OPERATOR'S MANUAL
COINMASTER 4900/D

Written by "Jimmy Sierra" Normandi

A MESSAGE FROM "Jimmy Sierra"...

There is no detector on the market today which presents more value to the user than this HOT new unit from White's... The "49er".

This new unit, the 4900/D has all of the 4 modes of operation found on the top of the line 6000/Ds at a price hundreds of dollars less. This detector is almost too good...

When White's asked me to help design this new unit they had me contact other White's distributors and professional treasure hunters across the country. Some were avid Beach Hunters, others Relic Hunters and, of course, I have many friends who are avid Prospectors. We decided to plan a unit which incorporated all of the technology of White's fine line of metal detectors and trim them down to just the necessary muscle... no fat.

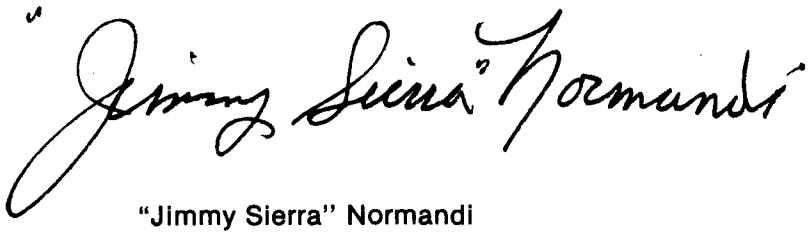
We then added features not found on any of White's units. Features that would make this unit specially suited for the needs of treasure hunters and prospectors working in difficult soil conditions.

The first of these was the addition of the double stacked tuner on the GEB DIAL. This allows fine tuning during the ground balancing process and greater control of mineralization. By adding the factory NULL BAND we made it easier for the user to understand NULL POINTS and control HOT ROCKS. We removed the volume control to make room for a Sensitivity dial to allow for greater sensitivity and depth where soil conditions would allow. We even added the SAT CIRCUIT for controlling the threshold for beach hunters.

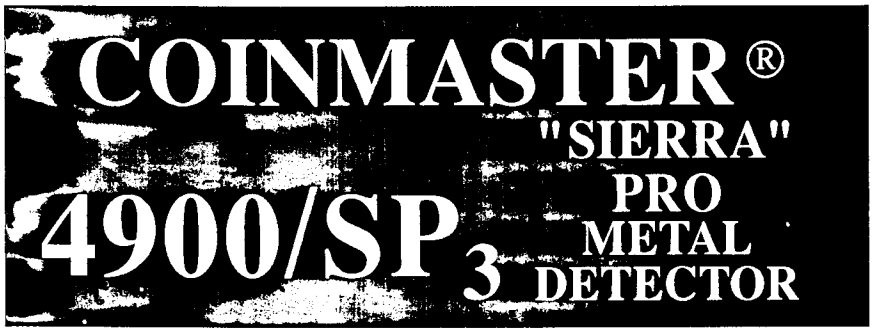
We had to sacrifice something... so off went the meter. But considering what we got in exchange, we came out way ahead.

For those who want an all guts detector... with full depth plus the ability to cancel extreme ground mineralization whether searching in the all metal or discrimination mode, the "49er" is that unit. We got everything we asked for and more. As I said before... It's really too good.

Happy Hunting,



"Jimmy Sierra" Normandi



1. The 4900 SP/3 operates exactly like the 4900/D except for the addition of the 3 speed SAT control and the variable tone contol. Therefore follow the manual for full instructions and apply the following paragraphs.
2. The 3 speed SAT is utilized in the following manner. Initially set the SAT toggle at the #2 (center) position. This sets the self adjusting threshold (SAT) at the same speed of recovery as the standard 4900/D. As the loop is swung over the ground in the all metal mode (either GEB/NORM or GEB/MAX), note whether there are lapses in the threshold. If there are pronounced lapses or blank spots, the ground is changing mineralization too rapidly for position #2, therefore switch the SAT control to position #3 (right). Position #3 recovers three times as fast as position #2. This third position was designed and tested in Australia where the very high mineralization changes too fast for slower SAT positions. There are areas in the USA where position #2 and sometimes #3 are needed. However, in less mineralized areas position #1 may work better. This position has half the recovery time of position #2. The best way to determine which SAT to use is to put a target in the ground and check it in each position. The one that produces the best response is, of course, the position to use.
3. In most areas the detector can be ground balanced with the GEB control just as the factory instructions direct. However, in very heavy mineralized areas where the ground changes rapidly an alternative method of maintaining the ground balance when operating in SAT is available. It is accomplished by first ground balancing the detector in either GEB/NORM or MAX as usual

