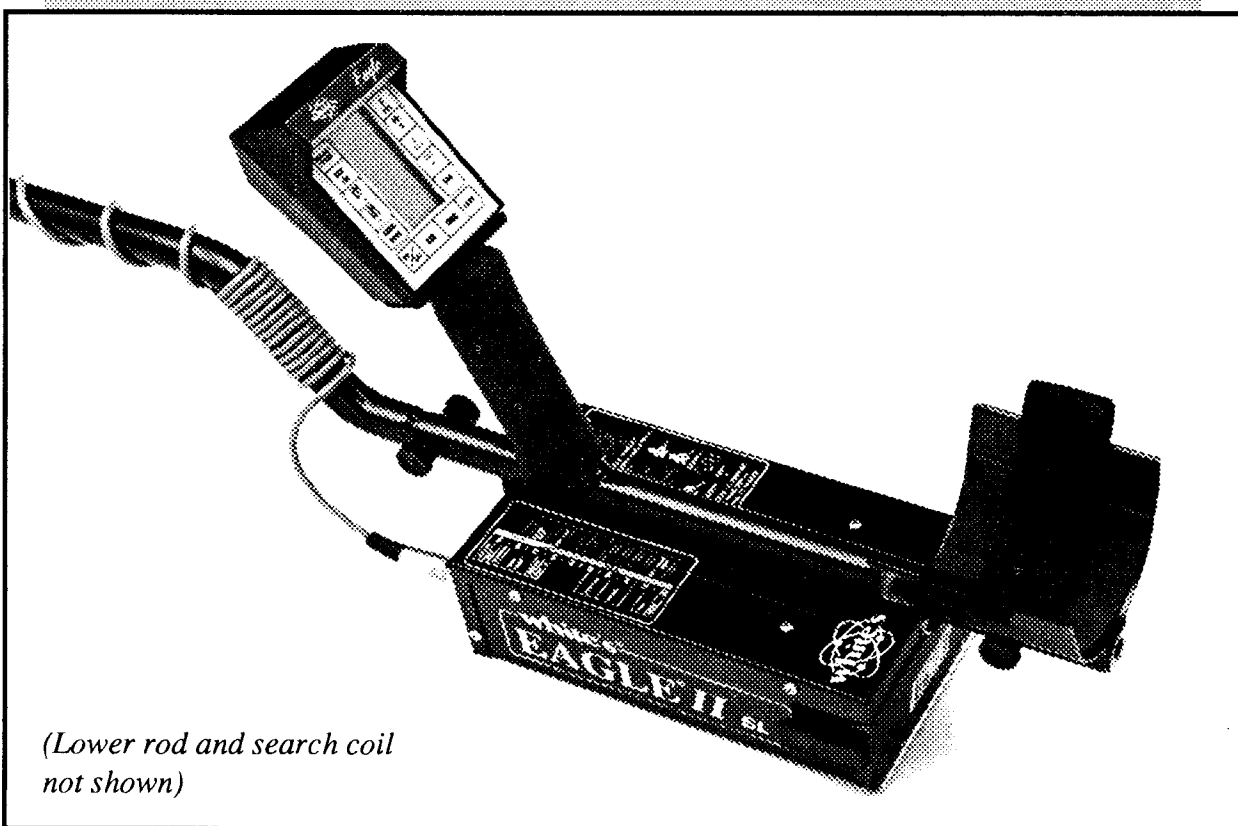


# OPERATOR'S MANUAL

**white's**

## EAGLE<sup>®</sup> II S & SL

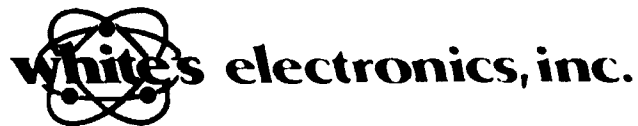
Manufactured by WHITE'S ELECTRONICS, Sweet Home, OR USA



*(Lower rod and search coil  
not shown)*

**ATTENTION:** To use your EAGLE in normal conditions, use the simplified instructions on the box. To fine tune or customize to operate in other conditions, refer to the information inside.

A Message from Mr. Kenneth White, Jr.  
Vice-President, White's Electronics, Inc.



Congratulations! You are now the proud owner of one of the world's finest metal detectors.

The EAGLE® II represents the second in a new generation of state-of-the-art metal detectors. Prior to the release of the EAGLE®, many of this instrument's capabilities were thought impossible.

With the EAGLE, White's has again pioneered and introduced new technology, changing the metal detector forever.

We have made many changes and refinements to this new model. Read this manual carefully and refer to it as often as necessary. Any piece of fine equipment is only as good as the abilities of the person operating it. Become familiar with your EAGLE ® and practice. There is no substitute for field experience.

Ahead of you lie exciting experiences you will never forget. For years to come, you will have yarns to spin about the places you will visit, the people you will meet, the history you will learn, and the treasure you will uncover. We envy your journey, and wish you every success.

Good Hunting,

A handwritten signature in black ink, appearing to read "Kenneth R. White, Jr.", written in a cursive style.

Kenneth R. White, Jr.

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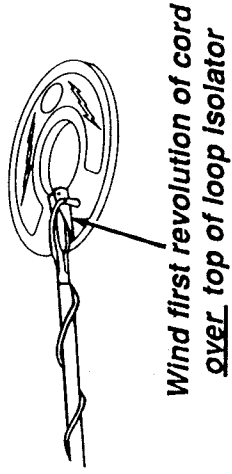
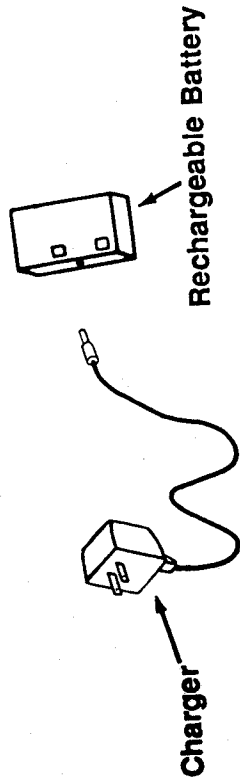
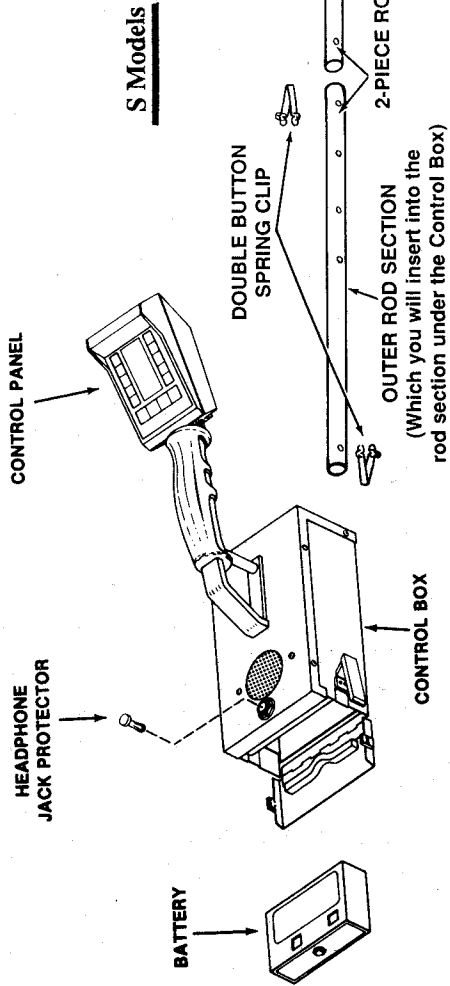
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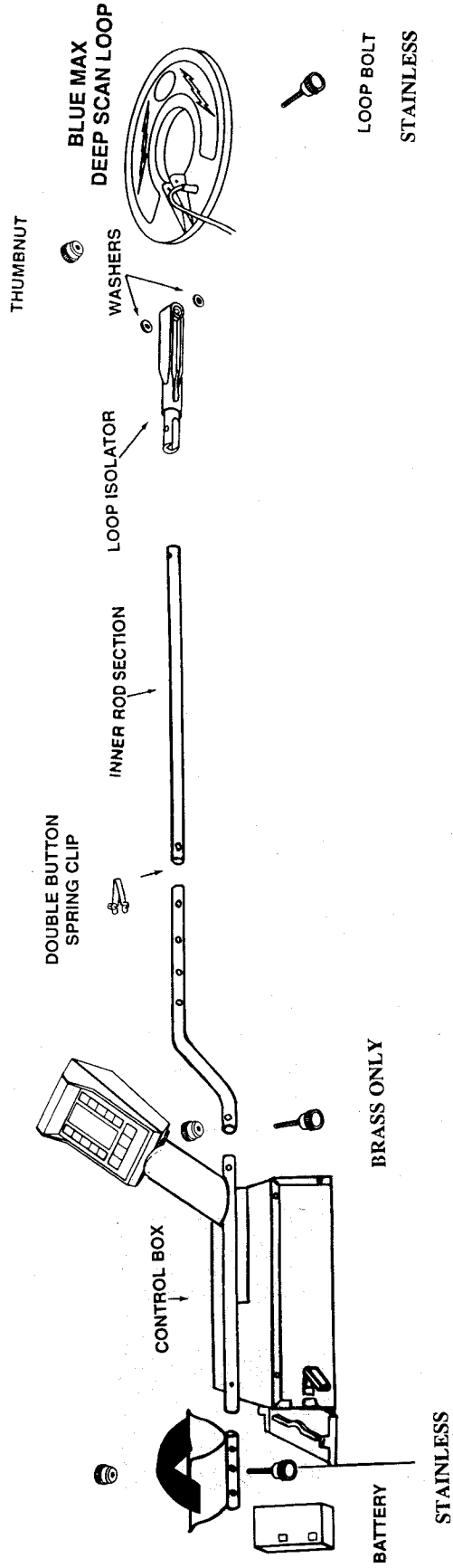
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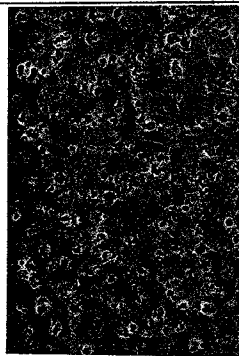
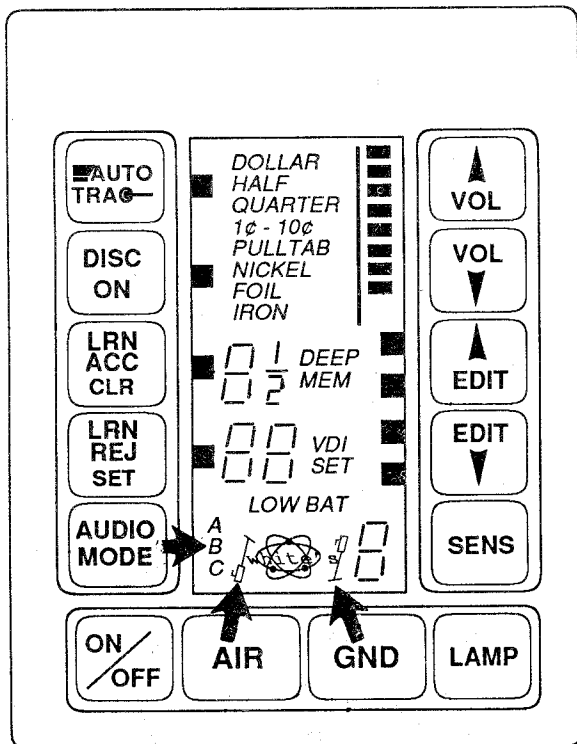
# PARTS IDENTIFICATION AND ASSEMBLY



## SL Models



# SIMPLIFIED INSTRUCTIONS

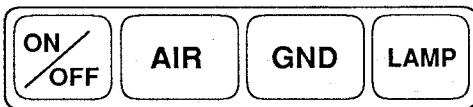


←  
TRIGGER SWITCH

1. Assemble your instrument as shown on page one.
2. Install either four "C" cell alkaline batteries in the holder or use the rechargeable battery. If the instrument will not turn ON or LOW BAT indication persists, replace or recharge the batteries.
3. Make sure the TRIGGER SWITCH is in the center search position, and the SIG BAL control on the front of the instrument is at the PRESET position.
4. Press the ON/OFF control once, the display will show everything for a moment, wait for it to clear and show the AIR PROMPT.
5. Press AUDIO MODE control to select one of the three available Preset Starting Programs: "A" COIN & JEWELRY, "B" PROSPECTING & RELIC, "C" BEACH. This is the only opportunity you will have to select a starting program, unless you turn the instrument OFF and start over.
6. If no Preset program is selected, "A" COIN & JEWELRY program will automatically be in effect.
7. Hold loop at waist level, away from known metals or the ground and press AIR control.
  - A. If you hear a multinote beep, reposition the loop and again press AIR control.
8. When the GND PROMPT appears on the display, place the loop flat on the ground and press GND control.
  - A. If you hear a multinote beep, reposition the loop and again press GND control.
  - B. If multinote beep persists, ignore it.
9. All other controls are preset based on the selection made in step #5 above.
10. Pass the loop smoothly over the ground, slightly overlapping each sweep. The loop must be swept or in motion to detect metals.
11. Once a good solid tone and consistently good display indication are noted, squeeze and hold the trigger. "X" the target, the loudest volume and lowest display number DEEP indicates the target is pinpointed below the physical center of the loop. Loop motion is not required when the TRIGGER SWITCH is squeezed for pinpointing.
12. Before continuing to search, squeeze and release the TRIGGER SWITCH with the loop at waist level to reset or clear for further searching.

# EXPLANATION OF CONTROLS

## PRIMARY CONTROLS



## TRIGGER SWITCH

-Located on the handle  
below the display.

The PRIMARY CONTROLS, labeled in GREEN, are the only controls that require setting each time you operate the EAGLE. All other controls may use preselected settings, determined by the selected STARTING PROGRAM.

**I. TRIGGER SWITCH** -Located on the handle below the display.

A. Always use the center search position during tuning and searching.

B. Use the squeezed and held position to pinpoint.

C. Use the forward lock position to lock into the pinpoint mode.

D. After pinpointing, always squeeze and release the TRIGGER SWITCH with the loop at waist level before continuing. This resets or clears for further searching.

E. Immediately after pressing ON /OFF control, squeezing and releasing the TRIGGER SWITCH, returns the instrument to the exact settings prior to turning it OFF (Memory Recovery). Memory Recovery will only work if the battery remains within 3.8 - 6.0 volts and is not removed for more than 30 seconds. Removing the battery before turning the instrument OFF will cancel the memory.

F. When the TRIGGER SWITCH is squeezed and held or pushed forward to lock, additional options become available and will be described in detail later in this instruction manual.

## II. ON/OFF

A. Press once to turn power ON, press again to turn power OFF.

B. If ON/OFF doesn't turn power ON, replace or recharge the batteries.

C. LAMP automatically turns OFF with the ON/OFF control.

D. Once instrument is turned ON, everything will be visible on the display for a few seconds and then clear, showing AIR PROMPT.

E. If controls are not used for twenty minutes, the instrument will automatically turn OFF.



### III. AUDIO MODE

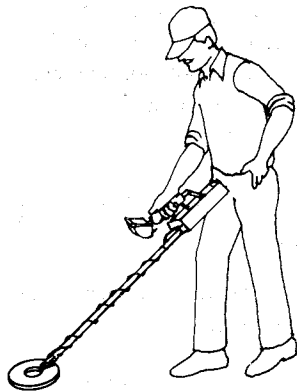
A. After instrument is turned ON, press AUDIO MODE control to select one of the three available PRESET STARTING PROGRAMS; "A" COIN & JEWELRY, "B" PROSPECTING & RELIC, "C" BEACH. This is the only opportunity you will have to select a starting program. If you wish to change the starting program after this point, you will have to turn the instrument OFF and start over.

