provide the same results in high mineral grounds. 0 provides very little change in 'beep' volume or intensity in low mineral grounds. 5 will provide the largest variable in "beep" volume or intensity in low mineral grounds.

b. Secondly, Some experts prefer modulation that will provide a gradual declining scale as target signals are found deeper into the ground. Others prefer that only the deepest targets provide any declining "beep" volume or intensity.

c. Third, ground mineral anomalies (small hot rocks) can cause a weak signal response. By adjusting modulation, quite operation can often be achieved in difficult ground conditions.

2. ALL Metal – Provides for searching when all metal types are desired, no trash metal rejection. Even if custom discriminate settings are used to accept all VDI numbers from -95-+95, it is still not the same as selecting this true all metal mode. All metal modes require no or very little search coil movement to respond to metal (depending upon SAT settings) and tend not to respond to many of the Hot Rocks or ground mineral anomalies that do typically respond in the Discrimination (motion) search mode. When searching for all metal types, or when searching a difficult area of many Hot Rocks, All Metal is a better search mode. Display still provides trash rejection information. All Metal causes the audio to respond to all metal types. Although minimized by modern circuitry, all metal is believed to detect deeper than Discrimination, however, is not as user friendly. Deeper target signals are always significantly weaker responding, lower volume or intensity 'beep'. Stability is typically not as smooth compared to Discrimination, more susceptible to both ground and external electrical noise.

a. VCO – Adds the VCO (Voltage Controlled Oscillator) to the All Metal search mode. When ON, VCO provides a progressively higher pitch 'beep" as the signal strength progressively intensifies. Target center, multiple targets near each other, and deep targets, become significantly easier to recognize and attract attention for further

display indication consideration.

b. Mixed Mode – Selects and chooses options for a highbred mode which combines both Discrimination and All Metal mode characteristics and performance. During search coil sweeps, Discrimination is the active search mode. With slowed search coil movement, All Metal mode automatically becomes active. Sweep slowly (all metal) then speeding up directly over the target (for discrimination) or sweep normally (discrimination) then slowly over specific targets (all metal).

c. Tone ID – Adds the Tone ID feature specifically to the discriminate portion of the Mixed Mode. Again some experts rely heavily and very successfully on Tone ID to weed out good targets among heavy trash. However, it does take a special degree of concentration, patients, and tolerance for high degrees of audio pitch variations and interpretation.

d. Modulation – Specifically for the Discrimination portion of Mixed Mode. Provides for deeper targets sounding with weaker or less intense audio 'beep'. Of particular importance for Mixed mode performance and personal hearing audio tolerance when combined with tone ID.

e. Range – Adjust modulation specifically for the Discrimination portion of the Mixed Mode. Selects the modulation range, how weak a target signal must be to provide how much weaker audio 'beep". Arguably, Modulation range is more critical for the Mixed Mode. So much sound variation is occurring, limiting some of it by weakening deeper target 'beeps" produces dramatic differences in perceived audio behavior.

Again, the range is selectable for three reasons;

1. Ground mineral conditions vary how modulation performs. The setting in low mineral grounds will not provide the same results in high mineral grounds. 0 provides very little change in 'beep' volume or intensity in low mineral grounds. 5 will provide the largest variable in "beep" volume or intensity in low mineral grounds.

2. Some experts prefer modulation that will provide a gradual declining scale as target signals are found deeper into the ground. Others prefer that only the deepest targets provide any declining "beep" volume or intensity.

3. Ground mineral anomalies (small hot rocks) can cause a weak

signal response. By adjusting modulation range, quite operation can often be achieved in difficult ground conditions.

f. VCO – VCO – Adds the VCO (Voltage Controlled Oscillator) specifically to the All Metal portion of the Mixed Mode. When ON, VCO provides a progressively higher pitch 'beep" as the signal strength progressively intensifies. Target center, multiple targets near each other, and deep targets become significantly easier to recognize and attract attention for further display consideration.

3. Pinpoint Audio – Selects among options specifically for the pinpoint mode, toggle on grip squeezed and held.

a. VCO – Turns ON/OFF the VCO (Voltage Controlled Oscillator) for the Pinpoint mode (toggle on grip squeezed and held). When ON, VCO provides a progressively higher pitch 'beep" as the signal strength progressively intensifies. Target center, multiple targets near each other, and deep targets, become significantly easier to recognize and attract attention for further consideration.

b. Ratchet – Turns ON/OFF the Ratchet pinpoint feature specifically for the pinpoint mode (toggle on grip squeezed and held). Automatically detunes (ratchets down in size) large signals to a predetermined minimum for better, easier, faster, pinpointing.

(5). Frequency

Summary

Three Frequencies (Primary) - (Transmit & Receive thee Primary Frequencies).

Salt Compensate – (Special Multi-Frequency Salt Subtraction).

2.5 kHz – (Single 2.5 kHz Frequency Only).

7.5 kHz – (Single 7.5 kHz Frequency Only).

22.5 kHz – (Single 22.5 Frequency Only).

Frequency Offset – (Slightly Off Frequency to Avoid Interference).

Frequency Detailed

A. Three Frequencies (Primary) – Selects three primary operating frequencies and the two associated and significantly different multi frequency data processing methods, Best Data & Correlate.

1. VDI Best Data – Selects the strongest signal among the three primary frequencies and disregards the data from the other two frequencies. Three primary frequencies data is still used for ground rejection, however, audio and significant display data is derived using only the signal from the strongest frequency.