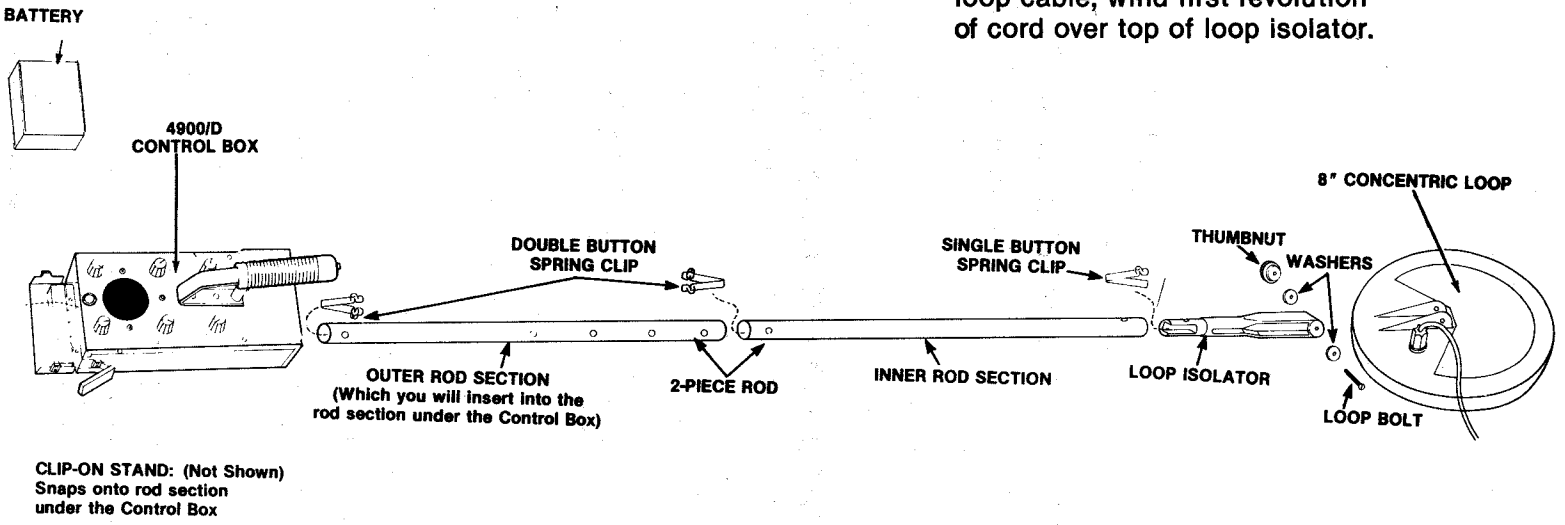
and then switching to SAT for operation. Then however, proceed to pump the loop up and down over the ground and listen for changes in the threshold hum from air to ground. Turn the GEB control either left or right as you pump up and down to attempt to establish a constant sounding intensity of hum. It is not necessary to squeeze and release the trigger as the GEB control is corrected as is customary when operating without SAT. This takes some skill to get used to, but it will provide better performance. It is similar to the method used by most autotune detectors.

4. The only other control on the SP/3 that is different is the 5 position tone control. Some people have an easier time hearing lower pitched tones than higher pitched ones. Merely select the tone of signal that best suites you. When detecting for long periods, changing the tone makes for better performance.
5. Remember. . .The "SIERRA" PRO SP/3 comes standard with Nicad Pack and charger. I have done this because it is far more economical for the owner in the long run. Constantly replacing batteries will cost many hundreds of dollars more over the life of the detector than paying a little more up front. Taking the cost of the Nicad and charger into consideration brings the cost of the 2 additions to the 4900 just around $20. This is really a great value.

P/N 621-0291 PRINTED IN U.S.A. 10/87

INDEX

PARTS IDENTIFICATION AND ASSEMBLY

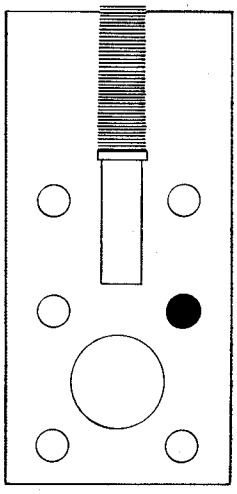


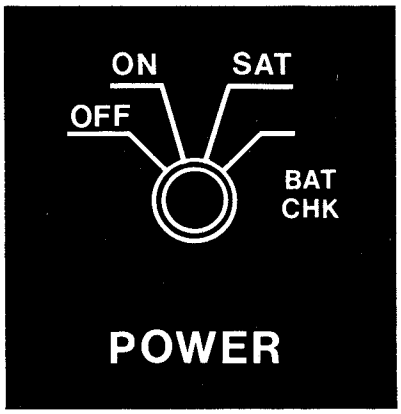
To prevent broken or pinched loop cable, wind first revolution of cord over top of loop isolator.

The 4900 comes with a 4 alkaline "C" cell battery pack.

Nicad rechargeable batteries and chargers are available.
Contact your dealer if you wish to order.

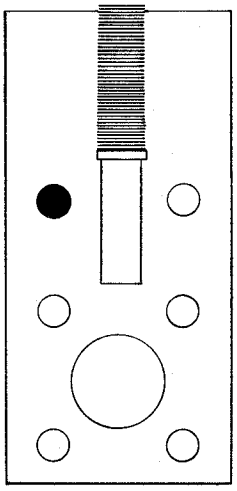
EXPLANATION OF CONTROLS
POWER SWITCH

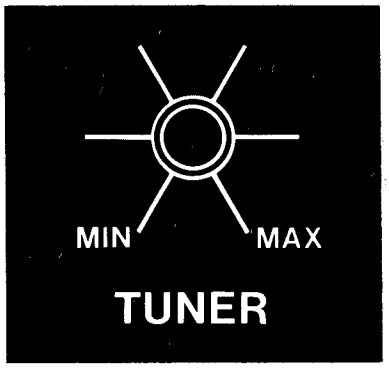




1. The POWER control turns the detector on and off, selects the SELF ADJUSTING THRESHOLD (S.A.T.) and tests the battery strength.
2. The S.A.T. positon automatically performs a reset function to maintain an optimum threshold tone.
   a. Ground Balance the instrument as described in this manual before selecting the S.A.T. position.
   b. The S.A.T. setting is recommended when searching in GEB/NORM or GEB/MAX in areas where ground mineralization changes rapidly, such as on wet saltwater beaches or in mining areas.
   c. NOTE *S.A.T. is not recommended for use in the TR/DISC MODE and it is not needed in the GEB/DISC MODE.
3. In the BAT. CK. position the red L.E.D. will glow brightly if the battery strength is GOOD.