### IV. AIR

- A. Prepares the instrument to GND (ground) balance.
- B. Hold loop at waist level, away from known metals or the ground and press AIR.
- C. Multinote beep indicates error. Reposition the loop, away from known metals or the ground and again press AIR control.
- D. You should hear a solid beep and then the display should show GND PROMPT.

### V. GND (Ground)

- A. Balances the instrument to ignore ground minerals.
- B. Place the loop flat on the ground and press GND control.
- C. Multinote beep indicates either an error, such as balancing over metal, or no minerals were present so a preselected GND setting was selected.
- D. Reposition the loop and press the GND control. If multinote beep persists, ignore it as the ground is probably not mineralized.
- E. Do not adjust the loop to rod angle between AIR and GND balance. If angle is adjusted, then repeat AIR/GND sequence.
- F. To bench or air test the EAGLE capabilities, avoid loss of sensitivity by either using a mineral sample in place of the ground during GND balance or keep pressing the GND control until the multinote beep occurs indicating the instrument has reverted to a preselected GND setting.

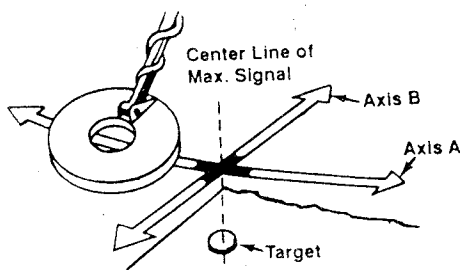
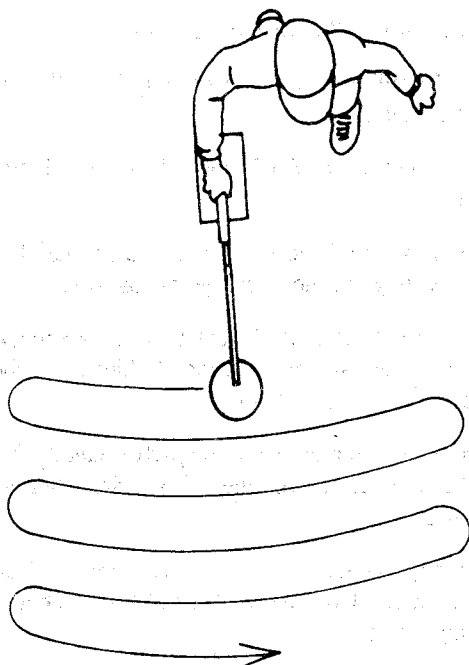


## **VI. LAMP**

- A. Press LAMP control once to turn ON LAMP.
- B. Press LAMP control again to turn LAMP OFF.
- C. LAMP automatically turns OFF with ON/OFF control.
- D. Memory recovery will not return LAMP to ON position.
- E. LAMP use will reduce battery life.
- F. LAMP bulb can be replaced only by authorized service centers.
- G. Press and hold LAMP control to check battery voltage.
  - 1. 49 would indicate 4.9 volts, the normal fully charged voltage of the rechargeable battery.
  - 2. Four 1.5 volt alkaline "C" cell batteries are recommended for the standard battery holder and when new, check at about 6.0 volts.
  - 3. A voltage regulator insures no performance differences between these two types of batteries other than actual life.
  - 4. Battery strength is continually monitored and when LOW BAT persists on the display, the battery is getting weak.
  - 5. After checking battery voltage, if the LAMP is not needed, press and release LAMP control a second time to turn LAMP OFF.

## OPERATION REVIEW

### PRIMARY CONTROLS



1. TRIGGER SWITCH - Center (Search) Position and SIG BAL at PRESET.

2. Press ON/OFF and wait for AIR PROMPT.

3. Press AUDIO MODE control to select one of the three available PRESET STARTING PROGRAMS; "A" COINS & JEWELRY, "B" PROSPECTING & RELIC, "C" BEACH.

4. Hold the loop at waist level, away from known metals or the ground and press AIR. If you hear a multinode beep, reposition the loop and again press AIR. You should hear a solid beep and GND PROMPT should appear.

5. Place the loop flat on the ground and press GND. If you hear a multinode beep, reposition the loop and again press GND. If multinode beep persists, ignore it, as the ground is probably not mineralized.

6. To check battery voltage, press and hold LAMP control. 49 indicates 4.9 volts.

7. To turn LAMP ON or OFF, press and release LAMP control.

8. Search, sweeping loop smoothly and evenly over the ground, slightly overlapping each sweep. The loop must be in motion to detect.

9. Once a consistently good beep and display indication are noted, squeeze and hold the TRIGGER and "X" the target. Loudest volume and shallowest DEEP number indicates target center. The loop does not have to be in motion when the TRIGGER SWITCH is squeezed.

10. Before continuing to search, squeeze and release the TRIGGER SWITCH with loop at waist level.

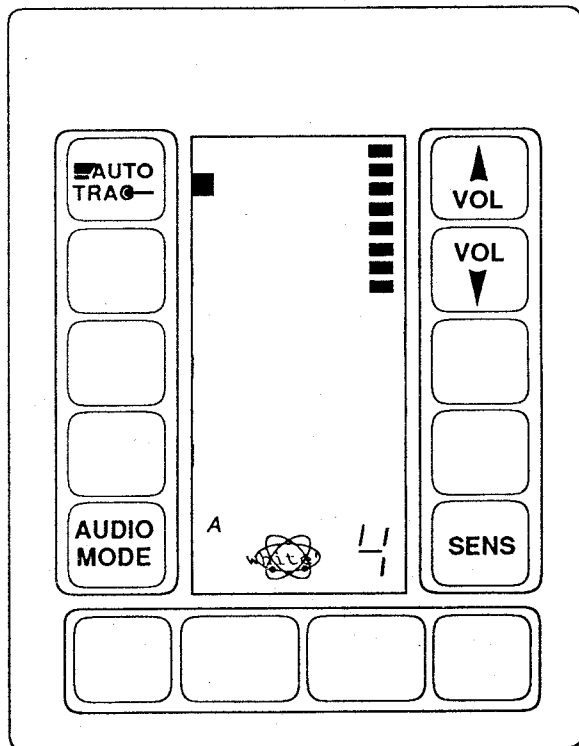
11. To turn detector OFF, press ON/OFF control.

12. If no controls are pressed for 20 minutes, the EAGLE will turn off automatically.

It is vital that you understand the PRIMARY CONTROLS before continuing, as all other controls are optionally adjustable and adjustment will depend on personal preference and application.

# EXPLANATION OF CONTROLS

## SECONDARY CONTROLS:



The SECONDARY controls, labeled in YELLOW, start out as preselected settings determined by the selection of one of the three available PRESET STARTING PROGRAMS; "A" COIN & JEWELRY, "B" PROSPECTING & RELIC, "C" BEACH. After setting the PRIMARY controls, set the SECONDARY controls based on application and personal preference.

### I. AUDIO MODE

A. Used after ON/OFF control to select between one of the available PRESET STARTING PROGRAMS; "A" COIN & JEWELRY, "B" PROSPECTING & RELIC, "C" BEACH. These three complete programs are not to be confused with the separate three AUDIO MODES. Before AIR and GND balance, AUDIO MODE selects starting program after AIR and GND balance. AUDIO MODE selects AUDIO MODES.

B. Selects between the three major AUDIO MODES:

1. Audible Threshold indicated as "A" on the display is the preselected starting mode.

a. Audible Threshold mode "A" is a standard motion discrimination mode with a continuous slight tone.

b. When DISC ON control is in ON position (indicated by a prompt on the display beside the DISC ON control) mode "A" accepts or rejects targets based on the discriminate program. The display indications and audio discrimination function separately.

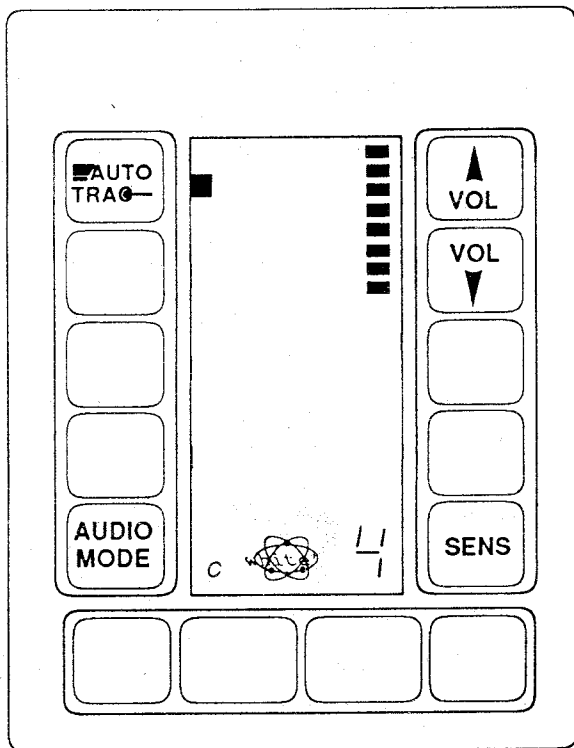
c. When DISC ON control is in the OFF position (no prompt on display beside DISC ON control) mode "A" becomes an all metal non-motion mode.

d. Deeper targets always sound lower in volume when operating in the "A" mode.

e. When the TRIGGER SWITCH is squeezed and held, the display switches to all metal non-motion pinpointing and when the loop is passed over the target "X" ratchet pinpointing will automatically aid in centering the target.

2. Silent Search indicated as "B" on the display is achieved by pressing the AUDIO MODE control once (Be appears on the display).

a. Silent Search is a motion discriminate mode that is silent until a target is accepted.



b. DISC ON control turns ON/OFF the discriminate program, however, the "B" AUDIO MODE is always a motion mode. Audio discrimination is derived from the display indications.

c. Deep and shallow targets respond at the same volume level, when operating in the "B" mode.

d. When the TRIGGER SWITCH is squeezed and held, the display switches to depth and intensity reading, the mode switches to all metal non-motion pinpointing and as the loop is passed over the target "X" ratchet pinpointing will automatically aid in centering the target.

3. Audible Threshold (Tone I.D.) indicated as "C" on the display is achieved by pressing the AUDIO MODE control again (C appears on the display).

a. Audible Threshold Tone I.D. is both a motion and non-motion mode combined, thus SENS (Sensitivity) adjustment A. C. (motion mode) listed next in this section D. C. (non-motion) listed under AUDIO OPTIONS, effect his AUDIO MODE simultaneously.

b. When DISC ON control is in the ON position (indicated by a prompt on display by the DISC ON control) the "C" mode produces a high tone for targets accepted by the discriminate program and a lower or medium tone for targets rejected by the discriminate program. Deeper targets will sound lower in volume. Audio discrimination is derived from the display indications.

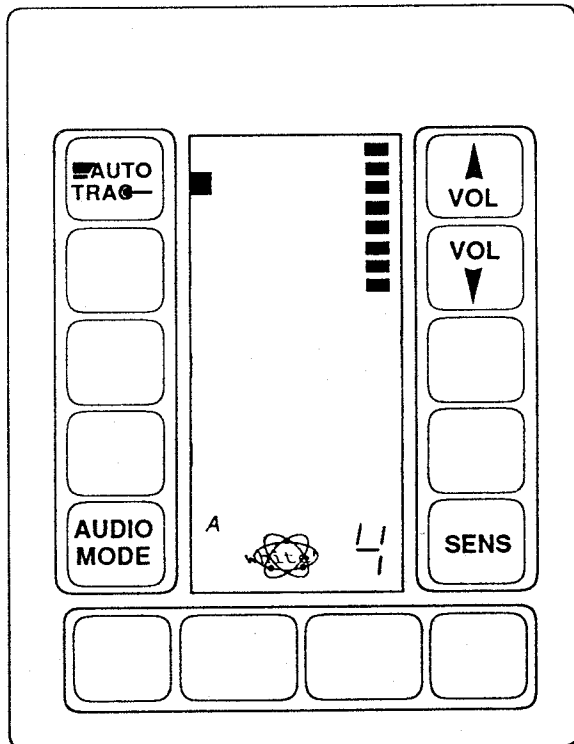
c. When DISC ON control is in the OFF position, (no prompt on display beside DISC ON control) mode "C" produces the medium tone for all metals.

d. When the TRIGGER SWITCH is squeezed and held, the display switches to depth and intensity reading, the mode switches to all metal non-motion pinpointing and as the loop is passed over the target "X" ratchet pinpointing will automatically aid in centering the target.

4. Pressing AUDIO MODE control again will return to "A" Audible Threshold.

C. Selects among AUDIO MODES based on application and personal preference.

D. It is not recommended to avoid ratchet pinpointing, since this is a convenient automatic feature with no known disadvantages. If however, for some reason, you wish to avoid ratchet pinpointing, use AUDIO MODE "A" or "C" and set DISC ON control to the OFF position (no prompt on display beside DISC ON control).



## II. SENS (Sensitivity)

A. Selects between seven A.C. (motion mode) sensitivity levels.

B. Transmit Power remains maximum at all SENS settings, the SENS control is used to adjust the receive.

C. Numbers appear on display by SENS control.

D. High number indicate higher sensitivity levels.

E. Press SENS control to increase sensitivity.

F. Use the highest number that doesn't produce false signals, instability, or a reduction in efficiency.

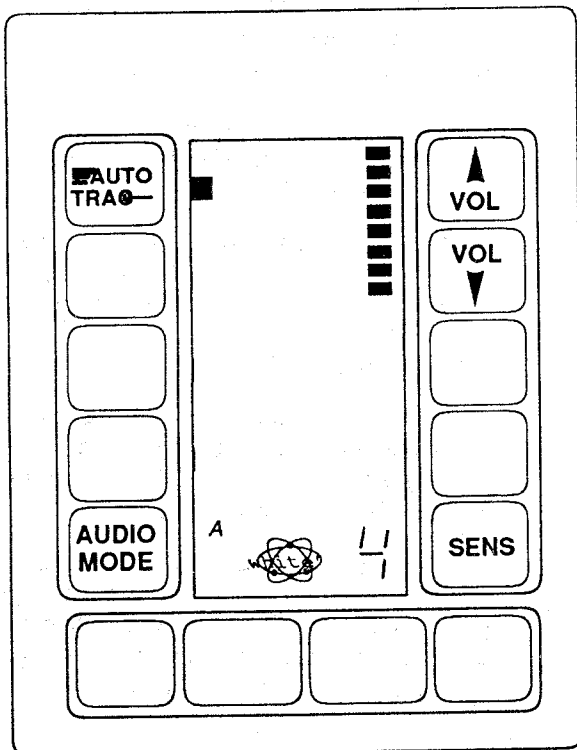
G. The SENS control settings 1 through 7, compensate for both external electrical interference and interference from ground mineralization.

H. As a general rule, high interference areas dictate a lower SENS setting, and low interference areas dictate a higher SENS setting.

I. Sensitivity is adjustable because of different interference levels. Few areas will allow a maximum sensitivity level of 7. Ideally, use the highest level the area will permit. If interference becomes a problem, reduce the sensitivity.

J. If the logo at the bottom of the display fades in and out or disappears completely, refer to the sections describing AUDIO OPTIONS II B. (NORMAL or HIGH MINERAL Transmit Power).

K. High SENS settings may also tend to produce rough sounding tones on both accept and reject targets. If this occurs, reduce SENS setting or sweep the loop slightly higher above located targets, for more accurate discrimination tones.



### III. AUTO TRAC

- A. Automatically makes corrections to the GND (ground) balance as you search.
- B. Starts out turned ON, indicated by a small prompt on the display next to the AUTO TRAC control.
- C. Press once to turn AUTO TRAC feature OFF, small display prompt disappears and GND (ground) balance remains as originally set.
- D. Press again, small prompt appears on display next to AUTO TRAC control. AUTO TRAC is ON.
- E. For most conditions, leave AUTO TRAC on for best results.