2. VDI Correlate – Measures the targets differences between different primary frequencies and calculates if those differences likely indicate a valued target signal or trash metal.

a. Span Limit – Adjust how different targets can be at the different frequencies and still be considered a likely valued target signal or trash metal.

b. Higher number settings allow greater differences between a target at the different frequencies and still be considered a good or valued target signal.

c. Lower number settings dictate less difference between the target at the different frequencies is require to be considered a good or valued target as apposed to a trash metal.

d. Ideal span limit varies with the ground and target corrosion conditions. Typically a lesser span limit is better suited to lower ground mineralization and/or lesser target corrosion factors. A higher span limit is better suited to higher ground mineralization and higher target corrosion factors.

e. Primarily developed for rejecting difficult iron, Correlate has an advantage over Best Data in difficult ground and target corrosion applications.

f. Wrap Limit – When searching in the difficult ground and target corrosion conditions Correlate was developed to address, it is typical for high range target signals (Quarter through Silver Dollar) to exceed the top end of the scale (+95) at one or more of the primary operating frequencies. VDI range from -95-+95 is circular (phase) so targets

that exceed +95 re-appear at the <-> end of the scale -90s.

1. Correlate normally perceives -90s indications combined with +90s indications as hugely uncorrelated (span the entire scale) so dictates such a target as a trash metal.

2. Wrap limit allows correlate to disregard normal correlation methods (sequential or linear) and consider any -90s range signals that also have one or more +90s range target measurements, as within reasonable correlate parameters. In other words a +95 combined with a -95 = one digit off (close correlation) rather than when Wrap is OFF = full scale (no reasonable correlation).

3. By adjusting Wrap Limit, Correlate becomes more effective, indicating difficult targets in difficult ground as good or valued target signals as opposed to immediately dictating such signals as trash metal. Because in difficult ground and corrosion conditions the target signal at one or more frequency often wraps around to the <-> end of the scale, wrap limit effectively captures these target signals as worthy of interest.

4. OFF eliminates (rejects) all target signals that wrap around to the -90s.

5. Adjustments from -95 through -90 increases the acceptable range a difficult target can wrap around to the -90s and still be considered near to (correlate with) the +90s.

B. Salt Compensate – provides a special frequency subtraction technique to compensate for wet conductive salt conditions (ocean beaches).

1. VDI Best Data – Applies the Best Data multi frequency technique to Salt Compensate.

2. Correlate – Applies the Correlate multi frequency technique to Salt Compensate.

3. Span Limit - Adjust how different target signals can be at the different frequencies and still be considered a likely valued target signal or rejected as a trash metal.

4. Wrap Limit - Wrap limit allows correlate to disregard normal correlation method and consider -90s range signals that also have one

or more +90s range target measurements, as within reasonable correlate parameters. In other words a +95 combined with a -95 = one digit off (close correlation) rather than when Wrap is OFF = full scale (no reasonable correlation).

C. 2.5 kHz – Selects 2.5 kHz as the one and only operating frequency. Typically 2.5 kHz is best for high conducting, hard metals, silver/copper. If only high VDI range targets are of interest, a single frequency 2.5 kHz has advantages in low to moderate ground mineral conditions over multi-frequency operation regarding signal intensity (depth).

1. Normalize – Different operating frequencies measure the same exact targets at different VDI numbers. Multi frequency techniques automatically normalize targets to a traditional VDI scale or calibration.

a. Individual frequencies offer the choice of either a natural accruing VDI calibration scale dictated by that frequency (Normalize OFF) or Normalize (shifting it back to a traditional common scale or calibration).

b. Normalize avoids confusion and increase familiarity providing a traditional and common VDI scale calibration for all the different individual frequencies. Normalize shifts the measured VDI number to the most common and familiar traditional scale in use since the early 1980's.

c. There are, however, advantages to using the naturally occurring and different VDI scales for specific frequencies. At 2.5 kHz Normalize OFF significantly expands the VDI resolution at the high end of the scale (+90s) where 2.5 kHz is most effective (silver/copper range). The compromise is Normalize OFF at 2.5 kHz compresses VDI resolution at the low to mid range of the scale (nickel/gold range). As well, because the VDI calibration range is distorted with Normalize OFF, exact discrimination accept/reject VDI settings must be reevaluated and/or modified.

d. Normalize ON is the easy way to go. If however, only high range targets are of interest, finely dissecting unwanted targets within this high range is desired, and reconfiguring the accept / reject VDI numbers is implemented, discerning high range targets among high range unwanted targets can be enhanced with 2.5 kHz and Normalize OFF.

D. 7.5 kHz - Selects 7.5 kHz as the one and only operating frequency. Typically 7.5 kHz is best for all around high, mid, and low conducting, metals. A single frequency 7.5 kHz has advantages in low to moderate ground mineral conditions over multi-frequency operation regarding signal intensity (depth).

1. Normalize - Avoids confusion and increase familiarity providing a traditional and common VDI scale calibration for all the different individual frequencies. Normalize shifts the measured VDI number to the most common and familiar traditional VDI scale in use since the early 1980's. 7.5 kHz automatically provides reasonable traditional VDI calibration, little or no distortion to traditional VDI scale. However, when spitting hairs regarding specific VDI numbers, normalize should be used with 7.5 kHz.