EXPLANATION OF CONTROLS
TUNER DIAL

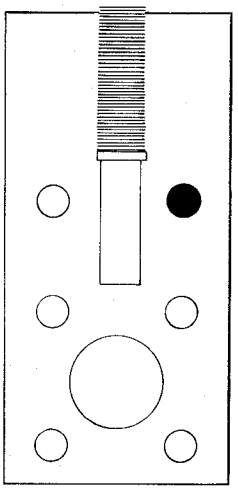


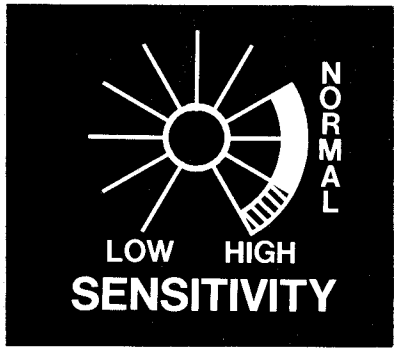


1. The TUNER sets the detector's THRESHOLD.
2. The THRESHOLD is indicated by an audio tone that is barely heard. It represents the detector's maximum operating sensitivity.

3. To set the THRESHOLD:
   a. Set the TUNER DIAL to MIN and set the MODE switch to GEB/NORM.
   b. Hold the detector so that its loop is in the air, straight out in front of you, waist high.
   c. Press and hold in the TUNER BUTTON on the end of the handle and at the same time turn the TUNER dial clockwise to the right till the tone is barely heard. Release the button.
4. THE THRESHOLD NEEDS TO BE RESET WHENEVER ANY OF THE OTHER CONTROLS ARE ADJUSTED. To reset the THRESHOLD, raise the loop waist high and press and release the TUNER BUTTON.

EXPLANATION OF CONTROLS
SENSITIVITY DIAL



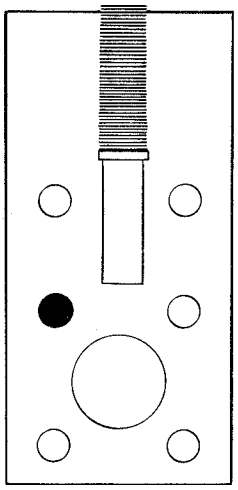


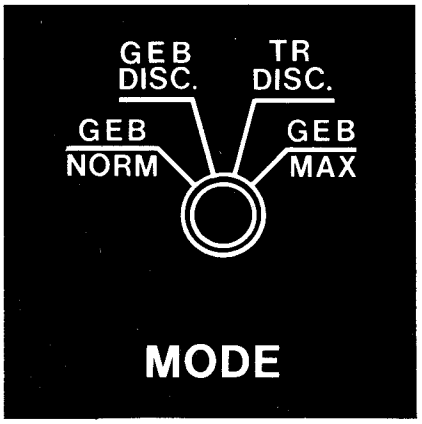
...is control replaces a volume control normally found in this position on most WHITE'S. The volume is preset at the factory at the proper level and the control removed.

2. This SENSITIVITY control is used to increase or decrease the amount of sensitivity the detector has. The detector should always be used at the maximum sensitivity allowable by the ground mineralization. A setting to the right edge of the solid band would provide a sensitivity workable in most areas and give depth capabilities equivalent to other GEB COINMASTERS. The dial scale beyond this point is used to provide additional sensitivity for reaching smaller or deeper targets. This increased sensitivity is available if the ground mineraization will allow. Use the highest setting available on the SENSITIVITY DIAL which allows a smooth or workable threshold. Erratic behavior of the detector could indicate excessive mineralization in the ground; and would indicate that the SENSITIVITY control be reduced by turning the dial to the left (counterclockwise) till the detector operates smoothly. Press and release the TUNER BUTTON each time the SENSITIVITY dial is corrected.

EXPLANATION OF CONTROLS
MODE SWITCH

1. The MODE switch selects one of 4 operating modes.
2. Each MODE is designed for specific search conditions. These conditions include soil mineralization; amount of junk cluttering the area; and the targets to be located.
3. The GEB/NORM or GEB/MAX modes are recommended for RELIC HUNTING, PROSPECTING and BEACH HUNTING (where excessive junk targets are not a problem).
4. The GEB/DISC mode is used to search for coins, jewelry, etc. in areas where junk items and ground mineralization are a problem.





5. The TR/DISC mode is used for searching only in areas where there is light or no bothersome mineralization as it does not cancel out ground conditions. The main function of this mode on the 4900/D is to help identify HOT ROCKS or bothersome mineralized rocks which can give false signals when prospecting or treasure hunting.

MODE: GEB/NORM

1. The GEB/NORM MODE locates ALL METALS while neutralizing the effects of ground mineralization.
   a. This MODE may best be used for prospecting, relic hunting and coinhunting in areas where there is little junk (like pull tabs, nails, bottle caps and etc.).
   b. With the POWER SWITCH set at S.A.T. this mode will automatically keep a constant threshold hum and is effective in certain saltwater beach conditions.
2. To use the detector in the GEB/NORM mode, it must be ground balanced using the GEB control.
3. In GEB/NORM, the loop DOES NOT have to be in motion.

MODE: GEB/DISC

1. The GEB/DISC MODE WILL DISTINGUISH BETWEEN DESIRABLE AND UNDESIRABLE OB—JECTS while neutralizing the effects of mineralization in the ground.
   a. This MODE may best be used for coinhunting in areas where there is a great deal of junk, (such as pull tabs, nails and bottle caps, etc.).
2. When using this mode, the DISC control must be adjusted in order for you to audibly distinguish between desirable and undesirable targets.
3. In GEB/DISC, the loop MUST be in motion, THIS IS A SLOW SWEEP MODE.
4. When using this mode, the detector must always be ground balanced in GEB/NORM first. Holding in the TUNER BUTTON will automatically switch this mode to GEB/NORM.
5. This mode should NEVER be used for PROSPECTING FOR GOLD NUGGETS...