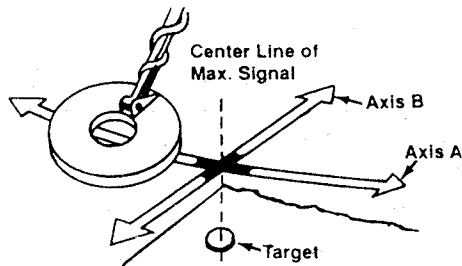
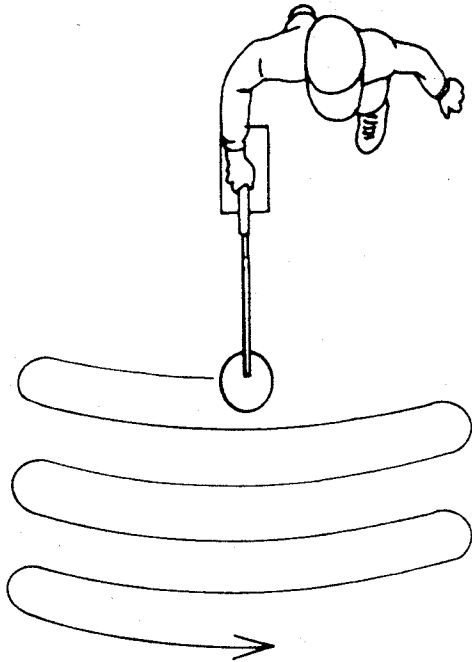
F. In areas of extreme trash, like nails, bottle caps, etc., with high corrosion factors. AUTO TRAC may misinterpret the ground conditions. You may therefore, find that in such extremes, turning OFF the AUTO TRAC is desirable.

### IV. VOL (Volume) Minimum Threshold

- A. Increases or decreases threshold or minimum volume, indicated by a background tone that is barely heard, and is continuous in AUDIO MODES "A" and "C".
- B. Press VOL controls to increase and decrease threshold.
- C. 35 levels are available, represented as segments of the bar graph near VOL controls. The taller the bar graph, the higher the threshold.
- D. Each segment of the bar graph represents multiple threshold levels.
- E. The threshold (VOL controls) may be held down for continuous adjustment up or down the available 35 levels of threshold.
- F. This bar graph is also an intensity scale in the pinpoint mode (TRIGGER squeezed), indicated by an additional line beside the bar graph.
- G. Select the lowest threshold level adequate for your hearing needs.
- H. High threshold will reduce battery life.
- I. See AUDIO OPTIONS for maximum target volume adjustment.

# OPERATION REVIEW

## SECONDARY CONTROLS



First, set the PRIMARY CONTROLS, then:

1. To change AUDIO MODES, press AUDIO MODES control "A" Audible Threshold, "B" Silent Search, "C" Audible Threshold (Tone I.D.). Sequence Repeats.

2. Adjust A.C. (motion mode) sensitivity by pressing SENS control. Use the highest number that doesn't produce false signals. Returns to level one after level seven.

3. Leave AUTO TRAC ON or turn OFF by pressing AUTO TRAC once.

4. Adjust minimum volume (threshold) by pressing VOL controls. Select the lowest level adequate for your hearing needs.

5. You are now ready to search. Discrimination and all other settings have been preselected based on the chosen PRESET STARTING PROGRAM; "A" COIN & JEWELRY, "B" PROSPECTING & RELIC, "C" BEACH.

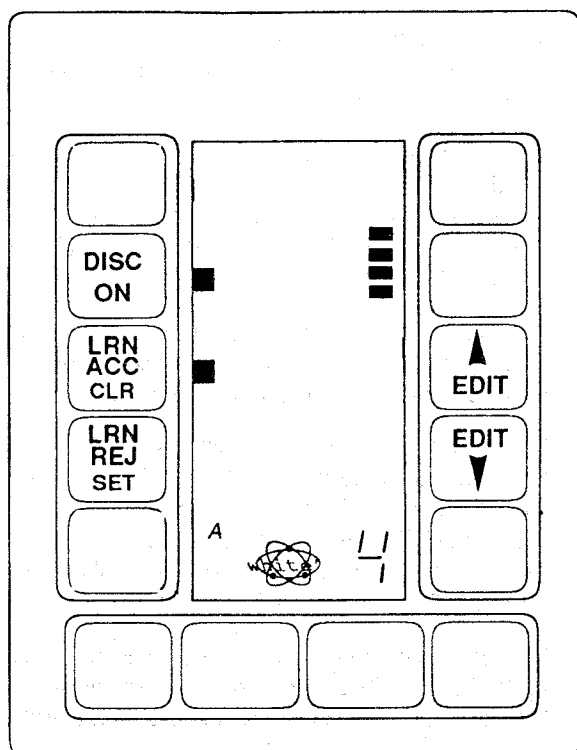
6. Sweep the loop smoothly and evenly over the ground, slightly overlapping each sweep. The loop must be in motion for detection of metal.

7. Once a consistently good beep and display indications are noted, squeeze and hold the TRIGGER SWITCH and "X" the target. The loudest volume and shallowest DEEP number indicate target center. The loop does not have to be in motion when the TRIGGER SWITCH is squeezed and held.

8. After recovering the target, squeeze and release the TRIGGER SWITCH with the loop at waist level before continuing. This resets or clears for further searching.

9. The SECONDARY controls should be understood thoroughly before continuing.

## EXPLANATION OF DISCRIMINATE CONTROLS



After setting the PRIMARY and SECONDARY controls, use the DISCRIMINATE CONTROLS, labeled in BLUE to program or adjust DISCRIMINATION OPTIONS. Preset settings are based on the selected starting programs; "A" COINS & JEWELRY, "B" PROSPECTING & RELIC, "C" BEACH. Use the DISCRIMINATE controls to change PRESET settings.

### I. DISC ON (Discriminate ON/OFF)

A. Discrimination ON is indicated by a small prompt on the display beside the DISC ON control.

B. Press once, small prompt on display disappears, now the discriminate circuit is OFF and all metals strong enough to be detected will be.

C. Press again, small prompt on display appears and metals are accepted or rejected based on the discriminate memory.

### II. LRN ACC CLR (Learn Accept Clear)

A. Used to learn to accept target samples; "Teach Accept".

B. To LEARN ACCEPT, first set PRIMARY and SECONDARY controls.

1. Then, press LRN ACC CLR control once. MEM should appear on the display as well as a small prompt beside LRN ACC CLR control.

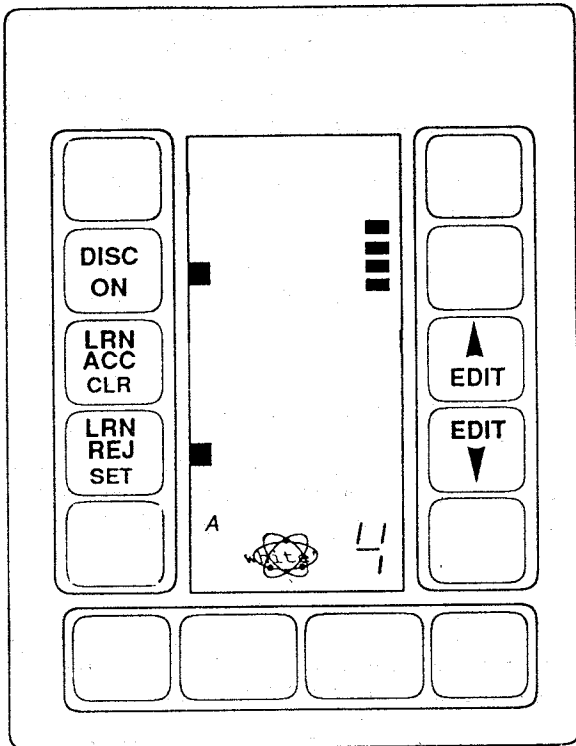
2. Pass the targets one at a time to be LEARN ACCEPTED about four inches from the loop, four to six passes or until the good tone is consistent.

3. Press LRN ACC CLR again, MEM and small prompt on display should disappear and you are ready to search. The instrument will accept the target samples, plus any others already accepted from the previous program (discriminate memory).

C. Do not attempt to LEARN targets that do not produce consistent tones and display indications, such as iron alloys, bottle caps, and any other alloys containing both ferrous and non-ferrous metals.

D. You may use target samples in the air or in the ground to LEARN ACCEPT, however, if you use target samples in the ground, first check the area with DISC OFF to assure there are no other metals present.

E. Used to clear targets for accept response during EDITING. See EDIT controls.



### III. LRN REJ SET (Learn Reject Set)

A. Used to learn to reject target samples; "TEACH REJECT".

B. To LEARN REJECT, first set PRIMARY and SECONDARY controls.

1. Press LRN REJ SET control once. MEM should appear on the display as well as a small prompt near LRN REJ SET control.

2. Pass the targets to be learned reject, one at a time about four inches from the loop, four to six passes or until the reject tone is consistent.

3. Press LRN REJ SET again, MEM and small prompt on display should disappear and you are ready to search. The instrument will reject the target samples, plus any other already rejected from the previous program (Discriminate Memory).

C. Do not attempt to learn targets that do not produce consistent tone and display indications, such as iron alloys, bottle caps, and any other alloys containing both ferrous and non-ferrous metals.

D. You may use target samples in the air or in the ground to LEARN REJECT, however, if you use target samples in the ground, first check the area with DISC OFF to assure there are no other metals present.

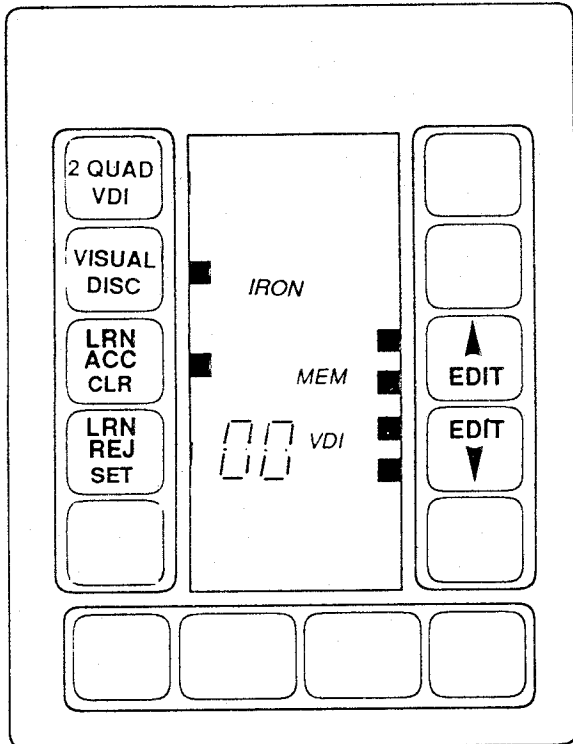
E. Use to SET targets for rejection or discriminate response during EDITING. See EDIT controls.

### IV. EDIT (Manual Discriminate Options)

A. Used to enter the EDIT (Discriminate Option) mode and scroll or view the LOW 96-0-95 target numbers.

B. First set PRIMARY and SECONDARY controls and make sure TRIGGER SWITCH is in the center position.

C. Press either EDIT control once to enter the EDIT mode. The instrument will not respond to metal in this mode. MEM should be visible on the display.



D. Now use the EDIT controls to scroll up and down the 96-0-95 target range.

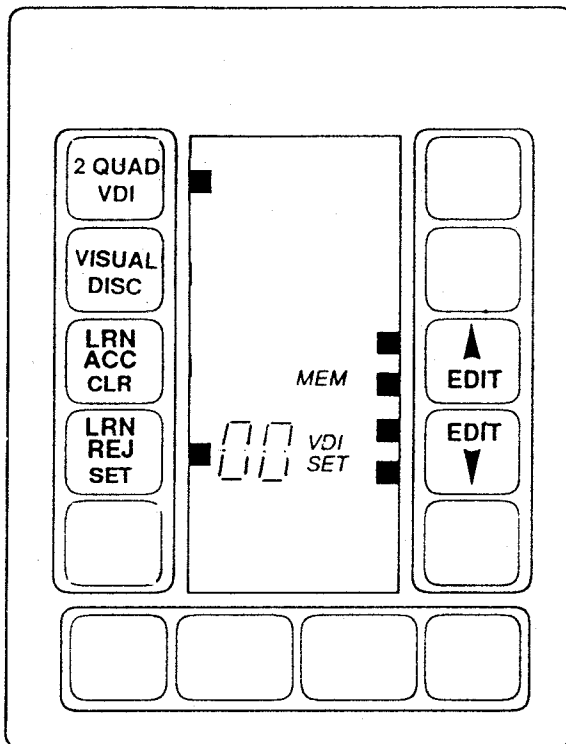
1. When SET appears on the display, that target number is SET for rejection.
2. When SET doesn't appear on the display, that target number is clear to be accepted.
3. For each of the target numbers you want to change, press either LRN ACC (CLR) to CLEAR that target number to be accepted or press the LRN REJ (SET) to SET that target number to be rejected.

E. Use the chart on the top of the control box as a reference to the various target numbers.

F. To exit the EDIT mode to an operate mode, squeeze and release the TRIGGER SWITCH.

#### V. BLOCK EDIT (Editing large section of the target range)

1. First set PRIMARY and SECONDARY controls and make sure TRIGGER SWITCH is in the center position.
2. Press either EDIT control once to enter EDIT mode. MEM should appear on the display.
3. To clear or accept a large section of the target range, press LRN ACC CLR twice. Small prompt should appear on display near LRN ACC CLR control.
  - a. Now use EDIT controls to adjust block.
  - b. Each target number that comes into view will automatically be CLEAR for accept.
  - c. To exit BLOCK EDIT mode to regular EDIT mode, press LRN ACC CLR control again. Small prompt disappears from display near LRN ACC CLR control.
  - d. To exit BLOCK EDIT mode to an operate mode, squeeze and release the TRIGGER SWITCH.



4. To set or reject a large section of the target range, press LRN REJ SET twice. Small prompt should appear on display near LRN REJ SET control.

a. Now use EDIT control to adjust block.

b. Each target number that comes into view will automatically be SET for reject.

c. To exit BLOCK EDIT mode to regular EDIT mode, press LRN REJ SET control again. Small prompt disappears from display near LRN REJ SET control.

d. To exit BLOCK EDIT mode to an operate mode, squeeze and release the TRIGGER SWITCH.

#### G. TWO QUADRANT V.D.I.

Displays two V.D.I. target ranges LOW 96-0-95, during normal operation, to allow more precise identification of iron.

1. First, set PRIMARY and SECONDARY controls and make sure the TRIGGER SWITCH is in the center position.

2. Press either EDIT control once to enter EDIT mode. MEM should appear on display.

3. Press AUTO TRAC control once to turn on TWO QUADRANT V.D.I. Small prompt should appear on display near AUTO TRAC.

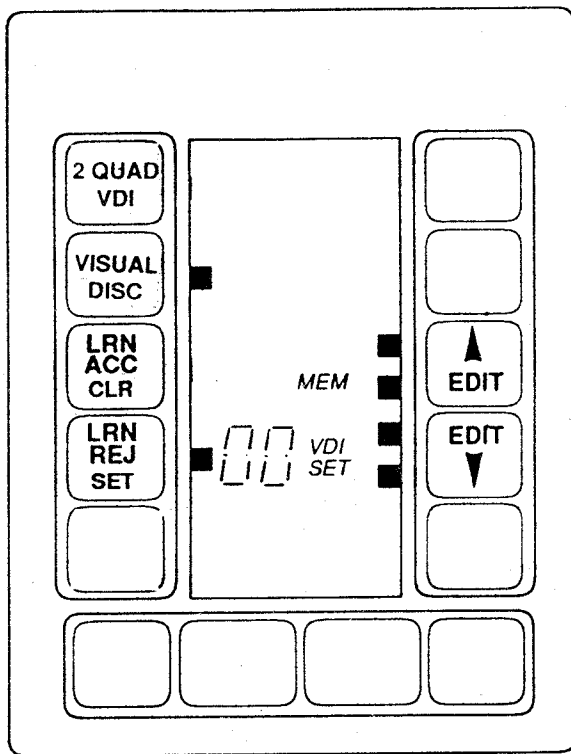
4. Press AUTO TRAC control again to turn OFF TWO QUADRANT V.D.I. Small prompt should disappear from display.