E. 22.5 kHz – Selects 22.5 kHz as the one and only operating frequency. Typically 22.5 kHz is best for low conducting, softer metals, nickel/gold. If only low VDI range targets are of interest, a single frequency 22.5 kHz has advantages in low to moderate ground mineral conditions over multi-frequency operation regarding signal intensity (depth).

1. Normalize – Normalize avoids confusion and increase familiarity providing a traditional and common VDI scale calibration for all the different individual frequencies. Normalize shifts the measured VDI number to the most common and familiar traditional scale in use since the early 1980's.

a. There are, however, advantages to using the naturally occurring and different VDI scales for specific frequencies. At 22.5 kHz Normalize OFF significantly expands the VDI resolution or range at the low to mid end of the scale (+20s) where 22.5 kHz is most effective (nickel/gold range). The compromise is Normalize OFF at 22.5 kHz compresses VDI resolution at the high range of the scale (copper/silver range). As well, because the VDI calibration range is distorted with Normalize OFF, exact discrimination accept / reject VDI settings must be reevaluated and/or modified.

b. Normalize ON is the easy way to go. If however, only low to mid range targets are of interest (jewelry/nickels), finely dissecting unwanted targets within this mid range is desired (aluminum), and reconfiguring the accept / reject VDI numbers is implemented,

discerning mid range targets among mid range trash (aluminum) can be enhanced with 22.5 kHz and Normalize OFF.

F. Frequency Offset – To avoid interference from other metal detectors operating near by, and/or external electrical interference, the frequencies, either all together in a multi frequency technique or as an individually one frequency, can be slightly shifted.

1. "+" Numbers progressively increase all frequencies currently in use.

2. "–" Numbers progressively decrease all frequencies currently in use.

3. The entire range provides an insignificant change in actual detection performance, depth or sensitivity to different alloys. The actual benefit is only in avoiding external electrical interference.

4. By forcing the frequencies or frequency to shift progressively further away from their standards (what they naturally want to operate at) does progressively have a cost in battery life. At maximum shifts up to two hours battery life can be sacrificed. However, if required to avoid interference, and/or significantly increase operating sensitivities in that area, the ability to search the area and/or the added depth are both well worth the reduced battery life, (eight hours continuous hunt time compared to ten).

(6). Ground Tracking

Autotrac "R" - Selects among options controlling the automatic ground rejection and ground mineral change tracking feature.

Summary

Report – (Indicate on Display When Ground Tracking Adjustments Occur and Indicate Increasing or Decreasing Levels).

Inhibit – (Restrict Ground Tracking or Not During Hot Rock Detection).

Speed – (Track Faster or Slower).

Offset – (Balance & Track Ground "+ or –" Perfect, to Enhance Small

Targets or Avoid Ground Signals).

Trac-Lock – (Lock Ground Tracking, or Use Manual Non-Tracking Ground Balance).

Offset – (Balance & Lock "+ or –" Perfect, to Enhance Small Targets or Avoid Ground Signals).

Ground Tracking Detailed

A. Report - When ON ("X" in box) ground adjustments (tracking) is indicated by "TRACKING" appearing on the center lower portion of the display. Tracking with arrows pointing right indicate ground balance is tracking with an increase in ground rejection levels. Arrows pointing left indicate tracking is occurring with a decrease in the ground rejection level.

(Inhibit Display, Photo?)

B. Inhibit – When ON ("X" in box) ground mineral tracking is restricted during target signals that have a high probability of being a ground mineral or hot rock. Doing so prevents errors in ground tracking caused be ground anomalies not representative of the average or general search area. When off (empty square) ground tracking occurs regardless. ON is suggested for most types of searching. OFF is suggested for Prospecting.

C. Speed – Selects the speed or aggression of Auto Tracking. Press ARROW Left & Right to select the speed of Auto Tracking. Excessive ground tracking can be as bad for performance as insufficient ground tracking. A speed that keeps up with progressive ground changes is desired. A setting that adjusts significantly when passing over mere slight (spotty) ground imperfections can cause instability and errors. Ideally select a speed that keeps up (benefits) regarding normal progressive ground changes, yet doesn't overcompensate on insignificant ground imperfections not representative of the average ground.

D. Offset – Selects a slightly + or – ground balance and tracking setting point to enhance ground rejection and target responses. Typically a "+" offset is used to reduce ground mineral responses and enhance target signal responses (particularly small size targets) in extreme ground types. More rarely <-> offset may be used to

enhance the response of iron oxides in a low iron ground matrix, for example stony iron meteorites in a ground matrix consisting of polar or glacier ice/snow.

E. Locktrac – Locks ground tracking so that the ground rejection setting remains unchanged during searching. A benefit when searching extreme ground types where a fixed ground balance can be used to reject repeat responses from mineralization. Pump the search coil over a troublesome spot of ground mineralization until it is tuned out (threshold stabilizes or remains consistent), lock ground tracking at that level, and that type of mineral will no longer respond throughout that area. Suggested only when spotty extreme mineral responses are so common as to obscure target responses. Ground Tracking Offset is another method of reducing or eliminating such extreme spotty ground changes.

1. Offset – Selects a slightly + or – ground balance and Lock setting point to enhance ground rejection and target responses. Typically a "+" offset is used to reduce ground mineral responses and enhance target signal responses (particularly small size targets) in extreme ground types. More rarely "-" offset may be used to enhance the response of iron oxides in a low iron ground matrix, for example stony iron meteorites in a ground matrix consisting of polar or glacier ice/snow.