MODE: TR/DISC

THE TR/DISC MODE HAS THREE FUNCTIONS:

1. It provides audio discrimination between desirable and undesirable targets but will not neutralize the effects of ground mineralization at the same time and hence should NOT be used as a primary searching mode in heavily mineralized areas, but reserved for low mineralized areas and in areas where there is no room to "swing" the loop (as is necessary with the

GEB/DISC mode).

a. In this function the DISC control is adjusted to distinguish between desirable and undesirable targets.

b. To tune the detector in this mode proceed as follows:
   1. Tune to THRESHOLD with the TUNER DIAL.
   2. Lower the loop to approximately ½" above the ground.
   3. Press and release the TUNER BUTTON to reset the THRESHOLD.

c. Search with the loop level to the ground and as close to the ground as possible.
   NOTE: If the loop is tilted or lifted, the tone may change or get louder (false signal) due to variations of the ground.

d. When searching in TR/DISC, the loop does not have to be in motion.

e. This mode gets excellent depth penetration wherever it can be used. However, if the ground is mineralized, the detector will frequently give false signals. In mineralized ground, it is best to hunt in one of the 3 GEB MODES.

2. It provides extended Ground Balance for extreme conditions such as saltwater beaches, unusually mineralized ground and other conditions beyond the range of the GEB control.
   a. Use the DISC control to balance out the ground in the same manner as the GEB control was used in GEB/NORM. The DISC control, however, operates in the opposite rotation from the GEB control. For example, if the tone gets louder as the loop is lowered, increase (turn clockwise) the DISC control.

3. It provides a means of identifying HOT ROCKS particularly in the PROSPECTING function of the "49er". This use will be covered completely in the section on HOT ROCKS.

MODE: GEB/MAX

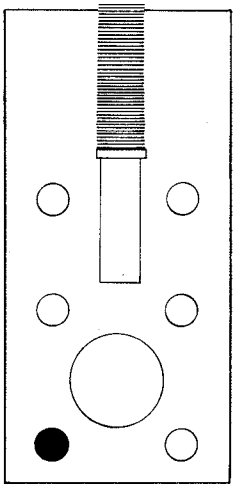
1. The GEB/MAX MODE locates all metals while neutralizing the effects of ground mineralization.
   a. This MODE may best be used for PROSPECTING and RELIC HUNTING where maximum depths are desired and junk items are not a major problem as this is an ALL metal mode and detects any metal target.
   b. Ground Balancing the detector in the GEB/MAX mode instead of the GEB/NORM mode will give the most exact tuning and this provides the detector with its greatest sensitivity.
2. In GEB/MAX mode, the detector must be ground balanced using the GEB control just as in GEB/NORM.
3. In GEB/MAX, the loop does NOT have to be in motion.
4. GEB/MAX has approximately 30% greater depth penetration than GEB/NORM.
   NOTE: Due to the increased sensitivity of GEB/MAX, it may have a somewhat rougher tone than GEB/NORM.

EXPLANATION OF CONTROLS
GEB DIAL

1. The GEB (Ground Exclusion Balance) control is used with all 3 GEB MODES to neutralize the effects of ground mineralization. When using the detector on either of the all metal modes (GEB/NORM and GEB/MAX) the detector must be adjusted to the ground with the GEB DIAL. After this is done, the mode can be changed to the GEB/DISC mode and not require additional balancing.
2. THE DETECTOR NEEDS TO BE GROUND BALANCED EVERY TIME YOU BEGIN SEARCHING AN AREA. To Ground Balance the detector, set the controls as follows:
   TUNER - Set to threshold, see TUNER DIAL explanation
   MODE - GEB/NORM OR GEB/MAX
   GEB - Middle of "Null" band
   SENSITIVITY - Right hand edge of solid band

POWER - ON
DISC - "5"
TUNER BUTTON - Press and release

a. Lower the loop to the ground. If the tone does not change, the unit is Ground Balanced already.
b. If the THRESHOLD tone changes, raise the loop waist high and turn the GEB DIAL SLIGHTLY COUNTERCLOCKWISE IF THE TONE HAD INCREASED OR SLIGHTLY CLOCKWISE IF THE TONE HAD DECREASED. Press and release the TUNER BUTTON on the end of the handle.
c. Lower the loop back down to the ground and note any change in tone again. Adjust the GEB control as explained above.
d. Continue to raise and lower the loop to the ground and make the appropriate corrections, until there is no change in the tone between air and ground.
e. If you have any trouble adjusting the GEB control to a constant threshold, you may be over some metal. Move to another spot and repeat the above steps.
NOTE: Press and release the TUNER BUTTON AFTER EACH ADJUSTMENT TO THE GEB CONTROL.

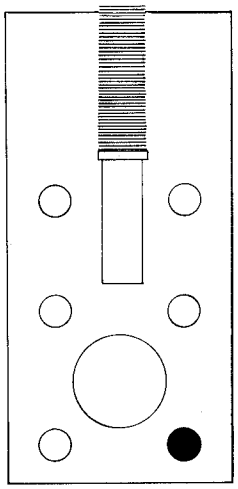


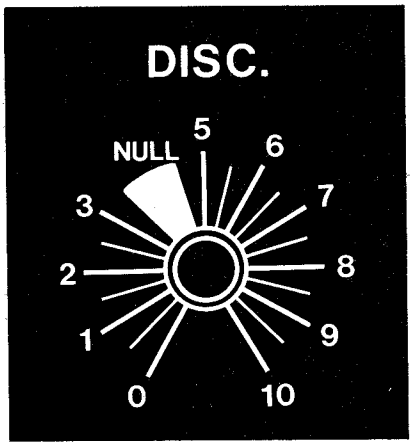
3. When you want to search using the GEB/DISC mode, do the following:
   a. Ground balance the detector in either GEB/NORM or GEB/MAX as described.
   b. Turn the MODE switch to GEB/DISC.
   c. Press and release the TUNER BUTTON. The detector is now Ground Balanced in GEB/DISC.