5. To exit to an operate mode, squeeze and release the TRIGGER SWITCH.

6. All target number LOW 96-0-95 can be programmed for accept or reject. (See EDIT)

7. When TWO QUADRANT V.D.I. is turned ON, regardless of whether LOW 96-0 target number are accepted or rejected, LOW will appear at the bottom of the display when LOW 96-0 targets are present.

8. If you wish to view target number in this LOW 96-0 category, they must be programmed for accept, or the next option, VISUAL DISC, must be turned OFF.



## VISUAL DISC

Eliminates V.D.I. target numbers from appearing on the display, if they are programmed for reject.

1. First set PRIMARY and SECONDARY controls and make sure TRIGGER SWITCH is in the center position.
2. Press EDIT control once to enter the EDIT mode, MEM should be visible on the display.
3. Press DISC ON control once to turn on VISUAL DISC. Small prompt should appear on display near DISC ON control.
4. Press DISC ON control again to turn OFF VISUAL DISC. Small prompt disappears from display.
5. Target numbers that appear or do not appear are based on the main discriminate memory (LRN ACC, LRN REJ, EDIT).

6. VISUAL DISC is separate from the audio discriminator. However, both are programmed at the same time via main discriminate memory (LRN ACC, LRN REJ, EDIT).

7. To exit to an operate mode, squeeze and release the TRIGGER SWITCH.

## MEMORY RECOVERY

Retaining a program or setting you have selected.

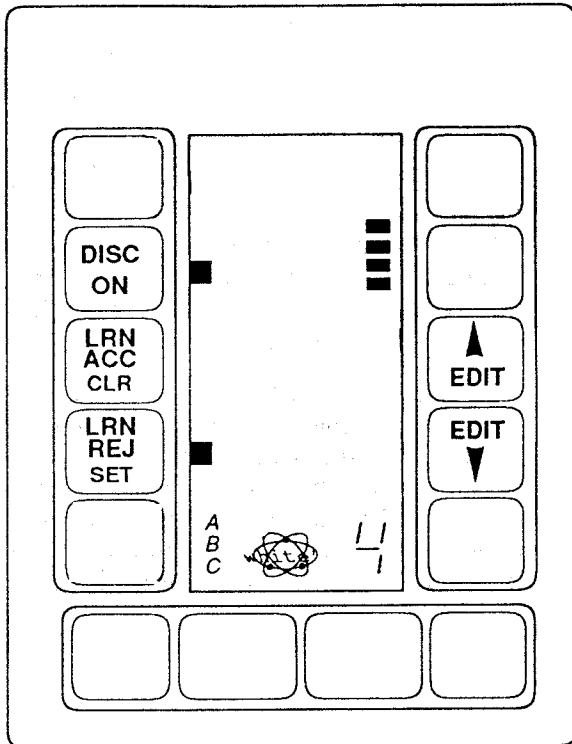
1. Once the instrument is turned OFF, then turned ON again and GND balanced, all discriminate memory as well as all other settings will revert to the preselected settings based on the selected Preset Starting Program; "A" COINS & JEWELRY, "B" PROSPECTING & RELIC", and "C" BEACH.
2. To retain discriminate memory program settings you have selected, as well as all other settings, immediately after pressing ON/OFF control to turn the instrument ON, squeeze and release the TRIGGER SWITCH.
3. MEMORY RECOVERY will only work if the battery remains within 3.8 - 6.0 volts and is not removed for more than 30 seconds.
4. Removing the battery before turning the instrument OFF will cancel the memory.
5. If an operator moves to a different area and wishes to return the memory, immediately after pressing the ON/OFF control to turn the instrument ON, squeeze and release the TRIGGER SWITCH, then AIR and GND balance for the new conditions. This will allow all setting to remain the same except for a new AIR/GND balance.

# OPERATION REVIEW

## OF

## DISCRIMINATE

## CONTROLS



First set the PRIMARY and SECONDARY controls, then:

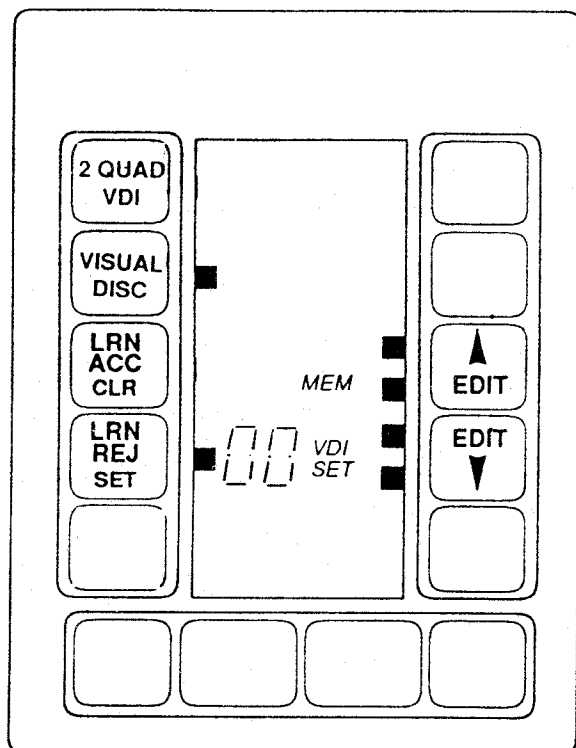
1. Switch entire discriminate circuit OFF or back ON by pressing DISC ON control. Prompt indicates ON, no prompt indicates OFF.

2. Program Discrimination Learn by pressing either LRN ACC (Learn Accept) or LRN REJ (Learn Reject) once, PROMPT and MEM appear on display. Pass sample targets four to six times or until desired tone is heard about four inches from the loop. Press LRN ACC (Learn Accept) or LRN REJ (Learn Reject) again to return to operate. PROMPT and MEM disappear.

3. EDIT Discrimination MEMORY by pressing either EDIT control to enter EDIT, (Discriminate Option) mode. MEM appears on display. Use EDIT controls to view the entire LOW 96-0-95 V.D.I. range and corresponding indication (iron, foil, nickel, etc.). SET appears on the display for target numbers SET for rejection. SET does not appear for target number CLEAR for acceptance. For each of the LOW 96-0-95 target numbers you wish changed, press either CLR (LRN ACC) to CLEAR for accept or SET (LRN REJ) to SET for rejection. Squeeze and release the TRIGGER SWITCH to return to a search mode.

4. To BLOCK EDIT large sections of the LOW 96-0-95 target range, first press either EDIT control to enter the EDIT mode. MEM appears on the display. Then press twice either CLR (LRN ACC) or SET (LRN REJ). Prompt should appear on the display. Now each V.D.I. number that appears on the display throughout the use of the EDIT controls will automatically be either CLR (LRN ACC) or SET (LRN REJ) whichever was pressed. Press the same control (CLR or SET) to exit to regular EDIT mode or squeeze and release the TRIGGER SWITCH to exit to an operate mode.

5. To turn ON TWO QUADRANT V.D.I. first press either EDIT control to enter the EDIT (Discriminate Option) mode. Then press AUTO TRAC control once, a small prompt should appear on the display near the AUTO TRAC control. Squeeze and release the TRIGGER SWITCH to exit to an operate mode.



Repeat process (push either EDIT control, push AUTO TRAC control. Small prompt disappears from display near AUTO TRAC control) to turn OFF TWO QUADRANT V.D.I.

6. To turn ON VISUAL DISC first press either EDIT control to enter the EDIT (Discriminate Option) mode. Then press DISC ON control once, a small prompt should appear on the display near the DISC ON control.

Squeeze and release the TRIGGER SWITCH to exit to an operate mode. Repeat process (push either EDIT control, push DISC ON control, small prompt disappears from display near DISC ON control) to turn OFF VISUAL DISC.

7. You are now ready to search. Sweep the loop smoothly and evenly over the ground slightly overlapping each sweep. The loop must be in motion to detect metals.

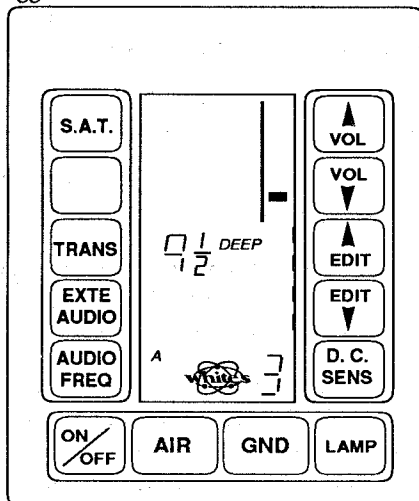
8. Once a consistently good beep and display indication are noted, squeeze the hold the TRIGGER SWITCH and "X" the target. The loudest volume and shallowest DEEP number indicate target center. The loop does not have to be in motion to detect metals when the TRIGGER SWITCH is squeezed and held. After recovering the target and before continuing to search, squeeze and release the TRIGGER SWITCH with the loop at waist level to reset or clear for further searching.

9. After turning the instrument OFF, Discriminate Memory and all other settings prior to turning the instrument OFF may be retained. To retain these settings after press the ON/OFF control to turn the instrument ON, immediately squeeze and release the TRIGGER SWITCH, "Memory Recovery" is then activated and all controls return to their prior settings.

# AUDIO

## OPTIONS

 **AUDIO OPTIONS**  
To Enter, Lock Trigger  
Trigger Locked



To Exit, Squeeze & Release Trigger.

When the TRIGGER SWITCH is squeezed or pushed forward to the lock position, the SECONDARY controls labeled in YELLOW and DISCRIMINATE controls labeled in BLUE change to adjust AUDIO OPTIONS. All the following adjustments are made with the TRIGGER SWITCH either squeezed and held or pushed forward to lock.

I. SECONDARY control labeled YELLOW, when the TRIGGER SWITCH is squeezed.

A. AUTO TRAC control turns ON/OFF S.A.T. (Self Adjusting Threshold) which maintains an even threshold over inconsistent ground. Press AUTO TRAC control once, prompt beside AUTO TRAC control indicates S.A.T. is ON, press again, prompt disappears indicating S.A.T. is OFF.

1. S.A.T. is best used in AUDIO MODES, "A" or "C" when DISC control is OFF, (detecting all metals).

2. When using S.A.T., the loop should always be in motion (swept) in order to detect metals.

3. See ADVANCED OPTIONS for additional adjustment of S.A.T.

B. AUDIO MODE control adjusts AUDIO FREQUENCY (pitch). Press AUDIO MODE control to select between the three available audio frequencies. Select a frequency based on personal preference.

1. Starts out in "B" NORMAL frequency.

2. Press once for "C" HIGH frequency.

3. Press again for "A" LOW frequency.

4. Press again and returns to "B" (repeats).

C. VOL (Volume) controls maximum target volume. Press the upper VOL control to increase the lower VOL control to decrease maximum target volume.

1. Select the lowest volume adequate for your hearing needs.

2. High volume levels will reduce battery life.

3. Volume level will be indicated by a tone (beep) as the VOL controls are adjusted.

4. Unlike many motion discriminate models, the deeper targets will normally sound softer or lower in volume. When using AUDIO MODES "A" and "C". This feature has been found to be an advantage in most operating conditions.

D. SENS (Sensitivity) control adjusts D. C. (non-motion) sensitivity, and PINPOINTING MODE (TRIGGER SWITCH squeezed and held) Sensitivity.

1. Five levels are available.
2. Press SENS control to increase D.C. Sensitivity.
3. High numbers indicate high sensitivity levels.
4. Returns to level 1 after level 5.
5. Use the highest number that doesn't produce false signals, instability, or reductions in efficiency.
6. Sensitivity is adjustable because of different interference levels, both external electrical and ground conditions. Few areas will allow a maximum sensitivity level of 5. Ideally, use the highest level the area will permit. If interference becomes a problem, reduce sensitivity.
7. As a general rule, high interference areas dictate a lower SENS setting and low interference areas dictate a higher SENS setting. Efficiency may improve by either a higher or lower setting.

8. If the White's logo on the bottom of the display is fading, refer to II B of this section.

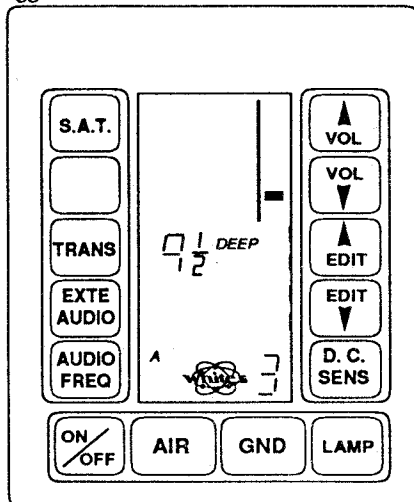
II. The DISCRIMINATE CONTROLS labeled in BLUE when the TRIGGER SWITCH is squeezed.

A. The DISC ON control is not used, therefore, will have no effect either ON (Prompt) or OFF (No Prompt) when the trigger is squeezed.

B. The LRN ACC control selects either NORMAL or HIGH MINERAL Transmitt Power. Transmit Power always starts at NORMAL. Extreme conditions, such as wet salt sand, rusty dirt, or black sand, which cause the White's logo on the bottom of the display to fade indicating that the HIGH MINERAL position should be selected.

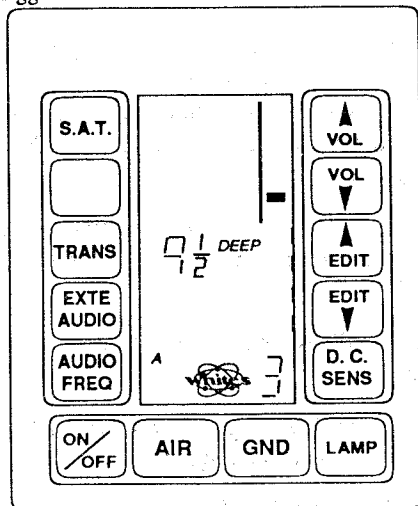
1. Press LRN ACC control once, prompt appears beside LRN ACC control indicating Transmit Power is at the HIGH MINERAL.

 **AUDIO OPTIONS**  
To Enter, Lock Trigger  
Trigger Locked



To Exit, Squeeze & Release Trigger.

**AUDIO OPTIONS**  
To Enter, Lock Trigger



To Exit, Squeeze & Release Trigger.

2. Press LRN ACC control again, prompt disappears indicating Transmit Power is at the NORMAL selections.

3. When searching, if you notice the logo at the bottom of the display fading in and out or completely disappearing, proceed as follows:

a. Sweep the general area, with the loop slightly lifted from the ground, to assure individual targets usually large, are not causing the problem.

b. If the entire area seems to cause the logo to fade (BAD GROUND) then switch to HIGH MINERAL position.

c. Whenever this control is changed, reground balance using the AIR/GND controls.

d. Refer to ADVANCED OPTIONS SIG BAL (Signal Balance) control for optional fine adjustments.

C. The LRN REJ control turns ON/OFF EXTENDED AUDIO, which uses audio frequency and volume level to indicate target intensity in the non-motion modes "A" and "C" (DISC OFF).