Ground Probe (Ground Tracking Zoomed).

Ground Probe - From the LIVE CONTROLS, when Ground Tracking is highlighted, pressing ZOOM accesses the standard MENU with a Ground Probe on right side of display. Menu/Tab to Zero with search coil held in air away from all metals and ground minerals. At this point the search coil can be lowered to the ground, a target, or a target in the ground, and measurements of significant data are displayed within the Ground Probe portion of the display.

1. The Phase in a normalized VDI number format of what the search coil senses is displayed.

2. The phase angle in degree's (360 degrees of phase) of what the loops senses at each frequency in use, is displayed

3. The signal strength (using a comparable Rx Gain of 8) in % of whatever signal the search coil may, or may not sense, at each frequency currently in use, is displayed.

4. By noting and comparing these measurements to other ground, other targets, and/or ground/target combinations, an advanced operator can reference ground and target types and combinations and glean valued information comparing option choices. The value and use of this information is in comparing different area ground types and performance results using different option settings.

5. Rx Gain, Transmit Boost, and Frequency selection, may change the signal strength and have a small effect regarding the phase and the VDI measurement.

(7). Filter & Speed

Summary

Search – (Choose Search Mode Characteristics, Ground Filter, Recovery Delay, SAT- Self Adjusting Threshold or Automatic Threshold Maintenance).

Analysis – (Choose Analysis Mode Characteristics, Toggle On Grip Forward away from Grip, Either Match Search "same as search" or Different).

Filter & Speed Detailed

A. Search – Choose options for the standard search mode.

1. Ground Filter - Filtering out ground minerals allows deeper penetration (detection depth) in mineralized grounds. Less ground filtering benefits low ground mineral areas in depth, however, doesn't penetrate high mineral ground well. By adjusting ground filtering the Vision 3 can be optimized for the regional ground conditions. Use ARROW Left & Right to select custom ground filtration. Lower frequency filters (5.0 Hz) favor slower search coil sweep speeds. Higher frequency selections (10.0 Hz) tend to favor faster search coil sweep speeds.

a. Modern metal detector ground filtration, because it is no longer a specific set of components that equal a specific filter, has never been well described nor understood. Modern designs are better described by their speed (Hz) rather than their quantity or cycles. The ideal setting

for your ground type is the one that offers the greatest depth penetration that works well with your personal and typical search coil sweep speed.

b. The ideal setting for a person's search coil sweep speed and habits, may not be the best for another person in the same grounds.

c. Typically the lower number Hz are better for slower search coil sweep speeds and the BAND version of each filter speed works better for lower mineral conditions and the HIGH PASS version for higher ground mineral types.

(Ground Filter Display, Photo?)

1. 5.0 Hz Band Pass processing works better for slower search coil sweeps and lower ground mineral types.

2. 5.0 Hz High (High Pass Filtering) works better for slower search coil sweeps and/or slightly higher ground mineralization.

3. 7.5 Hz Band Pass works better for slow to medium search coil sweep speeds and low to medium ground mineralization.

4. 7.5 High (High Pass Filtering) works better for slow to medium search coil sweep speeds in medium to high ground mineralization.

5. 10.0 Hz Band Pass works better for brisker loop sweep speeds and high ground mineralization.

6. 10.0 Hz High (High Pass Filter) works better for brisker loop sweep speeds in even higher ground mineralization.

7. 12.5 Hz Band works better in extreme ground mineralization with relatively quick loop sweeps.

8. 12.5 High (High Pass Filter) works better in even more extreme ground mineralization with relatively quick search coil sweep speeds.

9. Again, the ideal setting for your ground type is the one that offers the greatest depth penetration with your personal search coil sweep speed habits.

2. Recovery Delay – In combination with ground filter selection, Recovery Delay can also be used to speed or slow the time it takes for

a target signal to be processed, so that another target near the first can also be detected and its signal processed.

a. Lower numbers speed target signal processing benefiting multiple targets near each other, however, compromising accuracy both audio and display, particularly at depth (5+ inches).

b. Higher number settings slow target signal processing benefiting accuracy both audio and display particularly at depth (5+ inches). However, at the compromise of processing signals quickly enough to processing one target signal and being ready/capable to respond to another near the first.

c. Ideal Recovery Delay is highly dependent upon the Ground Filter selection, area ground mineralization, and personal search coil sweep speed habits.

3. S.A.T. (Self Adjusting Threshold) – Adjust the speed at which SAT automatically maintains the threshold hum normally heard continuously during searching. Primarily used as a stabilizing feature for the ALL Metal mode.

a. Lower numbers are slower to correct threshold variations, however, allow slower search coil movement.

b. Higher numbers are quicker to correct threshold variations, however, require quicker search coil movement.

c. The ideal setting is one that maintains a steady threshold considering your search coil sweep speed habits and ground conditions yet continues to detect targets at your slowest search coil sweep.

B. Analysis – Selects options for the Analysis mode, toggle on grip pressed forward away from grip.

1. Match Search "X" – Applies the exact same settings to Analysis mode as is selected for the regular search mode, toggle on grip in center position.

2. Unselected Match Search (Empty Square) – Allows different Ground Filter, Recovery Delay, and SAT settings for the Analysis mode (toggle on grip forward away from grip) compared to the regular search mode (toggle on grip center position).