FOR YOUR INFORMATION: If Ferric Oxide (iron) or the magnetic content of the soil is not neutralized with the GEB control, the detector will react to it. This mineralization may "hide" metal objects from the detector.

4. Note that the TUNER DIAL on the GEB control is a double stacked tuner. This has been put on the "49er" so that this detector can be ground balanced more easily in extreme mineral conditions which are often present in PROSPECTING areas, BEACHES and RELIC HUNTING sites. When ground balancing, first set the outer portion of the tuner (rough tune) and as the balancing procedure gets more delicate, use the inner or (fine tune) portion of the tuner.
5. Another unique feature of the "49er" is the appearance of a marker indicating the NULL POINT of the GEB portion of the detector. This is merely a reference point used to predict how the detector will react to certain ground mineralizations, such as HOT ROCKS and BLACK SAND DEPOSITS. This NULL POINT is indicated as a band. Since each detector is slightly different, the EXACT spot for the NULL POINT must be determined on each detector for the maximum accuracy. This procedure will be fully explained in the section on PROSPECTING AND HOT ROCKS.

EXPLANATION OF CONTROLS
DISC DIAL



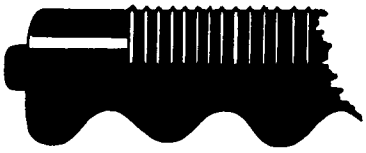


1. The DISC (Discrimination) control works with the GEB/DISC and TR/DISC modes to help audibly distinguish between desirable and undesirable targets. The DISC control allows the user to selectively interpret targets within the range of the dial from "1" to "10". The further clockwise the dial is set, the greater number of targets will be eliminated. Every target falling to the left of where the point is set will be eliminated and thus produce either no audible sound at all or a broken up sound. The degree of discrimination starts around "1" or "2" where the ground mineralization itself is eliminated, and progresses through BEACH SALT (around "3") to NAILS (around "4") FOIL (around "5" or "6") and then NICKELS. PULLTABS fall out above NICKELS and so on. You may calibrate your own detector to find where those items you wish to eliminate would appear on the scale. I recommend finding the place where you can hear a NICKEL in the GEB/DISC mode when it is placed on the ground you are searching. Increase the DISCRIMINATION level of the DISC DIAL slowly, while passing the loop over the nickel. Remember to Press and release the TUNER BUTTON each time you correct the setting on the DISC DIAL. When you reach the setting where the NICKEL produces no sound, correct the setting slightly to the left until the NICKEL gives a strong signal. AT THIS POINT ALL COINS AND 80% OF ALL GOLD JEWELRY WILL PRODUCE AN AUDIBLE SIGNAL. Most junk items, such as foil, nails and bottle caps will be eliminated at this setting. Aluminum junk, such as pull tabs and screw caps will still produce a signal. If you wish to eliminate these junk items, merely determine the point at which they are eliminated and detect with the dial set at that point. You will, of course, get most coins, but risk the chance of losing most gold jewelry.
2. The DISC DIAL also contains another unique feature, a NULL MARKING BAND. This band marks the area at which a mineral sample (such as is provided with the detector) will make the threshold sound fade when such a sample is brought close to the loop when the MODE SWITCH is set at TR/DISC. This feature is helpful when the detector is used for PROSPECTING and will be covered in that section of the manual. Since each detector has its own "fingerprint" the EXACT NULL POINT SHOULD BE DETERMINED for each detector by the user. This point, as also the GEB NULL POINT are constant and need only be determined one time and marked on the detector. This method for this exact determination will follow in the section on PROSPECTING.

EXPLANATION OF CONTROLS
TUNER BUTTON

1. The TUNER BUTTON on the end of the handle is a control that changes the detector's operating systems.
   a. Pressing the button in will switch the mode of operation of the detector. If the detector is in GEB/NORM, GEB/MAX, or TR/DISC, holding in the button will switch the mode to

GEB/DISC. If the detector is operating in GEB/DISC holding in the button will switch modes to GEB/NORM. This mode change will continue as long as the button is held depressed.



b. Pressing and releasing the button will retune the detector and regain the threshold sound. This is done whenever any control has been adjusted.
c. Pressing and releasing the button when the detector is operating in either GEB/NORM, or GEB/MAX and the loop is being held directly over the target will cause the signal to diminish in intensity or DETUNE. This is a helpful procedure when attempting to pinpoint a target for recovery.

S.A.T. (SELF ADJUSTING THRESHOLD)

S.A.T. stands for Self Adjusting Threshold. This is a very helpful feature to use if the primary searching MODE is either GEB/NORM or GEB/MAX as it allows the maintenance of a steady threshold sound regardless of changes in the ground conditions.

It is not necessary to use S.A.T. in the GEB/DISC mode as the threshold maintains itself already, regardless of the ground conditions.

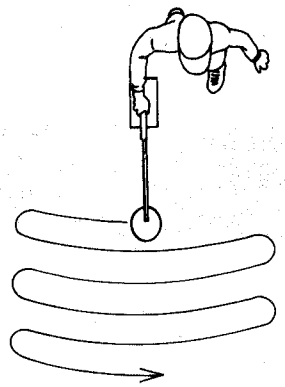
S.A.T. can also be called ELECTRONIC PINPOINTING. If the loop is slowed down over the target, the target signal will be reduced in its intensity and seem to disappear. A slight motion of the loop from side to side will regain the signal in a much diminished intensity, thus allowing for accurate pinpointing.