1. Press LRN REJ control once, prompt appears beside LRN REJ control indicating EXTENDED AUDIO is ON.

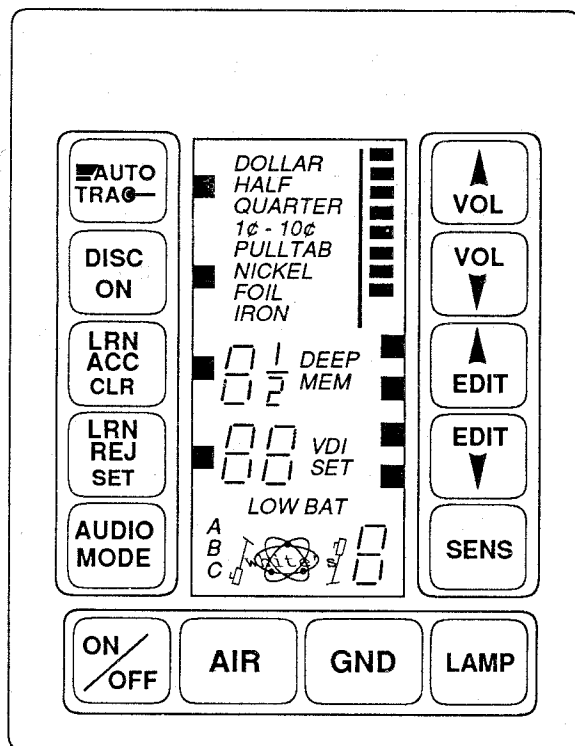
2. Press LRN REJ control again, prompt disappears indicating EXTENDED AUDIO is OFF.

3. EXTENDED AUDIO only functions in AUDIO MODES "A" and "C".

D. Pressing either EDIT control switches to ADVANCED OPTIONS.

1. See ADVANCED OPTIONS for more information.

# DISPLAY



I. The DISPLAY provides a wealth of information for the operator.

A. When first turned ON, the DISPLAY will complete a self test by showing everything for a few seconds.

B. The DISPLAY will then clear and request selection of one of the three available PRESET STARTING PROGRAMS; "A" COINS & JEWELRY, "B" PROSPECTING & RELIC, "C" BEACH and request an AIR balance. This is the only opportunity you will have to select a starting program. If you wish to change starting programs after you AIR/GND balance, you must turn the detector OFF and start over.

1. First press the AUDIO MODE control to select the Preset Starting Program; "A", "B", or "C", which appears beside the AUDIO MODE control.

2. Now hold the loop in the air, waist level, away from known metals or the ground and press the AIR control.

3. If AIR balance was in error, AIR balance prompt will continue to be visible on the DISPLAY. (Reposition the loop, away from known metals or the ground and again press AIR control). GND prompt should appear.

C. The GND prompt indicates GND balance is required. (Place loop flat on ground and press GND control).

D. The DISPLAY shows the setting or level of each control.

1. Beside the AUDIO MODE control on the display after AIR/GND balancing:

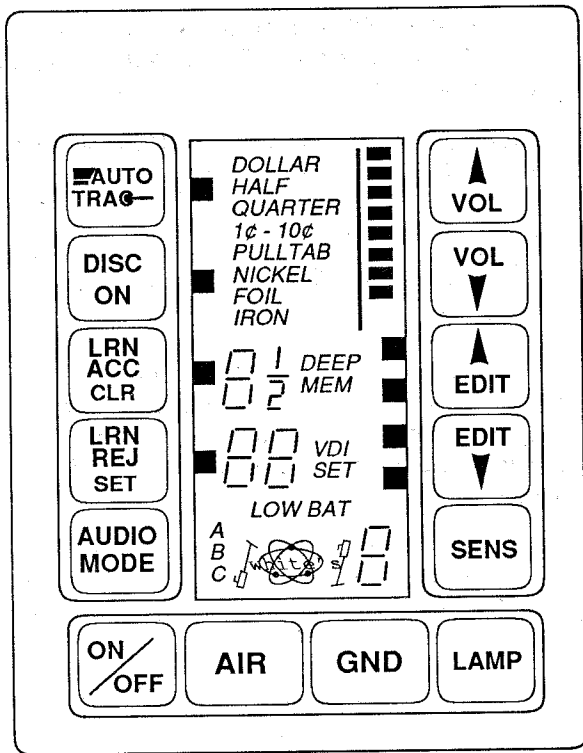
"A" indicates Audible Threshold mode

"B" indicates Silent Search

"C" indicates Audible Threshold (Tone I.D)

2. Beside the SENS (sensitivity) control on the display, numbers indicated the sensitivity level. The higher the number the more sensitive the setting.

3. Next to the VOL (volume) control on the display, minimum volume or threshold is indicated by a bar graph. The taller the bar graph the higher the VOL (threshold) level.



4. MEM (memory) appearing on the display indicates the discriminate memory is open for adjustment.

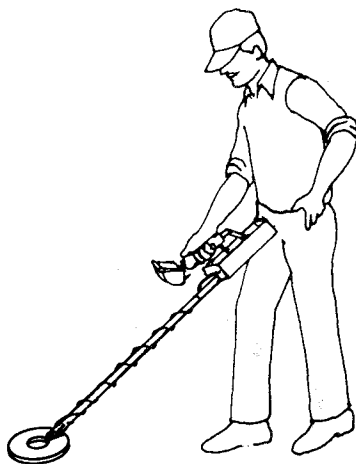
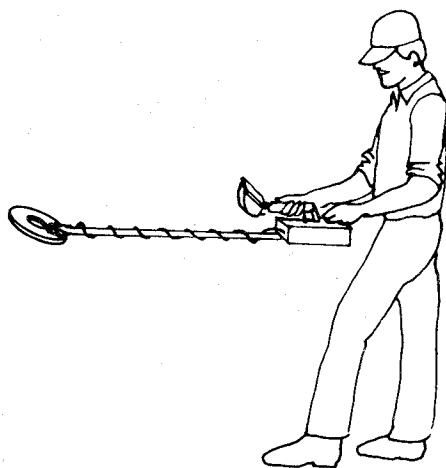
5. White's logo appearing at the bottom of the display indicates the instrument is in an operating mode and will respond to metal. If when operating in normal search mode, White's logo disappears from the display, the instrument is overloading due to a strong target, lift the loop a few inches higher and again sweep the area where the overload occurred to assure it was not caused by one individual large target. If the entire area is causing such overloading, refer to the section under AUDIO OPTIONS II B.

6. Reasonably consistent or repeatable V.D.I. numbers and corresponding indications -- iron, foil, nickel, tab, etc., indicate targets probable identity.

7. When the TRIGGER SWITCH is squeezed and held the display switches to indicated the depth of coin sized targets. The "DEEP" number is the depth in inches. The depth indication is calibrated with the 950 loop, coin sized targets, and SIG BAL control at PRESET.

8. The status of the other controls are indicated by a prompt (small square beside control) if that control or function is ON, and no prompt is visible when that control function is OFF.

# STEP BY STEP TUNING



1. TRIGGER SWITCH, center (search) position, SIG BAL control on front of the instrument to the PRESET position.

2. Press ON/OFF and wait for the DISPLAY to clear. Showing Preset Starting Program "A" and AIR prompt.

3. Select Preset Starting Program by pushing AUDIO MODE control; "A" COINS & JEWELRY, "B" PROSPECTING & RELIC, and "C" BEACH.

4. Hold loop waist level, away from known metals or the ground and press AIR. If you hear a multinode beep, reposition the loop and again press AIR. You should hear a solid beep and GND prompt should appear.

5. Place the loop flat on the ground and press GND control. If you hear a multinode beep, reposition the loop and again press GND. If multinode beep persists, ignore it.

6. To check battery voltage, press and hold LAMP control.

7. To turn LAMP ON or OFF, press LAMP control.

8. To change AUDIO MODES, press AUDIO MODE; "A" Audible Threshold, "B" Silent Search, and "C" Tone I.D.

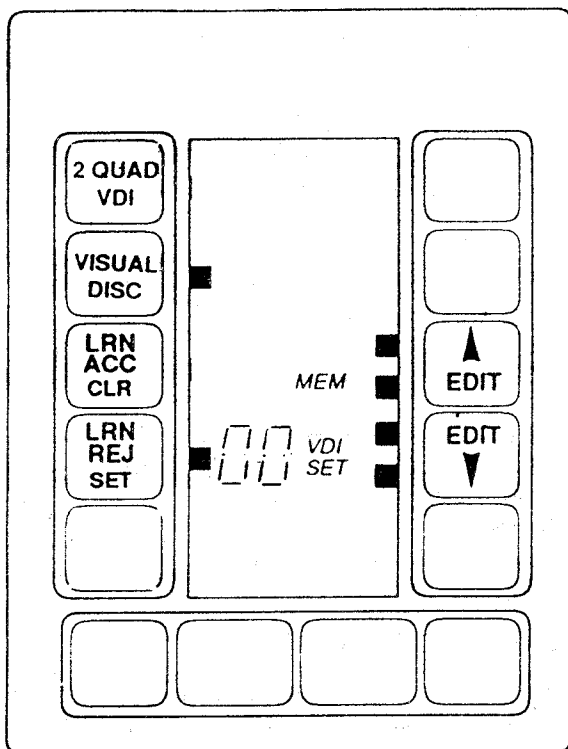
9. Adjust A. C. (motion mode) sensitivity by pressing SENS control. Use the highest number that does not produce false signals. (Returns to level 1 after level 7).

10. Leave AUTO TRAC ON or turn OFF by pressing AUTO TRAC once.

11. Adjust minimum volume (threshold) by pressing either the upper or lower VOL controls.

12. Switch OFF or turn back on audio discriminate circuit by pressing DISC ON control.

13. Teach discrimination, program discriminate Learn by pressing either LRN ACC (Learn Accept) or LRN REJ (Learn Reject) once, PROMPT and MEM appears on display, then pass sample targets four to six times about four inches from the loop. Press LRN ACC or LRN REJ again to return to operate. PROMPT and MEM disappear.



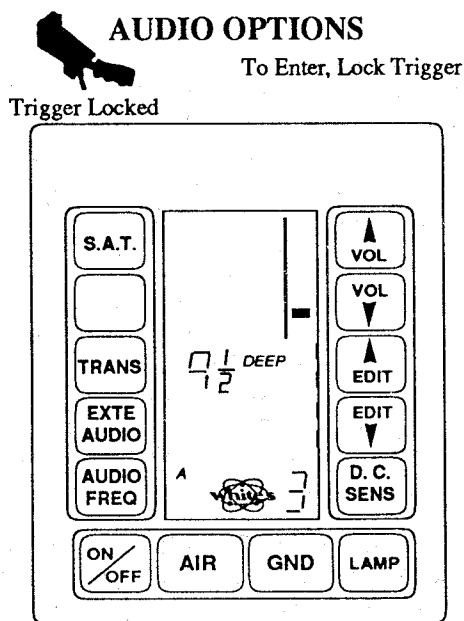
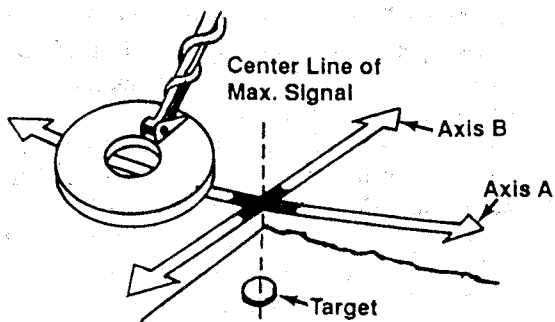
14. Manually EDIT Discriminate Program by pressing either EDIT control to enter the EDIT mode, MEM appears on the display. Use the EDIT control to view the entire LOW 96-0-95 target range and corresponding indication -- iron, foil, nickel, etc. SET appears on display for targets SET for rejection. SET does not appear for V.D.I. numbers CLEAR for acceptance. For each of the LOW 96-0-95 target numbers you wish to change, press either CLR (LRN ACC) to clear that target number to be accepted or SET (LRN REJ) to set that target number for rejection. Squeeze and release the TRIGGER SWITCH to exit to an operate mode.

15. To BLOCK EDIT large sections of the LOW 96-0-95 target range, first press either EDIT control to enter the EDIT mode, MEM appears on the display. Then press twice either CLR (LRN ACC or SET (LRN REJ). Prompt should appear on the display. Now each V.D.I. number that appears on the display throughout the use of the EDIT control will automatically be either CLR (LRN ACC) or SET (LRN REJ) whichever was pressed. Press the same control (CLR or SET) to exit to the regular EDIT mode, squeeze and release the TRIGGER SWITCH to exit to an operate mode.

16. To turn ON or OFF TWO QUADRANT V.D.I. (LOW 96-0 target range) first press either EDIT control to enter EDIT mode, then press AUTO TRAC control, prompt appears beside AUTO TRAC indicating ON. Press AUTO TRAC again, prompt disappears, indicating TWO QUADRANT V.D.I. is OFF. Squeeze and release TRIGGER SWITCH to exit to an operate mode.

17. To turn ON or OFF VISUAL DISC (eliminates rejected V.D.I. numbers from appearing) first press either EDIT control to enter the EDIT mode, then press DISC ON control, prompt appears beside DISC ON indicating ON. Press DISC ON again, prompt disappears indicating VISUAL DISC is OFF. Squeeze and release TRIGGER SWITCH to exit to an operate mode.

18. You are now ready to search. Sweep the loop smoothly and evenly over the ground, slightly overlapping each sweep. The loop must be in motion to detect metals.



To Exit, Squeeze & Release Trigger.

19. Once a consistent tone and good display indication are noted, squeeze and hold the TRIGGER SWITCH and "X" the target. The loudest volume and shallowest "DEEP" reading indicate target center.

20. After recovering the target and before continuing the search, squeeze and release the TRIGGER SWITCH with the loop at waist level to reset or clear for further searching.

21. To turn the instrument OFF, press ON/OFF control.

22. To retain settings prior to turning OFF, squeeze and release the TRIGGER SWITCH immediately after pressing ON/OFF control to turn the instrument ON.

23. When the TRIGGER SWITCH is squeezed and held or pushed forward to LOCK, AUDIO OPTIONS are made possible. Release TRIGGER SWITCH to return to normal operation.

#### A. S.A.T. (Self Adjusting Threshold)

Squeeze and hold TRIGGER SWITCH, press AUTO TRAC, prompt appears indicating ON. Press AUTO TRAC again, prompt disappears indicating OFF.

#### B. AUDIO FREQUENCY (Pitch)

Squeeze and hold TRIGGER SWITCH press AUDIO MODE control to select between the three available AUDIO FREQUENCIES; "B" Normal, "C" High, and "A" Low, (Repeats)

#### C. TARGET VOLUME

Squeeze and hold TRIGGER SWITCH, press VOL controls to adjust TARGET VOLUME indicated by a tone (beep) as adjustment is made.

#### D. D. C. SENS (Non-Motion Mode Sensitivity)

Squeeze and hold TRIGGER SWITCH, press SENS control to select levels 1-5 D. C. (Non-Motion) Sensitivity. Use the highest number that doesn't produce false signals.

#### **E. NORMAL/HIGH MINERAL**

(Transmit Power)

Squeeze and hold TRIGGER SWITCH, press LRN ACC control, prompt appears indicating HIGH MINERAL selection is ON. Press LRN ACC again, prompt disappears, indicating NORMAL selection is ON.

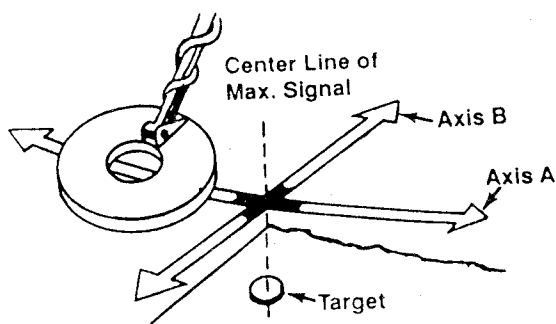
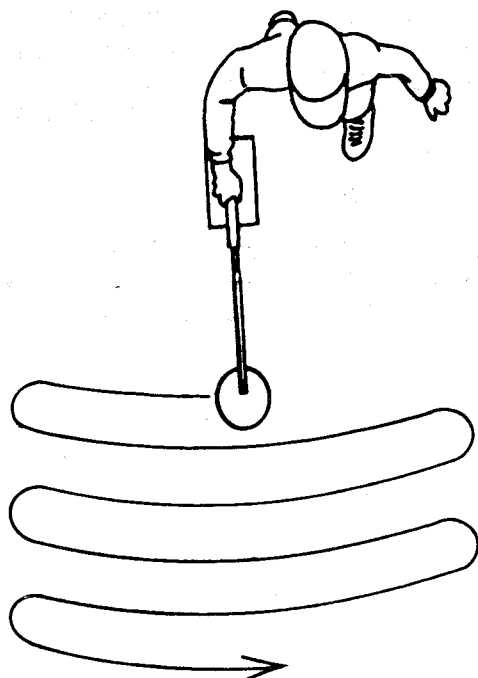
#### **F. EXTENDED AUDIO**

Squeeze and hold the TRIGGER SWITCH, press LRN REJ control, prompt appears indicating ON. Press LRN REJ again, prompt disappears, indicating OFF. Only works in "A" or "C" AUDIO MODES with DISC OFF.