3. One may desire different settings for closely scrutinizing target signals in the Analysis mode.

(8). Configure

Summary

Metric Units – (Choose Metric Depth and Measurements).

Backlight – (Select Backlight Level).

Color Theme – (Select A Color Theme For the Display).

Sound Effects – (Select and adjust the Level, Volume, tone of sound effects).

Live Search Screen – (Select Different Ways to Present Information On The Display, Search, Pinpoint, Analysis, and Status Line which indicates options in use and their status).

Live Controls – (Select and Arrange Live Controls across bottom of search display).

Menu – (Select Different Menus Options).

Battery – (Select Different Battery Options, Types, Auto Power Off Time).

Configure Detailed

A. Metric Units – Unselected, Empty Box = US Customary (Inches). Selected "X" box = Metric (Centimeters).

B. Backlight – Adjusts Backlight intensity. Note mid range settings reduce battery life 15%, max settings reduce battery life 25%.

C. Wireless Headphone – Selects options for Wireless Headphones.

1. Enable - Turns ON/OFF wireless headphone transmitter within Vision 3 detector. When ON "X", wireless options automatically become available from Live Controls and Six Block Menu. When OFF,

Wireless options are not normally visible on Live Controls and Six Block Menu.

a. Channel – Select a clear channel (free of interference) for the Wireless Headphone transmitter.

b. If one or more Vision 3 units are being used in an area with Wireless Headphones, each should use a different channel.

2. Power Level – To conserve battery life, select the lowest power level that provides good quality sound.

a. If Multiple White's headphones are in use (option below) a slightly higher power setting will allow the wireless listener not holding the Vision 3 to participate (hear the Vision 3 responses) at a greater distance.

3. Monitor Battery – Allows the Vision 3 to monitor and indicate the Wireless Headphone battery condition on the Display. Unhappy Headphone indicates headphone battery is low.

a. Speaker – Speaker alarms 'beeps" when Wireless Headphone battery become too weak to properly function. Same 'beep" as when turning Speaker ON/OFF.

4. Multiple Headphones – Allows two or more White's Wireless Headphones to listen in on one Vision 3 unit. Not only a benefit in teaching / learning high-end detector use, also creates team participation of a traditionally individual hobby.

a. Connect – Vision 3 begins looking for additional White's Wireless Headphones within range to make a direct wireless communications connections

b. Exit – Wait until Vision 3 indicates connection successful. MENU/TAB to EXIT, press ENTER

D. Color Theme - Select among a number of different color themes for the display. Individuals see colors differently. As well different light conditions change color perception. Themes provide a variety of popular choices.

1. Sunshine –

2. Chestnut –

3. Dusk –

4. Fireside –

5. Pine –

6. Relic –

7. Custom – Combined with Expert Only, allows custom color missing throughout the Menu system, ideal for those with color blind issues.

E. Sound Effects – Selects a number of different sound indications.

1. Volume – How loud a target 'beeps'. Different speaker devices have different sensitivity levels. By adjusting each individually, optimum volume can be achieved through each different device.

a. Speaker – How loud a target "beeps" when sounding through the built in speaker.

b. Plug In Headphone – How loud a target "beeps" when sounding through a wire-connected headphone.

c. Wireless Headphone – How loud a target "beeps" when sounding through the wireless headphone.

2. Key Clicks – Properly pressing a control/key can be indicated with a click or beep. Adjusting to user preferences.

a. Tone – Select the tone of the key click to preference.

b. Balance – Balance key click between left and right headphone speaker. Hearing typically varies between left and right ear. By balancing audio to the user, greater comfort is achieved.

3. Key Limits – When a control is adjusted to the end of the range, if wrap has not been selected, a warning 'beep" indicates range is at the limit (no further adjustment range available). Adjust the Tone of this warning 'beep" to preference.

a. Tone – Select the tone or pitch of the Key Limit indication.

b. Stereo – Select Stereo or Mono sound. Stereo provides superior sound quality. However, some prefer Mono.

4. Audio Samples – Turns ON/OFF the demonstrated sound or tone level during adjustment.

F. Live Search Screen ––– (Select Different Ways to Present Information On The Display, Search Display, toggle on grip center position, Pinpoint display, toggle on grip squeezed and held, Analysis Display, toggle on grip pushed forward away from grip, and Status Line, indicating current options in use and their status).

1. Search – Selects Options for the display viewed during searching *(toggle on grip center position)*.

a. VDI – Size - Select the preferred size of the VDI number shown for targets during target detection.

b. Icon – Size - Select the preferred size of the Icons shown for targets during target detection.

c. Depth – Select depth indication options.

1. Format – Selects depth indication preferences for the search display (toggle on grip center position).

a. Integer –ON/OFF standard whole number depth indication (upper right side of display) during searching (toggle on grip center position).

b. Decimal – ON/OFF depth indication with decimal point (upper right side of display) during searching (toggle on grip center position).

c. Fraction – ON/OFF fractional depth indication (upper right side of display) during searching (toggle on grip center position).

2. Size – Selects the size of the depth indication during searching (toggle on grip center position).

G. Signagraph – Selects options for the block signagraph during searching (toggle on grip center position).

1. Consistency – How quickly an individual signagraph bar builds

height is based on the consistency (average) of the target signal upon multiple search coil passes. By adjusting attention to consistency, signagraph bars can build more quickly and narrowly or slower and wider, based on the targets characteristics or consistency.

a. Max – Higher numbers allow less target consistency for an individual signagraph bar to build height. Lower numbers require less consistency to build height and have the effect of more readily indicating wider signagraph patterns regarding less consistent target signals.