One of the primary advantages of S.A.T. is when BEACH HUNTING on SALTWATER beaches. The combination of SALT and WATER in different degrees of concentration change the threshold sound. For example, after tuning the detector on the dry sand with the MODE set at GEB/NORM or GEB/MAX, move toward the water. As the moisture and salt content of the sand increases, the sound of the detector will get louder or blare. This loud threshold sound will mask signals created by a coin or piece of jewelry. If the POWER switch was, however, set on S.A.T. instead of in the "ON" position, the threshold hum would have adjusted and remained steady, thus making searching possible. An alternative would be to search in GEB/DISC, but many prefer to use the ALL METAL GEB MODES on beaches as it is easy to dig any targets and thus avoid overlooking good targets. Another alternative would be to work parallel to the water line to maintain a steady concentration of water and salt. This is a tedious method and is not necessary when S.A.T. is available.

Ground mineralization does not change as dramatically when working prospecting or relic hunting areas, so S.A.T. would be the second choice in maintaining the threshold. The primary method in these cases would be to merely ground balance the detector to the changed ground condition. This provides the most sensitivity for the detector.

GENERAL 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.
4. The loop must be kept in motion in GEB/DISC only, but a slow sweep is needed to properly identify the target. When a target is detected, sweep from several directions, noting its audio characteristics.



5. The other three modes will still signal a target when the loop is stopped over it, motion is not necessary. To find the target after it is located on GEB/DISC, switch the mode to either GEB/NORM (BY HOLDING IN THE TUNER BUTTON) or actually switching the MODE SWITCH. Switching the MODE to GEB/MAX will also help pinpoint deeper or smaller targets.
6. To pinpoint, move the loop towards the target until the tone reaches its maximum level. At this point, move the loop across the target at a right angle until again the tone reaches its maximum level.
7. Press and release the TUNER BUTTON several times as you move the loop over the target area. You will be trying to narrow the detector's response to the target so it will be easier to know when the center of the loop is directly over the target. The target will be at the center of the "X".

RELIC HUNTING

Relic Hunting is done in the ALL METAL modes of GEB/NORM or GEB/MAX as these modes give the greatest depth, and targets are not restricted to precious metals. The amount of mineralization will determine if GEB/MAX will be the mode of choice. If the signal is stable enough to operate, then by all means go for the greater depth of that mode.

If GEB/MAX is the operating mode, then ground balance the detector in that mode. This will result in a finer tuned instrument and thus greater depth.

Relic Hunting should be done slowly and carefully. Deeper targets require more careful searching and a much tighter search pattern. Overlap all sweeps and cover areas from different directions. Dig all targets and do not use the discriminator modes. If too many small pieces of iron junk are present, you may wish to detune the detector as in pinpointing above and go for the larger relics, or use S.A.T. and slow down your sweep speed, allowing the self adjusting threshold to eliminate the smaller targets.

In some instances, if not too much mineralization is present, the TR/DISC mode can be used. It will ignore very small iron junk items, such as small nails, but will signal larger iron objects and other metals like lead, copper, brass, silver, gold etc.

If HOT ROCKS present a problem while searching for relics, they can be identified just as in prospecting and are covered under that heading.

PROSPECTING WITH THE 49er

We can prospect or hunt for gold with any of the GEB COINMASTERS as long as we have some ability to cancel out the ground mineralization. This is, of course, done most readily by true GEB detectors such as the COINMASTER 4900/D. These detectors will detect gold in its natural form as nuggets, hard-rock specimens or rich ore samples or locate black sand deposits.

The "49er" is used in the GEB/NORM or GEB/MAX mode for prospecting. Before entering the field, the detector must be bench tested to locate the exact point on the GEB control where a

ferrous mineral sample will give a negative audio response and gold or metal sample will give a positive audio response. This point is somewhat different on every detector, but White's has marked a NULL band on the GEB DIAL to show the margins of this location. You may use this average marking, but it is best if you determine the exact point at which this nulling takes place. This NULL POINT is merely used as a reference point to predict what HOT ROCKS and MINERALIZED AREAS will do to your audio signal.

The location of this NULL POINT is of value to predict the detector's response to HOT ROCKS in other hunting situations as well as PROSPECTING. The HOT ROCK is frequently found in mineralized beaches, parks and various places across the country. It is essential to be able to predict the detector's response to these false signals and separate them from good signals. After this NULL POINT is located on the detector, I will refer to a setting or ground balance as being to the LEFT OF NULL or to the RIGHT OF NULL.

LOCATING THE NULL POINT

To properly locate the NULL POINT on the GEB DIAL, it is necessary to have a known mineral sample. One has been included with the "49er" for this use.

The detector is now placed on a table or object which contains no detectable metals or minerals. Remove all watches, rings and jewelry. It is necessary to find the most sensitive area of the loop to calibrate the detector. (This will be the electrical center of the coil.) On most COINMASTERS this will be very near the physical center of the coil or loop. The exact spot can be located by passing a small coin over the coil, about 1 or 2 inches away from the coil, and marking the point of loudest response with a felt tip pen. It is important to use this most sensitive area to obtain accurate results with the mineral sample provided. The sample will be moved toward and away from the coil and never across the coil. Faster movement produces more easily heard sound.

Set up the dials as if the detector was going to be tuned in GEB/NORM. In fact, this is exactly what will be done, except the detector will not be balanced to any ground. Instead the detector will be balanced to the mineral sample provided. At this point we will have determined the exact NULL POINT or physical center of the GEB control. This should be somewhere within the NULL POINT band preset by the factory. Make a mental note of where this point is on the band, or mark it. We will need to know this point of reference.