#### **G. ADVANCED OPTIONS**

Squeeze and hold TRIGGER SWITCH, press either EDIT control to enter ADVANCED OPTIONS. See ADVANCED OPTIONS for details.

# SEARCH METHODS AND PINPOINTING



## SEARCH METHODS:

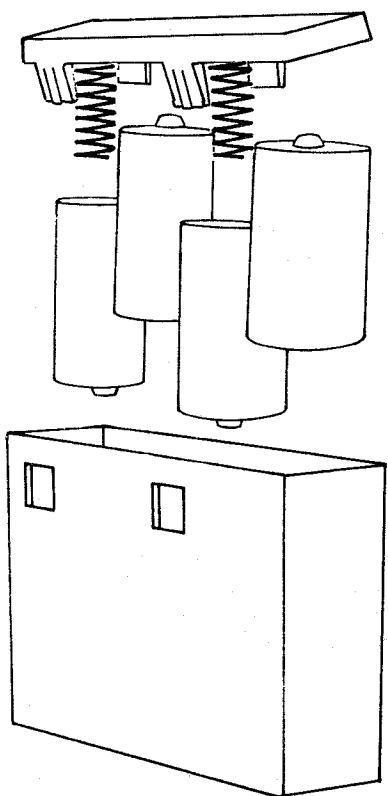
1. Always keep the loop flat and parallel to the ground. When raised, the depth penetration is decreased.
2. Swing the loop in front while searching. Each swing may cover an area from 4-6 feet in width.
3. The loop should be passed along the ground in smooth, even swings. It does not have to be swung quickly, in fact, slow sweeps will enhance performance.
4. When a target is detected, sweep it from several directions, noting its AUDIO and VISUAL characteristics.
5. Before recovering an item, note its depth on the DISPLAY. This will help avoid hitting or marring the object during removal.

## PINPOINTING:

1. Once you have determined a target is worth digging, squeeze and hold the TRIGGER SWITCH. This activates the pinpoint mode and displays depth and intensity readings.
2. Watch the display as the loop is moved over the target "X".
3. When the display "DEEP" number reaches its lowest number (the shallowest depth) and the intensity bar graph (beside VOL controls) reaches its tallest point, the target is directly below the center of the loop. Read the depth and dig.

Accurate pinpointing makes recovering targets easier; it minimizes the possibility of damaging the object and it minimizes damage to the area. Pinpointing is an important part of successful treasure hunting. Experience will help you develop this skill.

# STANDARD BATTERIES

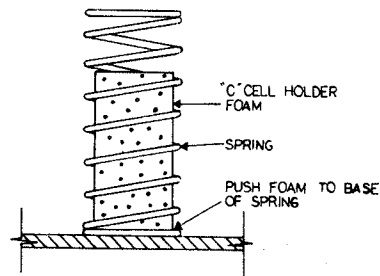


The standard battery pack hold four ALKALINE batteries. Alkaline batteries are the only disposable batteries recommended for this instrument. To insert the batteries, proceed as follows:

1. Remove the battery pack from the instrument.
2. Remove the battery pack lid gently pulling the top sides of the pack apart until the lid springs up, or apply gently pressure down on the four locking tab openings, two on each side.
3. Note the position of each cell. (The flat side of each cell fits against one of the four springs.)
4. Remove the dead batteries and replace them with new ones. (If the cells are put in backward, the detector will not work).
5. Line up the locking tabs on the lid with the holes on the battery pack. Snap them together.
6. Insert the battery pack into the detector. The two terminal points must touch the pointed contacts inside the instrument.

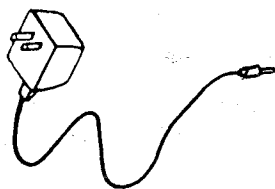
## INSTALLATION INSTRUCTIONS:

1. Push foam into the four springs.
2. Install four batteries (not included) with the flat side of each cell against one of the four springs. (If cells are in backward, the detector will not work).

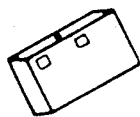


Installation Instructions:

## RECHARGEABLE BATTERIES



Charger



Rechargeable Battery

Rechargeable NICKEL CADMIUM batteries are included with this instrument. These can be recharged up to 1,000 times if the batteries have not been stored for extended periods of time (several years). Charge will last approximately 7 hours after a full charge. Charge the rechargeable batteries before their first use.

### RECHARGE THE BATTERIES:

1. If the batteries have not been recharged for more than two months. (Batteries slowly lose their charge when stored).
2. **NOTE:** Charge the batteries only when necessary. Unnecessary recharging shortens the life of the battery pack.

### OPERATING THE CHARGER:

1. Insert the charger plug into the battery pack. **NOTE:** The battery pack may be charged either in or out of the detector.
2. Plug the charger into an electrical outlet. The light on the charger will glow if connected properly.

### CAUTIONS ABOUT THE BATTERIES:

1. The battery pack should not be left on the charger for more than 24 hours.
2. Do not dispose of the batteries in a fire.
3. Protect the battery pack from being shorted. Burns may result and the battery pack may be damaged.
4. The rechargeable battery system (charger & pack) have a specific charge current. Do not attempt to mix other chargers or packs with this system. Batteries may explode if a charger current is too high.
5. Non-rechargeable batteries may explode, if they are recharged.
6. Store batteries in cool, dry place.
7. Avoid an absolute discharge, eliminating all voltage within these batteries will damage them.
8. The rechargeable battery pack is a sealed unit with no customer serviceable parts. Open it may damage the unit and will void the warranty.
9. Store rechargeable batteries with a full charge. When storing rechargeable batteries for extended period of time, always recharge them about once every three months. Batteries stored without a charge may become defective. In many cases, the discharge-recharge cycle to erase the memory will also work to revive batteries that have been in storage.

# **CAUTION:**

## **"MEMORY"**

### **OF**

### **RECHARGEABLE**

### **BATTERIES**

Nickel Cadmium (rechargeable batteries) are long lasting, powerful batteries that are excellent for operating your metal detector. These batteries can be recharged many times, thereby, saving you hundreds of dollars over the hours of their life. But this very rechargeable advantage can have limitations. If these batteries are not discharged proper (no longer test good) they may develop a "MEMORY". This shortens the battery life.

The most common cause for the MEMORY characteristic is repeated booster charges. In other words, if you recharge your batteries over and over again, after only three hours of use, the batteries will eventually only hold a three hour charge.

To avoid the occurrence of this characteristic, it is best to wait until LOW BAT appears on the display before recharging. You may then recharge the batteries for eight to ten hours. This should result in a maximum charge. If your batteries develop a "MEMORY" the following method can be used to erase it:

1. Discharge the rechargeable battery through normal use.
2. Charge the batteries for eight to ten hours.
3. Repeat steps #1 and #2 three to five times or until the "MEMORY" situation is corrected.

If the batteries still have the "MEMORY" characteristic after five discharge-recharge cycles, new batteries are needed. Rechargeable "MEMORY" is not covered by the warranty as it is considered the result of misuse and/or neglect.

New batteries or batteries that have been in storage may require three to five discharge-recharge cycles to reach their full output potential.

In many cases, the charger is the cause of the rechargeable battery problems. When sending in the rechargeable battery for testing, always include the charger and a letter describing the problem you are experiencing.

Rechargeable battery life and longevity will vary with climatic conditions, model, tuning, and operating procedures, as well as individual difference between batteries and instruments of the same type.

# PROPER CARE OF YOUR DETECTOR

The following are precautions you should take to protect your instrument from harm, ensure its long life and void nullifying the warranty.

## **CLEANING:**

The loop and rod or probe are waterproof. They can be cleaned with fresh water and a mild cleanser. After cleaning, however, dry the instrument thoroughly.

**CAUTION:** The instrument case is not waterproof, and water--if allowed to enter it will damage electronic components.

## **WEATHER CONDITIONS:**

Protect your detector from excessively cold weather. Freezing can damage the electronic components, the case and/or the batteries. Excessive heat can also damage the instrument. Never leave it in the sun. If it is left in a car on a hot day, cover it to protect from the direct rays of the sun, and then leave the windows slightly open to permit ventilation. Protect your detector if you operate it in the rain, as water may get into the instrument case.

## **SALT WATER:**

Salt water is very corrosive! Immediately after your detector has been exposed to salt water, rinse it thoroughly with fresh water, being careful not to allow water to enter the instrument case. Then wipe it with a cloth dampened with fresh water and dry it thoroughly.

## **ADDITIONAL PRECAUTIONS:**

- a. Avoid dropping your detector
- b. Do not use any lubricants
- c. Avoid sharp jars to the loop
- d. Do not allow batteries to corrode inside the instrument
- e. Do not alter or modify your instrument during its warranty period. Alterations will void the warranty.

# ***NATIONAL SERVICE PROGRAM***

THE SERIAL NUMBER IS ON THE SILVER TAG INSIDE THE BATTERY COMPARTMENT.

THE CODE NUMBER IS ON THE WHITE TAG.

White's Electronics has always been concerned with the absolute quality of its mineral/metal detectors. Service after the sale is also of equal importance. In an effort to further the quality of service to our customer, White's reorganized its warranty service programs significantly. Since January 1982, there have been five factory authorized National Warranty Service Centers located regionally around the continental U.S. These Service Centers are identical to the Factory Service Center in Sweet Home, Oregon. In order to ensure you will get the finest service possible for your detector, the technicians in each National Warranty Service Center are Factory trained and given on-going training for new products and improved service techniques. They can also repair your out of warranty instruments with efficiency and timeliness.

Simply return the detector to the dealer where you purchased the unit. The unit should be accompanied by a completed service coupon provided by your dealer. You must provide proof of date of purchase before the unit is shipped.

If the unit has failed within the first 90 days of purchase, regular UPS or Parcel Post may be prepaid by your dealer within the U.S. A.

If the unit fails after the first 90 day period, the customer is responsible for shipping costs. Please also include \$5 for return postage, handling, and insurance.

Any repair work performed by other than a White's National Service Center will automatically void the warranty.

If a problem occurs with your metal detector, first contact the White's dealer who sold it to you. In many cases your dealer can solve the problem. If not, the dealer will have your detector repaired under the Warranty Program. All of White's National Service Centers located throughout the country, are owned and operated by factory trained technicians. These centers are fully equipped and the personnel fully trained with on-going programs at White's in order to service your mineral/metal detector. With this program, the average repair time has actually been reduced from weeks to days!

# WHITE'S AUTHORIZED SERVICE CENTERS



**1. White's Electronics, Inc.**  
 1011 Pleasant Valley Rd.  
 Sweet Home, OR 97386  
 (503) 367-6121  
 FAX (503) 367-2968

**2. KOCI Detector Sales/Service**  
 426 W. 2nd St.  
 Hastings, NE 68901  
 (402) 463-4705

**3. Electronic Exploration**  
 575 W. Harrison Rd.  
 Lombard, IL 60148  
 (708) 620-0618  
 FAX (708) 620-1005

**4. Geo-Quest**  
 106 U.S. Hwy. 46  
 Saddlebrook, NJ 07662  
 (201) 772-7443

**5. Centreville Electronics**  
 13860B Braddock Rd.  
 Centreville, VA 22020  
 (703) 631-0202

# ***KEY***

## ***SPECIFICATIONS***

### **APPROXIMATE BATTERY LIFE**

|              |         |
|--------------|---------|
| RECHARGEABLE | 7 HOURS |
| ALKALINE     | 9 HOURS |

### **BATTERY CHANGING**

|                                 |            |
|---------------------------------|------------|
| APPROXIMATE MEMORY<br>HOLD TIME | 30 SECONDS |
|---------------------------------|------------|

|                                  |          |
|----------------------------------|----------|
| APPROXIMATE MASTER<br>RESET TIME | 3MINUTES |
|----------------------------------|----------|

### **ENVIRONMENT**

|                           |       |
|---------------------------|-------|
| OPTIMUM HUMIDITY<br>RANGE | 0-75% |
|---------------------------|-------|

|                              |                      |
|------------------------------|----------------------|
| OPTIMUM TEMPERATURE<br>RANGE | 33°-100°F<br>0°-38°C |
|------------------------------|----------------------|

### **FREQUENCIES**

|                            |                          |
|----------------------------|--------------------------|
| OPERATING                  | 6.59KHz                  |
| AUDIO NORMAL               | 412 Hz                   |
| AUDIO HIGH                 | 824 Hz                   |
| AUDIO LOW                  | 206 Hz                   |
| "C" MODE<br>(Good Targets) | Twice Audio<br>Frequency |
| CONTROL<br>BUTTONS         | 1648 Hz                  |
| MULTITONE                  | 412-1648Hz               |

# SEARCHING

## WHERE TO SEARCH:

Start with your own yard. Valuables can be found anywhere people have congregated, gathered, lived, sat, walked, played, camped, picnicked, traveled, or fought. The following are places that have produced a great deal of coins, rings, relics and treasure in the past: Amusement parts, Swimming Holes, Parks, Sidewalks, Homesteads, Old Buildings, Carnivals, Ghost Towns, Trails, and Beaches.

## HOW TO SEARCH:

You must have permission to search private property from the owner or person in charge of managing the proper. In most cases, you can locate the owner through City Hall or the county seat. If the area is city property, contact the Parks and Recreation Department for a permit any restrictions. If it is a state or federal park, contact the superintendent or grounds keeper. In most cases, permission to search is not a problem, given a few restrictions.

## DIGGING:

Practice pinpointing and digging in your own yard before searching well manicured lawns. Try pinpointing a coin on top of the ground, then bury it and practice pinpointing.

Always fill in the holes you dig. Cut a plug or horseshoe shape about two square inches maximum, which can be easily replaced once the target is recovered. Many digging tools are available. Contact your dealer.

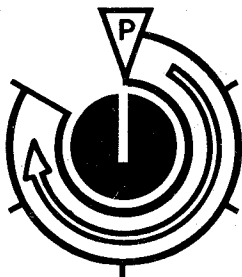
Always remove all items you recover, and never leave a mess. Holes are both unsightly and dangerous.

We strongly urge you to follow these steps, which will preserve the environment and also the rights of detector operators with as few restrictions as possible.

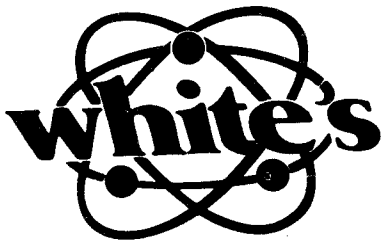
## RESPECT:

Respect the right of the property owners, as well as laws, ordinances, or regulations about searching publicly owned sites. Public officials and private property owners will be more likely to allow continued searching if you do not environmental damage. Consider the scar you may leave before you start digging. This will vary a lot from one part of the country to another depending on soil and climatic conditions. Always keep in mind that other detector operators may be judged by your examples.

## ADVANCED OPTIONS



**SIG. BAL.**



**Logo**

Once you have mastered all the EAGLE's other options and controls, there are additional fine adjustments advanced operators may make. These fine adjustments can be used to enhance certain operating characteristics.