2. Intensity – In addition to indicating the average target indication, Signagraph bar also indicates the intensity. Signagraph height indicates based upon the constancy (average) of signals at that particular VDI number as well as the intensity of the signal.

a. Base Threshold – By adjusting the degree or % the first signagraph segment represents of the target signal strength, signagraph intensity (height of signagraph blocks or pattern) can be adjusted or calibrated to preference.

3. Single Sweep – ON/OFF. When ON, signagraph represents only the information from the last sweep of the search coil. When OFF, signagraph averages information over multiple sweeps of the search coil. Typically averaging provides more accurate signagraph information. However, in clean ground with great search coil sweep habits and keen attention to the fact individual search coil sweeps can produce anomalies (one sweep not always representative of the target) an expert may find signal sweep an effective method of searching.

a. Fade – How quickly the signagraph information automatically fades from the display when searching in Signal Sweep.

b. Higher numbers fade (clears) the signagraph more quickly. Lower numbers slows fading. Select a fade rate that allows enough time to consider the information, yet avoid filling the signagraph with too much information (overwhelming).

4. Resolution – Adjust how many VDI numbers contribute to a specific Spectragraph bar.

a. A higher number (larger range of VDI numbers for each bar) tend to produce fewer and individually wider Spectragraph bars (the entire

VDI range is split up into fewer bars).

b. Lower numbers produce thinner and more Spectragraph bars (the entire VDI range is divided or split up into a larger number of bars).

c. By adjusting resolution, the number of Spectragraph bars can be selected. Adjust the resolution to produce as many bars as provides useful Spectragraph information, however, not so many as to provide distracting information, not of interest.

5. Compress – ON/OFF. When ON the iron Spectragraph range (-95 to -1) is minimized, allowing greater size dedicated to the + range. If no iron range targets are of interest, Compress adds to the resolution of the + range.

6. Rule – ON/OFF. When ON (-95 – 0 - +95) reference is shown across the bottom of the Spectragraph. When OFF, no VDI number reference is shown across the bottom of the Spectragraph.

a. Size – Select the size of the (-95 – 0 - +95) reference rule.

7. Disc Bar - ON/OFF. When ON, the color bar across the bottom of the Spectragraph indicates the Accept / Reject discrimination program or settings at a glance. When OFF, one must recall what that programs Accept / Reject settings are from personal memory or simply trust they are set appropriately for the application.

a. When Rule ON, selects the size of the Disc Bar.

8. Multigraph – ON/OFF. When ON, each primary frequency currently in use indicates with a separate Spectragraph. When OFF, only one Signagraph appears regardless of how many frequencies are in use.

9. Color – Select color choices for the Icon and Accept/Reject ranges.

a. Icon Ranges – ON/OFF. When ON, VDI number range of each Icon dictate their color.

b. Accept/Reject – ON/OFF. When ON, Signagraph block colors indicate if that VDI number is currently being rejected or accepted by the current discrimination settings or program. Red = Reject. Green = Accept.

H. Sizing – Selects the predominate size and location of each feature.

1. Depth – ON/OFF. When ON displays average depth over multiple search coil sweeps.

2. Signal – ON/OFF. When ON displays average signal strength over multiple search coil passes.

3. Rate – Adjust calibration of sizing graph.

4. Rule – Displays sizing reference gage at bottom of sizing graph.

a. Sweep Speed – Adjust calibration of display sizing reference gage at bottom of sizing graph.

5. Title – ON/Off. When ON, indicates the frequency for each target signal indication.

6. Mark Target – ON/OFF. When ON, applies sizing reference marks on sizing graph.

2. Pinpoint – Feature selections for the Pinpoint mode (toggle on grip squeezed and held).

A. Depth Indication – Select Format and size of depth reading during pinpoint mode use.

1. Format – Selects format of depth indication in the pinpoint mode (toggle on grip squeezed and held).

a. Integer –ON/OFF standard numbered depth indication (upper right side of display) during pinpointing (toggle on grip squeezed and held).

b. Decimal – ON/OFF depth indication with decimal during pinpointing (toggle on grip squeezed and held).

c. Fraction – ON/OFF fractional depth indication during pinpointing (toggle on grip squeezed and held).

d. Size – Selects the size of the depth indication during pinpointing (toggle on grip squeezed and held).

B. Scan – ON/OFF. When ON pinpoint indication scrolls.

1. Depth – Average depth indication over multiple search coil sweeps.

2. Signal – Average target signal strength over multiple search coil passes.

3. Scroll Rate – Speed and resolution of scrolling graph.

4. Rule - Displays reference scale at the bottom of signal graph.

5. Title - ON/OFF. When ON, labels each frequency in use on graph.

C. Meter – Select type of presentation to show on display for a target signal.

1. Depth – ON/OFF. When ON, depth indication shown during pinpointing,

2. Signal – ON/OFF. When ON, target signal strength shown during pinpointing.

3. Fade Rate – Adjust rate the depth indication fades (resets) when the search coil is no longer over a target.

4. Rule – ON/OFF. When ON, provides a gage for depth indication.

D. Analysis – Selects among options for the Analysis mode (toggle on grip pressed forward away from grip).

1. Pinpoint Scan – ON/Off. When ON, selects scrolling pinpoint indication for Analysis mode.

a. Depth – ON/OFF. When ON averages depth indication over multiple search coil passes.

b. Signal – ON/OFF. When On averages graph signal over multiple search coil passes.

c. Scroll Rate – Adjust calibration and resolution of scrolling graph.

d. Rule – ON/OFF. When On displays reference scale on bottom of scan graph.

e. Title – ON/OFF. When ON, labels each frequency in use on graph.