Set the GEB DIAL at the center of the NULL BAND and the TUNER all the way to the left or counterclockwise to MIN. The rest of the dials and switches are set up just as if you were going to ground balance your detector. The SENSITIVITY DIAL is set to the end of the solid band or to the normal sensitivity. The DISC DIAL is set at "5" to start. The MODE SWITCH is set at GEB/NORM or GEB/MAX and the POWER SWITCH is set to ON. Press and in hold the TUNER BUTTON while at the same time turn the TUNER DIAL to the right or clockwise till a faint hum or threshold sound is heard. Release the TUNER BUTTON. Now move the mineral sample provided toward the electrical center of the coil in order to get a positive response (an increase in sound above the threshold sound). Do not touch the coil with the sample, one or two inches is fine. If the mineral sample provided does not produce a positive sound, move the GEB DIAL slightly clockwise and press and release the BUTTON. Try again. Keep trying a clockwise correction on the dial till a positive sound is heard. You have now gone a bit too far so back off just a bit. Remember to always press and release the BUTTON after each correction on the GEB DIAL. Stop at a point just to the left of where a positive sound occurs. If the sound had increased when you brought the mineral sample provided to the loop, you would have corrected counterclockwise, if the sound had decreased, you would have corrected clockwise or to the right. Always stop at that point where there is a definite decrease in the threshold or a NULLING OF THE SIGNAL.

The second NULL POINT that must be predetermined is the one on the DISC DIAL, which will be used to eliminate or identify HOT ROCKS. The factory has also put a PRESET band on the DISC DIAL to indicate the average range of this NULL POINT. Each detector is slightly different, so for the most accurate results you should determine the exact spot this nulling occurs. You will determine this NULL POINT in much the same fashion as you did on the GEB DIAL. First set all the dials and switches just as you did to determine the GEB NULL. Air tune the detector to the threshold sound. Now switch the MODE SWITCH to TR/DISC and press and release the TUNER BUTTON. Bring the mineral sample provided in toward the loop just as you

did when determining the GEB NULL and note whether the threshold sound increased or decreased. If the sound decreased, correct the DISC DIAL, not the GEB DIAL as before and do it in the opposite fashion. That is, if the sound decreased, move the dial slightly to the left or counterclockwise. Don't forget to press and release the TUNER BUTTON after each correction. Continue to bring the mineral sample provided toward the loop and note the change in threshold. If the sound increases, correct toward the right and if the sound decreases correct toward the left. The point where the mineral sample makes the threshold sound fade is called the TR/DISC NULL POINT and will probably be in the FACTORY PRESET BAND. The DISC DIAL will always be set at this point while PROSPECTING or when HOT ROCKS need to be identified.

PREDICTING RESPONSES BASED ON THE NULL POINTS

The NULL POINT on the GEB DIAL is only a reference point to predict the response of the detector in certain operating modes. THE DETECTOR IS NEVER SET AT THE NULL POINT FOR SEARCHING, unless, by chance, that is the exact spot where the ground is cancelled out. Always ground balance the detector on the area to be searched and then note where that point is in reference to the NULL POINT. We can then predict the following:

1. If the detector is ground balanced at a point to the left of NULL and the detector is operating on GEB/DISC or TR/DISC, a HOT ROCK WILL MAKE A POSITIVE SOUND.
2. If the detector is ground balanced at a point to the left of NULL and the detector is operating on GEB/NORM or GEB/MAX a HOT ROCK WILL NOT BE HEARD.
3. If the detector is ground balanced at a point to the right of NULL and the detector is operating on GEB/DISC or TR/DISC a HOT ROCK WILL NOT BE HEARD.
4. If the detector is ground balanced at a point to the right of NULL and the detector is operating on GEB/NORM or GEB/MAX a HOT ROCK WILL BE HEARD.

It is therefore the situation in "4" which will present the problem for PROSPECTING and HOT ROCKS, since we PROSPECT in GEB/NORM or GEB/MAX by choice and gold is usually found in heavily mineralized areas which usually tune to the RIGHT OF NULL; and also the situation in "1" which occurs in parks and beaches where we would be searching by choice in GEB/DISC or TR/DISC and the area might have low mineralization.

Dealing with HOT ROCKS is much the same whether you are prospecting, hunting in a park or searching out a beach. As long as you understand the problem and know where your NULL POINTS are you can deal with them.

DEALING WITH THE HOT ROCK

In situation #1, it is easy to identify the HOT ROCK. You are searching in the DISCRIMINATE mode and must go to an all metal mode to pinpoint or locate the target anyway. When you have switched modes, usually by pressing and holding the TUNER BUTTON, the detector will be operating in GEB/NORM and the HOT ROCK causes the threshold sound to NULL. Therefore if a signal is heard on GEB/DISC and you switch modes to pinpoint and the signal disappears, it is not a metal target, but is a HOT ROCK.

In situation #4, such as is the case when encountering HOT ROCKS in Prospecting, we act in the following manner. Ground balance the detector to the ground conditions, observing that the point of balancing is to the right of NULL. Set the DISC DIAL to the NULL POINT which you have predetermined. If you have not determined the exact NULL POINT, be certain to set the DISC DIAL slightly to the right of the null band. Continue to search in either of the GEB modes. When a signal is heard it could be a metal target or a HOT ROCK. When you hear this positive response, center the target and switch the MODE switch to TR/DISC with the loop flat on the ground or just above it if needed and press and release the TUNER BUTTON. Now slide the loop across the target area. If the signal increases in intensity or remains the same, dig the target; it may be good. If the signal definitely fades or drops off, the target is probably a HOT ROCK. Switch back to one of the GEB all metal modes, GEB/NORM or GEB/MAX and continue to search.