### **SIG BAL (Signal Balance)**

1. The SIG BAL control is used in combination with AUDIO OPTION II B, NORMAL and HIGH MINERAL Transmit Power, and the White's logo on the bottom of the display to balance the signal received from the loop. By balancing the receive signal depth penetration and stability will increase.

2. When searching, if the White's logo on the bottom of the display is fading ON and OFF or disappearing completely, the instrument is overloading and detection cannot occur when the White's logo isn't visible. To correctly compensate for such conditions, proceed as follows:

A. First, lift the loop a few inches higher from the ground and again sweep the loop over the general area to assure individual targets usually large, are not causing the overload.

B. If the entire area seems to cause the White's logo to fade (Bad Ground) switch Transmit Power to HIGH MINERAL position by squeezing and holding the TRIGGER SWITCH then pressing and releasing LRN ACC control, prompt appears beside LRN ACC control, release TRIGGER SWITCH and search.

C. You may optionally fine tune the SIG BAL control at this point to assure maximum performance.

D. To fine tune the SIG BAL sweep the loop over the ground while slowly turning the SIG BAL control clockwise. When the White's logo on the display fades or starts flashing you have gone too far clockwise, reduce it slowly while keeping the loop over the ground until the White's logo no longer fades or flashes. At this point, the SIG BAL control is perfectly set for the area.

E. Reground balance using the AIR/GND controls after adjusting SIG BAL control.

3. If you desire maximum performance from your instrument, you may fine tune the SIG BAL control by following the above step #D regardless of whether the NORMAL or HIGH MINERAL Transmit Power is selected. Remember, however, the instrument will not detect when the White's logo is not visible.
4. When the SIG BAL control is turned clockwise from the PRESET position, the depth indicator will read all targets as being shallower than they actually are.
5. SIG BAL is active all operating modes.
6. In some areas the most effective SIG BAL setting may vary. As an example, on a salt water beach, the dry sand may allow a much further clockwise setting than the wet sand. Because of the greater salt content in the wet sand, it may also require the HIGH MINERAL Transmit Power setting.

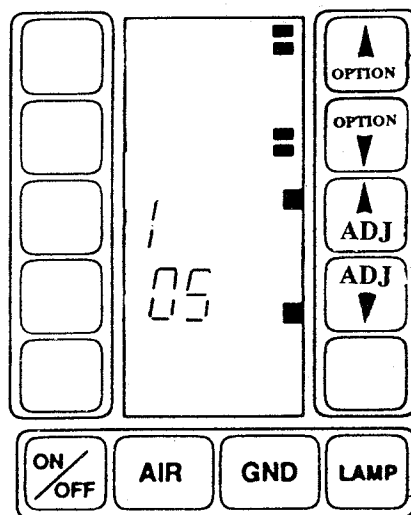
## Advanced

### Options

| #  | OPTION            | SETTINGS | NOTES                                                           |
|----|-------------------|----------|-----------------------------------------------------------------|
| #1 | S.A.T. DELAY      | 0-10     | 0=FASTEST<br>10=SLOWEST                                         |
| #2 | B.C. REJ          | 0-2      | 0=NORMAL<br>1=15% MORE<br>2=30% MORE                            |
| #3 | SEARCH SPEED      | 0-1      | 0=NORMAL<br>1=FAST                                              |
| #4 | TRACK LEVEL       | 1-25     | HIGHER #'S<br>TRACK<br>LESS                                     |
| #5 | V.D.I. SENS       | 1-50     | HIGHER<br>NUMBERS<br>LESS<br>SENSITIVE                          |
| #6 |                   |          |                                                                 |
| #7 | USER A.C.<br>SENS | 0-99     | 0=OFF<br>LOW #'S MORE<br>SENSITIVE<br>HIGH #' LESS<br>SENSITIVE |
| #8 | PROSPECTING       | 0-3      | 0=OFF<br>1=ABSOLUTE<br>VALUE<br>2=NO V.D.I.<br>LABELS<br>3=BOTH |
| #9 | AUTO TRAC         | 0-3      | 0=OFF<br>1=SEE TRAC<br>2=NO TRAC<br>INHIBIT<br>3=BOTH           |

It is necessary to enter the ADVANCED OPTION MODE to make any additional ADVANCED OPTION adjustments.

I. To enter the ADVANCED OPTION MODE squeeze and hold the TRIGGER SWITCH and push and release either EDIT control. You may now release the TRIGGER SWITCH and you are in the ADVANCED OPTION MODE.



A. The VOL controls select which ADVANCED OPTION is to be adjusted. ADVANCED OPTIONS are represented by the upper number on the display. (shown as number one on the above display) Refer to the chart for a cross reference of representation numbers and ADVANCED OPTIONS.

B. The EDIT controls adjust the actual setting of that ADVANCED OPTION. The actual settings are represented by the lower number on the display. (shown as number five on the above chart)

C. EXAMPLE: On the above display, number 1 indicates S.A.T. DELAY is ADVANCED OPTION ready for adjustment, number 5 indicates the actual setting of the S.A.T. DELAY.

D. The following chart shows the available ADVANCED OPTIONS, their display representation numbers, available settings, and notes to assist you. Use this chart for reference.

# ***EXPLANATION OF ADVANCED OPTIONS***

Use the VOL controls to select the option number then use the EDIT controls to adjust the actual setting of that option. Squeeze and release TRIGGER SWITCH to return to normal operation.

## **1. S.A.T. DELAY (Self Adjusting Threshold Speed)**

This option indicated as number one on the display adjust the speed with which Self Adjusting Threshold performs its reset of the Threshold tone.

A. Fast Action S.A.T. is activated from setting "0-3" and is characterized by large targets adjusting out faster than small targets producing a constant recovery time.

B. Slow Action S.A.T. is activated from setting "4-10" and produces a constant correction characteristic that adjust all targets at the same rate. If you stop over a larger target and then continue searching, it may take a while for this system to recover, squeeze and release the TRIGGER SWITCH.

## **2. BOTTLE CAP REJECTION**

This option indicated as number two on the display adjusts how the detector's discriminator responds to targets.

A. 0-NORMAL which is well suited for most conditions and operators.

B. 1-A 15% increase in discrimination power, which will increase the likelihood that junk targets, such as bottle caps, will produce broken or fluttery tones in comparison to good targets produce a more smooth solid tone.

C. 2-An additional 15% increase in discrimination power, making the instrument's discriminator 30% stronger than the NORMAL position, and junk targets much more likely to produce a fluttery tone.

**CAUTION:** Increasing the discriminate power, also increased the chances that good targets will produce broken or fluttery tones. High SENS settings have a similar effect, additionally NORMAL and HIGH MINERAL transmit power, the SIG BAL control, and SEARCH SPEED all change the way the discriminator sounds. Search conditions and personal preference will dictate the proper settings.

### 3. SEARCH SPEED

The option indicated as number three on the display changes the way the audio system responds to target signals.

**A. 0-NORMAL:** In the NORMAL position, signal processing is optimum. A slow sweep speed should be used, approximately two seconds from the right to left. In a high trash area, recovery time (the time it takes the circuitry to clear after detecting one target, so that it may respond to another in close proximity to the first) may not be ideal.

**B. 1-FAST:** In the FAST position, recovery time is speeded, ideal for high trash areas. Additionally, a faster sweep speed can be used, however, is not required. Signal processing, however, is not ideal, large targets may tend to echo and discrimination tones may be altered.

### 4. TRAC LEVEL (AUTO TRAC Adjustment Speed)

This option indicated as number four on the display, controls the adjustment speed in which AUTO TRAC adjust for changing conditions.

A. This setting determines the minimum amount of ground change required to activate AUTO TRAC.

B. Settings "1-5" may best be used for difficult ground conditions or those hunting in an all metal mode. These settings may also be useful in low mineralized areas.

C. Settings "6-25" reduce the effect of AUTO TRAC, in case this feature causes problems in a certain area or is adjusting too much over targets.

D. There is a 1/2 second stop in AUTO TRAC every time the instrument responds either visually or by Audio tone, thus the higher A.C. SENS (motion mode sensitivity) the less AUTO TRAC works. This can be switched off by selecting NO TRAC INHIBIT.

E. You may see when AUTO TRAC is adjusting, by using function "9", SEE TRAC.

F. In heavily mineralized ground, selecting the HIGH MINERAL Transmit Power (See AUDIO OPTIONS II B) will greatly enhance AUTO TRAC's effectiveness.

## *User*

### **A.C. SENS**

#### *Chart*

| <b><i>SENSITIVITY LEVEL<br/>NUMBER</i></b> | <b><i>SETTING</i></b> |
|--------------------------------------------|-----------------------|
|                                            | <b><i>99</i></b>      |
|                                            | <b><i>90</i></b>      |
| <b><i>LESS SENSITIVE</i></b>               | <b><i>80</i></b>      |
| <b><i>1</i></b>                            | <b><i>70</i></b>      |
| <b><i>2</i></b>                            | <b><i>60</i></b>      |
| <b><i>3</i></b>                            | <b><i>50</i></b>      |
| <b><i>4</i></b>                            | <b><i>40</i></b>      |
| <b><i>5</i></b>                            | <b><i>35</i></b>      |
| <b><i>6</i></b>                            | <b><i>30</i></b>      |
| <b><i>7</i></b>                            | <b><i>25</i></b>      |
| <b><i>MORE SENSITIVE</i></b>               | <b><i>20</i></b>      |
| <b><i>OFF</i></b>                          | <b><i>0</i></b>       |

#### **5. V.D. I. SENS LEVEL (Display Sensitivity)**

This function indicated as number 5 on the display determines the minimum target strength (audio response ) required to cause a display indication.

A. A lower setting (smaller number) will produce a more sensitive display. More display indications will be noted and fringe targets (targets too deep or weak to produce an accurate indication) may produce varied display indications (V.D.I. numbers).

B. A higher setting (larger numbers) will produce a less sensitive display. Less display indications will be noted, however, those that are noted are more likely to be accurate. Fringe targets may produce an audio tone without a display indication.

C. Select a setting 1-50 based on your personal preference regarding fringe targets and display indications.

D. This setting will not effect the audio tone of AUDIO MODE "A" however, it will effect the audio tone in modes "B" and "C".

6. NOT USED

#### **7. USER A.C. SENSITIVITY**

This option indicated as number seven on the display allows for an alternate way to control A. C. (motion mode) sensitivity.

A. Setting number "0" is the OFF position

B. Settings 1-95 selects the sensitivity level indicated under normal operation as "0" on the A. C. SENS control.

C. This option allows for sensitivity settings above, below, and between the normal 1-7 settings.

D. Larger numbers are less sensitive, smaller numbers are more sensitive.

E. The follwing chart makes a comparison between standard sensitivity levels and the additonal settings this option provides.

F. After slecting a setting and returning to operate, adjust SENS to activate your setting.

## 8. PROSPECTING

This option indicated as number eight on the display allows for selection of the following options.

### A. ABSOLUTE VALUE

This is a special audio mode that gets louder for any change in target strength. When this option is selected any D.C. (non-motion mode) except Pinpointing is effected. When the TRIGGER SWITCH is squeezed and released the audio returns to threshold. If the target signal increases or decreases the audio level will increase. This feature is intended for use with the specialty loops, such as the BIG FOOT and GOLD FOOT elongated design.

### B. V.D.I. LABEL OFF

If you are using his instrument for prospecting or relic hunting or any other application besides looking for coins, then the labels IRON, NICKEL, TAB, etc. are not of much use and can be turned OFF. This is preset in the PROSPECTING mode "B".

C. The chart shows setting numbers at the left and all possible combinations of the two above options on the right. Use the VOL controls to select the setting which provides the combination of these two options you desire.

| SETTING NUMBER | ABSOLUTE VALUE | V.D.I. LABELS |
|----------------|----------------|---------------|
| 0              | OFF            | ON            |
| 1              | ON             | ON            |
| 2              | OFF            | OFF           |
| 3              | ON             | OFF           |

## 9. AUTO TRAC

This option indicated as number nine on the display, allows selection of the following options:

### A. SEE AUTO TRAC

If you wish you may view when AUTO TRAC is adjusting for changing ground conditions indicated by the momentary appearance of a vertical line beside the VOL bar graph. AUTO TRAC is effected by ground mineral consistency, Advanced Option: TRAC LEVEL and TRAC INHIBIT.

### B. TRAC INHIBIT

Select this option if you want AUTO TRAC to continue to adjust even when the main filters are processing a target. Use this option when searching in very mineralized ground or (when searching primarily for metals that do not corrode such as gold). Some TRAC'ing can occur over targets when TRAC INHIBIT is OFF, due to corrosion.

C. The chart shows setting numbers at the left and all possible combinations of the two options on the right. Use the VOL controls to select the setting which provides the combinations of these two options you desire.

| SETTING NUMBER | SEE AUTO TRAC | TRAC INHIBIT |
|----------------|---------------|--------------|
| 0              | OFF           | YES          |
| 1              | ON            | YES          |
| 2              | OFF           | NO           |
| 3              | ON            | NO           |

## PRESET STARTING PROGRAM

### "A" COIN & JEWELRY

I. THE "A" COIN AND JEWELRY STARTING PROGRAM IS AS FOLLOWS:

#### A. SECONDARY CONTROLS

- 1. AUDIO MODE .....A
- 2. AUTO TRAC .....ON
- 3. MINIMUM VOLUME (Threshold) .....60dB
- 4. SENS A. C. (Sensitivity Motion) .....4

#### B. DISCRIMINATE CONTROLS

- 1. DISC ON .....ON
- 2. DISC ACCEPT (CLEAR) .....9-27, 50-94
- 3. DISC REJECT (SET) .....LOW 96-8, 28-49, 95
- 4. TWO QUADRANT V.D.I. ....OFF
- 5. VISUAL DISC .....ON

#### C. AUDIO OPTIONS (TRIGGER squeezed or locked)

- 1. S. A.T. (Self Adjusting Threshold) .....ON
- 2. TRANSMIT POWER .....NORMAL
- 3. EXTENDED AUDIO .....OFF
- 4. AUDIO FREQUENCY .....B
- 5. MAXIMUM VOLUME (TARGET) .....103dB
- 6. SENS D.C. (Sensitivity Non-Motion) .....3

#### D. ADVANCED OPTIONS

- 1. S.A.T. DELAY .....10
- 2. BC REJ .....0
- 3. SEARCH SPEED .....0
- 4. TRACK LEVEL .....4
- 5. V.D. I. SENS LEVEL .....15
- 6. RESERVED .....N/A
- 7. USER A.C. SENS .....0
- 8. PROSPECTING .....0
- 9. AUTO TRAC .....0

#### E. OPTIONS (Suggested)

- 1. Increase A. C. (SENS) Sensitivity to the highest number which will produce a smooth operation.
- 2. Increase DISC ACCEPT (clear) V.D.I. numbers between 28-49 which will increase the number of both rings and pull tabs dug.

# PRESET STARTING PROGRAM

## *"B" PROSPECTING & RELIC*

I. THE "B" PROSPECTING AND RELIC STARTING PROGRAMS IS AS FOLLOWS:

### A. SECONDARY CONTROLS

1. AUDIO MODE ..... A
2. AUTO TRAC ..... ON
3. MINIMUM VOLUME (Threshold) ..... 60dB
4. SENS A. C. (Sensitivity Motion) ..... 4

### B. DISCRIMINATE CONTROLS

1. DISC ON ..... OFF
2. DISC ACCEPT (CLEAR) ..... LOW 19-0-95
3. DISC REJECT (SET) ..... LOW 96- LOW 20
4. TWO QUADRANT V.D.I. .... ON
5. VISUAL DISC ..... ON

### C. AUDIO OPTIONS (TRIGGER squeezed or locked)

1. S. A.T. (Self Adjusting Threshold) ..... ON
2. TRANSMIT POWER ..... NORMAL
3. EXTENDED AUDIO ..... OFF
4. AUDIO FREQUENCY ..... B
5. MAXIMUM VOLUME (TARGET) ..... 103dB
6. SENS D.C. (Sensitivity Non-Motion) ..... 4

### D. ADVANCED OPTIONS

1. S.A.T. DELAY ..... 0
2. BC REJ ..... 0
3. SEARCH SPEED ..... 0
4. TRACK LEVEL ..... 4
5. V.D. I. SENS LEVEL ..... 15
6. RESERVED ..... N/A
7. USER A.C. SENS ..... 0
8. PROSPECTING ..... 2
9. AUTO TRAC ..... 1

### E. OPTIONS (Suggested)

1. RELIC hunters may wish to turn OFF VISUAL DISC and or DISC ACC (Clear) V.D.I. numbers between LOW 96- LOW 20 to accept more iron targets.
2. RELIC hunters may also wish to turn OFF S.A.T. Or use a slower S.A.T. DELAY.
3. Many RELIC hunters turn ON DISC and program for specific relics.