2. Pinpoint Meter – Select type of presentation to show on display for

a target signal.

a. Depth – ON/OFF. When ON, depth indication shown during pinpointing,

b. Signal – ON/OFF. When ON, target signal strength shown during pinpointing.

c. Fade Rate – Adjust rate the depth indication fades (resets) when the search coil is no longer over a target.

d. Rule – ON/OFF. When ON provides a gage for depth indication.

3. Sizing – Select sizing display.

a. VDI Confidence – ON/OFF. When ON a confidence rating is provided for VDI target information.

b. Depth – Display average depth over multiple search coil sweeps.

c. Signal – Display target signal strength over multiple search coil sweeps.

d. Rate – Adjust resolution of sizing graph.

e. Rule – Display sizing gauge at bottom of sizing graph.

1. Sweep Speed – Calibrates sizing gauge at bottom of sizing graph for search coil sweep speed.

f. Title - ON/OFF. When ON, labels each frequency in use on graph.

g. Mark Target – When ON, provides reference marks on sizing graph.

3. Signagraph - **–** Selects options for the block signagraph during searching (toggle on grip center position).

1. Consistency – How quickly an individual signagraph bar builds height is based on the consistency (average) of the target signal upon multiple search coil passes. By adjusting attention to consistency, signagraph bars can build more quickly and narrowly or slower and wider, based on the targets characteristics or consistency.

a. Max – Higher numbers allow less target consistency for an individual

signagraph bar to build height. Lower numbers require less consistency to build height and have the effect of more readily indicating wider signagraph patterns regarding less consistent target signals.

2. Intensity – In addition to indicating the average target indication, Signagraph bar also indicates the intensity. Signagraph height indicates based upon the constancy (average) of signals at that particular VDI number as well as the intensity of the signal.

a. Base Threshold – By adjusting the degree or % the first signagraph segment represents of the target signal strength, signagraph intensity (height of signagraph blocks or pattern) can be adjusted or calibrated to preference.

3. Single Sweep – ON/OFF. When ON, signagraph represents only the information from the last sweep of the search coil. When OFF, signagraph averages information over multiple sweeps of the search coil. Typically averaging provides more accurate signagraph information. However, in clean ground with great search coil sweep habits and keen attention to the fact individual search coil sweeps can produce anomalies (one sweep not always representative of the target) an expert may find signal sweep an effective method of searching.

a. Fade – How quickly the signagraph information automatically fades from the display when searching in Signal Sweep.

b. Higher numbers fade (clears) the signagraph more quickly. Lower numbers slows fading. Select a fade rate that allows enough time to consider the information, yet avoid filling the signagraph with too much information (overwhelming).

4. Resolution – Adjust how many VDI numbers contribute to a specific Spectragraph bar.

a. A higher number (larger range of VDI numbers for each bar) tend to produce fewer and individually wider Spectragraph bars (the entire VDI range is split up into fewer bars).

b. Lower numbers produce thinner and more Spectragraph bars (the entire VDI range is divided or split up into a larger number of bars).

c. By adjusting resolution, the number of Spectragraph bars can be

selected. Adjust the resolution to produce as many bars as provides useful Spectragraph information, however, not so many as to provide distracting information, not of interest.

5. Compress – ON/OFF. When ON the iron Spectragraph range (-95 to -1) is minimized, allowing greater size dedicated to the + range. If no iron range targets are of interest, Compress adds to the resolution of the + range.

6. Rule – ON/OFF. When ON (-95 – 0 - +95) reference is shown across the bottom of the Spectragraph. When OFF, no VDI number reference is shown across the bottom of the Spectragraph.

7. Disc Bar - ON/OFF. When ON, the color bar across the bottom of the Spectragraph indicates the Accept/Reject discrimination program or settings at a glance. When OFF, one must recall what that programs Accept / Reject settings are from personal memory or simply trust they are set appropriately for the application.

a. When Rule ON, selects the size of the Disc Bar.

8. Multigraph – ON/OFF. When ON, each primary frequency currently in use indicates with a separate Spectragraph. When OFF, only one Signagraph appears regardless of how many frequencies are in use.

9. Color – Select color choices for the Icon and Accept/Reject ranges.

a. Icon Ranges – ON/OFF. When ON, VDI number range of each Icon dictate their color.

b. Accept/Reject – ON/OFF. When ON, Signagraph block colors indicate if that VDI number is currently being rejected or accepted by the current discrimination settings or program. Red = Reject. Green = Accept.

E. Status Line – Select options for the status line indicating significant active options.

1. Size – Select the size of the status line information.

2. On Top – Select the location of the status line.

3. Show – Select what to show on the status line.

H. Live Controls – Select options for the Live Controls

1. Size – Select the size of the live controls, sm, med, lg, X-lg.

2. Style – select the style of the live controls.

a. Bare – Plain style.

b. Knob – Knob style.

c. Buttons – Button style.

d. Meter – Meter style.

e. Specific – Select which controls to show live and which of their individual options to show live.