ORE SAMPLING

With the detector tuned as we did when we bench tested it to determine the NULL POINTS it will correctly analyze ore samples. Support it with the loop way from the ground (an old tree stump works nicely) and bring samples within 1"-2" of the loop. Any ore sample containing more metal than mineral will respond positive (increase in audio signal) on the detector. If there is more mineral than metal then the response will be negative (the signal will fade). During this testing, the GEB DIAL is set at the predetermined NULL POINT. Always remember to touch the TUNER BUTTON after each ore sample is tested.

This ore sampling technique is very useful around the tailings of old mines. The miners often only saved ore which contained visible gold and tossed the rest aside. This technique allows the modern prospector to look inside the tailing sample and correctly analyze its content. Do not scan the tailing pile, but instead lay the detector on an old tree stump and bring each ore sample toward the loop in the same manner used when bench testing the homemade samples.

NUGGET HUNTING

When nugget hunting, balance the detector as you would normally do for coinhunting. Remember, most gold is found in mineralized areas and careful ground balancing will guarantee the greatest depth of detection. Use GEB/MAX, if possible. A novice will prefer to use the more stable GEB/NORM till he gains experience. The double stacked tuner found on the "49er" will allow the detector to be balanced much more easily on heavily mineralized soil. Also, extra depth can be achieved by increasing the sensitivity on the SENSITIVITY DIAL. If the signal becomes too erratic to operate, back off on the sensitivity.

FINDING BLACK SAND DEPOSITS

Nuggets of small size are often missed when nugget shooting and, of course, flour gold is hard to detect even when in large amounts. Black sand deposit pockets often contain small nuggets and flour or flake gold. The "49er" finds black sand pockets easily and it is left to the prospector to pan out the contents of the pocket to determine its worth. This method is valuable to determine areas to dredge, dry wash or hydraulic sluice.

Tune the detector to balance out the ground mineralization just as you would for nugget hunting using the GEB/NORM or GEB/MAX modes. Check several spots in the area being searched to be sure a pocket was not under the loop when tuning.

Since areas where black sand pockets are likely to be found will probably require tuning of the GEB DIAL to a point to the right of NULL, we can predict a black sand deposit will produce a positive sound from the detector. This would be the same response we would expect from a piece of metal or gold nugget. However, in contrast to a HOT ROCK Under the same circumstances, a pocket of black sand would be fairly large and give a positive response over a much larger area. Do not expect a sharp sound as that from a coin or small target. As these pockets might be deep, earphones must be used at all times. If the GEB DIAL had been set at a point to the LEFT OF NULL, then the black sand deposit would have produced a negative signal or a fading of the threshold sound.

If the NULL POINT set on your DISC DIAL does not make the HOT ROCKS you are finding in the field fade upon testing, then use one of these HOT ROCKS to set your DISC NULL POINT Instead of the sample from the factory.

PROPER CARE OF YOUR DETECTOR

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

CLEANING: The loop and 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 battery. Excessive heat can also damage the instrument. Never leave it in the sun. If it's left in a car on a hot day, cover it to protect it 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 on any part of your metal detector.

c. Avoid sharp jars to the loop.

d. Do not allow battery to corrode inside the instrument.

e. Do not alter or modify your instrument during its warranty period. Alterations will void the warranty.

CODE OF ETHICS

Treasure hunting is the kind of new hobby that fires the imagination and generates its own enthusiasm. It's the most natural thing in the world to want to dig as fast as you can the minute you hear that first loud unmistakably "good" signal. It will be a real thrill to discover there's treasure right beneath your feet!

But wait a minute! We strongly urge you to adopt a code of ethics which will preserve the environment and also the rights of treasure hunters to operate detectors with as few restrictions as possible.

Before you even begin a search, check the law, ordinance or regulations about hunting on publicly owned sites. Abide by the rules. If the area is private property, get written permission from the owner to search it. You may find he will be more eager to give permission if you suggest sharing your finds with him, or if you offer to search for a specific item he has lost.

ABOUT DIGGING: In lawn areas limit the size of the hole to a maximum of two inches in diameter, cutting a plug of sod which can be easily replaced. After you take your finds, be sure to carefully fill the hole. HOLES ARE BOTH UNSIGHTLY AND DANGEROUS!

Detectors designed for locating large and deeply buried objects should be used with discretion - never in the lawn area, and with careful judgement in other locations. 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 local soil and climatic conditions. Public officials and private property owners will be much more likely to allow continued treasure hunting if you do no environmental damage. You may even be able to increase your reputation as an ethical hunter by volunteering to carry out and dispose of whatever trash items you find.

Adoption of these attitudes can only enhance the public's opinion of treasure hunters and assure that many areas, both public and private, remain open to you and your new detector.

A 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 customers, White's reorganized its warranty service program significantly. There are now four 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 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.

Any repair work preformed by other than a White's National Warranty 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!

TO LEARN THE NAME AND LOCATION OF YOUR NEAREST WHITE'S DEALER,
CALL: TOLL FREE 1/800/547/6911

WHITE'S ELECTRONICS' LIMITED WARRANTY

If within two years (24 months) from the original date of purchase your White's detector fails through normal use or 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 to detectors 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 nor the retailer shall be liable for any incidental or consequential damages resulting from defects or failures of the instrument to perform.

Some states, however, do not allow limitations on the 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 Rd.
Sweet Home, OR 97386

white's electronics, inc. 1011 PLEASANT VALLEY ROAD • SWEET HOME, ORE. 97386

P/N 621-0267 REVISED 7/85 Printed in U.S.A.