# PRESET STARTING PROGRAM

## *"C" BEACH*

THE "C" BEACH STARTING PROGRAM IS AS FOLLOWS:

### A. SECONDARY CONTROLS

1. AUDIO MODE .....A
2. AUTO TRAC .....ON
3. MINIMUM VOLUME (Threshold) .....60dB
4. SENS A. C. (Sensitivity Motion) .....4

### B. DISCRIMINATE CONTROLS

1. DISC ON .....ON
2. DISC ACCEPT (CLEAR) .....8-94
3. DISC REJECT (SET) .....LOW 96-0-7, 95
4. TWO QUADRANT V.D.I. ....ON
5. VISUAL DISC .....ON

### C. AUDIO OPTIONS (TRIGGER squeezed or locked)

1. S. A.T. (Self Adjusting Threshold).....ON
2. TRANSMIT POWER .....NORMAL
3. EXTENDED AUDIO .....OFF
4. AUDIO FREQUENCY .....B
5. MAXIMUM VOLUME (TARGET) .....103dB
6. SENS D.C. (Sensitivity Non-Motion) .....3

### D. ADVANCED OPTIONS

1. S.A.T. DELAY .....4
2. BC REJ .....0
3. SEARCH SPEED .....0
4. TRACK LEVEL .....4
5. V.D. I. SENS LEVEL .....15
6. RESERVED .....N/A
7. USER A.C. SENS .....0
8. PROSPECTING .....0
9. AUTO TRAC .....2

# ***GLOSSARY OF TERMS***

**ACCEPT:** To detect. Discrimination is clear so as to respond to a target.

**ADVANCED OPTIONS:** MODE or tuning procedure where advanced features may be adjusted. (See LAYER).

**AIR BALANCE:** Tuning procedure that prepares for GND (Ground Balance).

**AIR CONTROL:** Control that performs "AIR BALANCE" (Hold loop in air, away from known metals or ground and press AIR control).

**AIR PROMPT:** Display indication that appears when AIR BALANCE is required.

**AIR TEST:** Testing or experimenting the response of a metal detector to various objects with the loop positioned away from the ground.

**ALKALINE BATTERY:** Type of non-rechargeable that has the ability to sustain longer periods of current drain and greater storage life than standard carbon-zinc type.

**ALL METAL:** Mode or function that responds to all type of metal, iron, foil, nickel, copper, silver, gold, etc.

**AUDIBLE THRESHOLD:** A slight and continuous hum that makes it easy to hear changes in audio.

**AUDIO:** Volume or tone produces by speaker or other sound emitting device.

**AUDIO MODE:** A condition of operations selected by the detector operator for specific conditions, operating characteristics and/or features.

**AUDIO OPTIONS:** MODE or tuning procedure where options directly related to audio may be adjusted. (See LAYER)

**AUDIO FREQUENCY:** The tone or pitch of the audio, bass, treble, etc.

**AUTO TRAC:** A feature that monitors GND (ground) balance and makes corrections to it as ground mineralization changes.

**BAR GRAPH:** Graphic means of indicated level (BAR CHART).

**BAT:** Battery, "Power Source".

**BENCH TEST:** "Air Test" Testing or experimenting the response of a metal detector to various objects with the loop positioned away from the ground.

**BLOCK EDIT:** EDITING large sections of the V.D.I. target numbers simultaneously to ACCEPT or REJECT status.

**BOTTLE CAP REJECTION:** Special feature that produces more broken or ratty tones on bottle caps or other iron alloys.

**CENTER:** Middle position considering the outside edges.

**CLR:** (Clear) Learn Accept; to detect, (SEE ACCEPT) To fix or prepare a V.D.I. number for accept. Also see LRN ACC CLR, PROGRAM.

**CLEVIS:** Loop isolator, short plastic section between rod assembly and loop.

**CONTROL BOX:** Black aluminum body of instrument.

**CONTROL CLUSTER:** Panel where all controls are located.

**DISCRIMINATE MEMORY:** LOW 96-0-95 V.D.I. numbers, CLEAR ACCEPT or SET REJECT status.

**DISCRIMINATE OPTIONS:** MODE or tuning procedure where the discriminator may be adjusted (SEE LAYER)

**DISCRIMINATOR:** A circuit that can be adjusted to accept or reject signals or targets of difference characteristics.

**DISPLAY:** Liquid Crystal exhibit of information located on control clusters, used as graphic visual indicator.

**EDIT:** To alter or rearrange to suit a particular purpose. (SEE PROGRAM)

**EXTENDED AUDIO:** Feature for use in all metal modes, DISC OFF, AUDIO MODES "A" and "C" which produce higher audio frequency and volume for more intense targets.

**FALSE SIGNALS:** Erratic or unstable tones, beeps, and/or display indications that are not caused by the detection of metal.

**FERRITE SAMPLE:** Mineral sample consisting of essentially of an iron oxide.

**FILTER:** Electrical circuit which processes signals, suppressing or minimizing waves or oscillations of certain frequencies.

**FOURTH LAYER:** Advanced layer accessed by holding in TRIGGER SWITCH and pushing either EDIT control, exit by squeezing and releasing TRIGGER SWITCH.

**FREQUENCY:** The number of complete alternation current cycles produced by the transmit oscillator per second.

**FRINGE TARGETS:** Targets too deep or weak to produce an accurate discrimination indication.

**GND:** (Ground) Dirt or the surface of the earth.

**GROUND BALANCE:** The cancellations of ground mineralization to ignore the masking effect ground minerals have over metal.

**GND CONTROL:** Control that performs ground balance, the cancellation of ground mineralization.

**GND PROMPT:** Display indication that appears when GND BALANCE is required.

**IMMEDIATELY:** At once, without delay.

**INDICATE:** Advise, proclaim, or point out.

**INTENSITY GRAPH:** Bar graph or chart that indicates signal strength in segments.

**INTERFERENCE:** Something which hinders, impedes, or confuses normal metal detector operations.

**JUNK TARGETS:** Metals determined to be trash or rejects, iron, foil, pull tabs, etc.

**LAYER:** The use or function of the control and display can be changed. Each change in control or display function is considered a LAYER; DISCRIMINATE OPTIONS, AUDIO OPTIONS, ADVANCED OPTIONS.

**LCD:** (Liquid Crystal Display) Use a graphic visual indicator. See DISPLAY

**LOOP:** (Search Coil) Circular plastic housing containing multiple windings.

**LRN ACC CLR:** (Learn Accept Clear) Control used to teach or learn accept and/or to clear for acceptance in EDIT (CLEAR ACCEPT).

**LRN REJ SET:** (Learn Reject Set) Control used to teach or learn reject and/or SET targets for reject in the EDIT mode. (See REJECT)

**MEM:** (Memory) Recall, reproducing what has been learned, set and retained.

**METAL:** Metallic substances; iron, foil, nickel, aluminum, gold, brass, lead, zinc, copper, silver, etc.

**MINERAL:** Ferric oxide (iron) or other such nonorganic substances naturally occurring in the ground.

**MINERALIZED GROUND:** Any soil that contains conductive or non-conductive components.  
**MINERALS**

**MODE:** SEE AUDIO MODE

**MOTION MODE:** An AUDIO MODE that requires loop motion to respond to metal targets.

**MULTINOTE BEEP:** More than two beeps or audio responses of varied frequencies, tone or pitch.

**MULTIPLE FUNCTIONS:** A control which performs more than one adjustment.

**NON-FERROUS:** Not of iron; metals of the precious class; copper, silver, gold, etc.

**NON-MOTION:** Mode that does not require loop motion to respond to metal.

**NOTCH:** Slot or category representing a specific point on the discriminate range. Each individual V.D.I. target number LOW 96-0-95 represents a NOTCH. Each notch can be CLEAR for accept or SET or reject.

**OPTIONALLY ADJUSTABLE:** Controls that utilize preselected settings for average conditions, therefore, do not have to be set each time you operate.

**OPTIONS:** Adjustments or selections.

**OVERLAP:** Refers to the amount of loop sweep advance, not being greater than the loops physical diameter.

**OVERLOAD:** (Saturation) Condition where White's logo disappears from the display indicating the instrument is not capable of responding to additional metal until the logo returns. Caused by highly magnetic ground or very large intense targets which cause the instrument to exceed its maximum response capability.

**PERSIST:** Continue to occur.

**PINPOINT:** Finding the targets exact location with respect to the loops physical center.

**PRESELECTED:** Controls that start out at settings or levels determined by the factory to be ideal for average conditions.

**PRESET:** Preselected.

**PRESET STARTING PROGRAM:** When the instrument is first turned ON, the AUDIO MODE control can be used to select between three complete starting programs: "A" COINS & JEWELRY, "B" PROSPECTING & RELIC, "C" BEACH. These three starting programs effect all settings including discrimination AUDIO and ADVANCED LAYER options.

**PRIMARY CONTROLS:** Controls that require setting each time you operate (TRIGGER SWITCH, ON/OFF, AIR, GND, LAMP).

**PROBABLE I.D.:** Most likely identification.

**PROGRAM:** To work out a sequence of operation to be performed by electronic equipment. Prepare, instruct, or set for a particular result.

**PROGRAM EDIT:** Setting the discriminate memory (LOW 96-0-95 V.D.I. numbers) to CLEAR accept or SET reject status manually through use of the EDIT mode.

**PROGRAM LEARN:** Adjusting the discriminate memory by example, teach by example, learn accept or learn reject.

**PROGRAMMABLE:** Ability to be programmed.

**PROMPT:** Reminder, display indication that tells either the tuning step required, control level or setting, mode or function.

**RANGE:** The class of admissible value of a variable.

**RATCHET PINPOINTING:** Automatic feature (activated by squeezing and hold the TRIGGER SWITCH) which will aid in centering the targets' precise location.

**RECEIVE:** The portion of a metal detector that converts the electrical currents or waves into visible and audible signals.

**RECHARGEABLE BATTERY:** Battery that is designed to be recharged or restore to new the active material within.

**REJECT:** Discriminate or cancel response to a metal.

**RESET:** Clear for further searching. Counter or clear the effect of Ratchet Pinpointing so as to be prepared for the next target.

**RETUNE:** (Reset) Clear for further searching. TRIGGER SWITCH squeezed and released.

**REVERT:** Turn back to, return to.

**S.A.T.:** (Self Adjusting Threshold) Feature for use in all metal modes, (DISC OFF) that maintains stable operation over varied ground conditions.

**SATURATION:** See OVERLOAD.

**SECONDARY CONTROLS:** Controls that start out at settings or levels determined to be ideal for average conditions, AUDIO MODE, SENS, AUTO TRAC, & VOL.

**SELF TEST:** Automatic test conducted by the instrument when first turned on.

**SENS:** (Sensitivity) Capacity or degree to which an instrument responds.

**SENS A.C.:** Sensitivity Alternating Current effects the motion modes.

**SENS D. C.:** Sensitivity Direct Current effects the non-motion modes only.

**SET:** "SET" (Learn Reject) To reject, (See REJECT) to fix or prepare a V.D.I. number for reject. Also see DISCRIMINATE, LRN REJECT SET, PROGRAM.

**SIGNAL:** Response or indication from audio or display indicating the present of metal.

**SILENT SEARCH:** Mode or option that is completely quiet until a metal is detected. NO AUDIBLE THRESHOLD.

**SLOW MOTION:** A description of loop speed required to operate.

**STATUS:** Condition, position.

**TARGET:** Any object buried in the ground or used in an AIR TEST that causes a metal detector to respond.

**TARGET MASKING:** When high concentrations of mineral or trash metal cause other valuable targets to be rejected.

**TARGET NUMBERS:** V.D.I. numbers LOW 96-0-95 that appear on the display indicating targets probably identity.

**TARGET RANGE:** See TARGET NUMBERS.

**THRESHOLD:** See AUDIBLE THRESHOLD.

**THIRD LAYER OPTIONS:** Accessed by squeezing and holding TRIGGER SWITCH, controls take on new options, exit by releasing TRIGGER SWITCH

**TONE I.D.:** (TONE IDENTIFICATION) Feature or mode that produces a high frequency tone for targets accepted by discriminate memory and lower or medium frequency tone for targets rejected by the discriminate memory.

**TRANSMIT:** To send out a signal, emit.

**TWO QUADRANT V.D.I. :** Feature that allows viewing of the complete target range LOW 96-0-95.

**V.D.I.:** Visual Discriminator Indication. Display that indicates probable target identity or conductivity. Visual Discrimination.

**VISUAL DISC:** Feature which makes V.D.I. target numbers programmed for reject no longer appear on the display.

**VOL:** (VOLUME) Loudness, sound or audio level.

**VOLTAGE REGULATOR:** Circuitry that control the amount of voltage/current that enters the circuit board.

**WEIGH:** To measure as if on scales, define quantity.

**WHITE'S LOGO:** White's emblem.

**WINDOW:** With each of the four layers of options the display show different information. This different display information is considered different windows of information. (See LAYER)

## **WHITE'S ELECTRONICS LIMITED WARRANTY**

If within two years (24 months) from the original date of purchase your White's detector fails due to defects in either material or workmanship, White's Electronics will repair or replace, at its option, all necessary parts without charge for parts or labor.

Simply return the detector to the dealer where you purchased it. The unit must be accompanied by a completed service coupon provided by your dealer. You must provide proof of date of purchase before the unit is shipped.

If the unit has failed within the first 90 days of purchase, shipping will be prepaid.

If the unit fails after the first 90-day period, the customer is responsible for shipping costs. Please also include \$5.00 for return postage, handling, and insurance.

Items excluded from this warranty are non-rechargeable batteries, headphones, and other accessories.

The warranty is not transferable. Nor is it valid unless the Warranty Registration Card is returned to the factory address below within ten (10) days of original purchase for the purpose of recording that date, which is the actual commencement date of the warranty.

The warranty does not cover damage caused by accident, misuse, neglect, alterations, modifications, or unauthorized service.

Duration of any implied warranties (e.g., merchantability and fitness for a particular purpose) shall not be longer than the stated warranty. Neither the manufacturer or retailer shall be liable for any incidental or consequential damages resulting from defect or failures to perform.

Some states, however, do not allow limitations on length of implied warranties, or the exclusion of incidental or consequential damages. Therefore, the above limitations and exclusions may not apply to you.

In addition, the stated warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

White's Electronics, Inc.  
1011 Pleasant Valley Road  
Sweet Home, OR 97386

## **TREASURE HUNTER'S CODE OF ETHICS:**

1. Respect the rights and property of others.
2. Observe all laws.
3. Aid law enforcement officials whenever possible.
4. Never destroy priceless, historical, or archeological treasures.
5. Leave the land and vegetation as it was. Fill in all holes.
6. Remove all trash and litter when you leave.
7. All treasure hunters may be judged by the example you set.  
Always conduct yourself with courtesy and consideration.

**WHITE'S ELECTRONICS, INC.**

**White's Electronics, Inc. 1011 Pleasant Valley Road• Sweet Home, Oregon 97386**