3. Wrap – When OFF, Live Controls stop at the last selection. If ON, Live Controls wrap from the last option back to the beginning (first option) cycling through all the options continuously.

4. Minimize – Minimizes or reduces the Live Controls allow larger portion of the display for target information.

5. Hide – Hides, or eliminates the Live Controls from the search display allowing larger portion of the display for target information.

6. Zoom Into – Turns ON/OFF the ability to use ZOOM to expand the Live Control (zooming to menu section of that control).

7. Extend – Order – Allows both the selection of which Live Controls to list on the display and the order in which Live Controls are listed to be re-arranged.

a. Enter Extend, ENTER Order, use ARROWS and ENTER to check the first Live control you desire listed, then the second, then the third and so on. Once exiting to the search screen, Live Controls will be arranged according to the sequence you checked them.

I. Menu - Selects options for the way the menus function.

1. Size – Select the text size of the Menus, Sm, Med, Lg, X-Lg.

2. Expert Only – Select Expert Only to eliminate the secondary Six

Block menu. Pressing Menu once brings up expert menu.

3. Wrap – When ON, at the end of the Menu (last option) the menu automatically returns to the beginning (first option). When OFF, at the end of the Menu (last option) a warning sounds and one must press ARROW up to backtrack up the menu listings.

4. Re-enter At Top – When ON, Menus always begin at the top listing. When OFF, Menus begin at the last bookmark position (last major category).

J. Battery – Selects options relating to the battery.

1. Battery Type – Selects what type of battery is currently in use allowing the battery check to more accurately monitor the battery condition.

a. NiMH – Selects Nickel Metal Hydride battery which is the standard equipment rechargeable battery provided with the Vision 3.

b. Nicd – Selects Nicad rechargeable battery, commonly provided with past White's high end models and optional for Vision 3.

c. Alkaline – Selects recommended non-rechargeable alkaline battery or back-up battery pack also standard equipment with the Vision 3. Select Alkaline whenever and whatever non-rechargeable are in use.

2. Auto Power OFF – ON recommended. Turns the vision 3 OFF automatically if no controls are used for a specified or selected period of time. If the Vision three is accidentally turned ON or left ON during storage, draining any rechargeable or alkaline batteries to absolute zero will result in damage to the battery and/or battery holder, and/or cause batteries to leak acid damaging the Vision 3 housing and/or circuits beyond repair. Such damage is considered neglect and will not be covered under warranty.

a. Inactive Limit – Selects the time period in minutes no control use dictates an automatic OFF sequence.

b. Automatic OFF sequence is indicated by a distanced musical melody. Turning back ON automatically returns to last used program.

c. Normally, the toggle on the grip is used at least once every 10 minutes for a pinpoint or analyze sequence, easily keeping the Vision 3

ON with a 15 minute Inactive Limit.

d. Areas unusually free of metals commonly dictate a 30-minute time out (automatic Inactive limit). 30 minute inactive limit is generally a good overall selection.

e. Some may prefer 45 -60 minutes. 60 minutes is normally safe regarding battery damage even if a person runs their batteries to the very end of their duty cycle. However, if a rechargeable battery is several years old (well used) 60 minutes combined with heavy battery duty (backlight, Tx boost) may be pressing ones luck regarding maximum battery duty cycling and damage from absolute discharge.

f. Those who like to slip in a few minutes of detecting on their lunch hour or between responsibilities may want to use a short Inactive limit (5 minutes) to remind them of their short window of opportunity, productivity, and avoid over concentration, losing track of time.

(9). Information

Summary

Quick Reference – (ON/OFF built in Tutorial).

Owner Registration – (Embed your personal information deep within vision 3 software).

Battery – (Manually check the current battery voltage)

Information Detailed

A. Quick Reference – Turns ON/OFF a quick reference or tutorial accessed with the ZOOM and ARROW controls.

B. Owner Registration – Embed your personal information deep into the software so that your Vision is indisputably identified as belonging to you.

a. Owner Registration can be deleted, reset, or changed, only with orginal code which will disappear after first Registration **(Write it**

Down Inside Cover Of Instruction Manual) or factory assistance. Attempting to reset this owner information without the original PASS WORD code or factory assistance will not be successful and may damage the Vision beyond repair (read only memory).

b. Factory will monitor serial numbers and your Registration and use this information to contact you should there ever be a question as to the ownership of a particular Vision model.

c. Should your owner information change or should you ever wish to sell your Vision, original (disappearing) Pass Word Code or factory assistance will be required in resetting owner registration. Factory will require verification of your identity.

d. Written request for a reset will not be accepted by e-mail. Your written and signed request must be mailed or faxed with your current and verifiable contact information too;

e. Please note to protect legitimate owners, White's must make it inconvenient to change owner registration. We highly encourage owners to make note of the original disappearing Pass Word Code. In unfortunate cases of a death or diminished mental capacity we are placed in an awkward position, apologize in advance for any inconvenience, assure you White's will maintain the utmost in confidentiality regarding your family's personal information, however, we must insist on acceptable precautions prior to resetting any and all Owner Registration.

f. Once certain of the Owner Registration you wish to embed, Enter Owner Registration, MENU/TAB to Register and press ENTER. Make note of the original Pass word listed (it will disappear after first registration) within this manual, Enter your personal information, MENU/TAB to SAVE, and press ENTER.

C. Battery – Check current battery voltage.