



FIELD TEST



The Teknetics Mark I metal detector. For full details read the Field Test below.

TESTING THE TEKNETICS MARK I

By Robert H. Sickler

When a person uses a particular brand of metal detector for a number of years and becomes loyal to it, he or she sometimes tends to ignore the validity of other brands.

For quite some time I have stayed away from visual/audio identification type detectors because they generally had to be scanned rapidly over a target to operate the ground balance discriminate mode. I hunt mostly in dense wooded areas and rapid scanning would be impractical for me. Other times I hunt beaches and parks and the concentration of pulltabs and foil forces me to raise my old detector's rejection settings to the point that I might be missing thin gold rings (the diamond carrying type) and nickels... not to mention a possible small gold

coin or two! To get all of the above good targets one must use low discriminate settings on non-ID detectors. This results in digging an excessive amount of trash to produce better finds. With growing pressure on the TH'er to be extremely careful with recovery techniques, the less unfruitful recoveries the better!

With all of the above on my mind for sometime I decided to take a chance and purchase the Teknetics Mark I. Their advertising claimed the detector had two to four inches deep penetration in discriminate and boasted slow scan speed for the visual/audio ID circuits. If that wasn't enough, the detector could also be programmed to reject pulltabs and even screw caps and still sound off on nickels.

Well, I went ahead with the purchase and I am not sorry in the least! Let's take a closer look at this metal detector.

At first glance eight knobs, a two-way toggle switch, and a meter with a wealth of target information can be rather imposing. But actually this detector can be mastered quite quickly. The circuitry is separated into two distinct modes via a toggle switch located at the end of the handgrip. Toggle to the left and release is the all-metal ground cancel non-motion mode. This mode is used for precise pinpointing and determining coin depth. Toggle to the right and release is the ground balance discriminate mode which requires only very slow motion to activate the circuitry. In this mode visual target identification and audio target identification are relayed to the operator.

Each of the eight controls has a blue colored segment among its panel markings. These controls, one set in these areas, give you average operating values for "quick-set" detecting. As you become more familiar with the detector in time, each of the controls can be fine tuned to your specific hunt area.

The Mark I has one of the lightest searchcoils I have used yet. It is seven and a quarter inches in diameter and its configuration is bi-planar concentric. The only criticism I have about the entire detector is that the single fin, to which the control stem isolator is attached, could have been a bit thicker. This would insure against possible fatigue and breakage. I sometimes hunt in high grass and brush and this puts a lot of stress at this point. (Editor's Note: Teknetic's new loops are now out and do have the double fin design.)

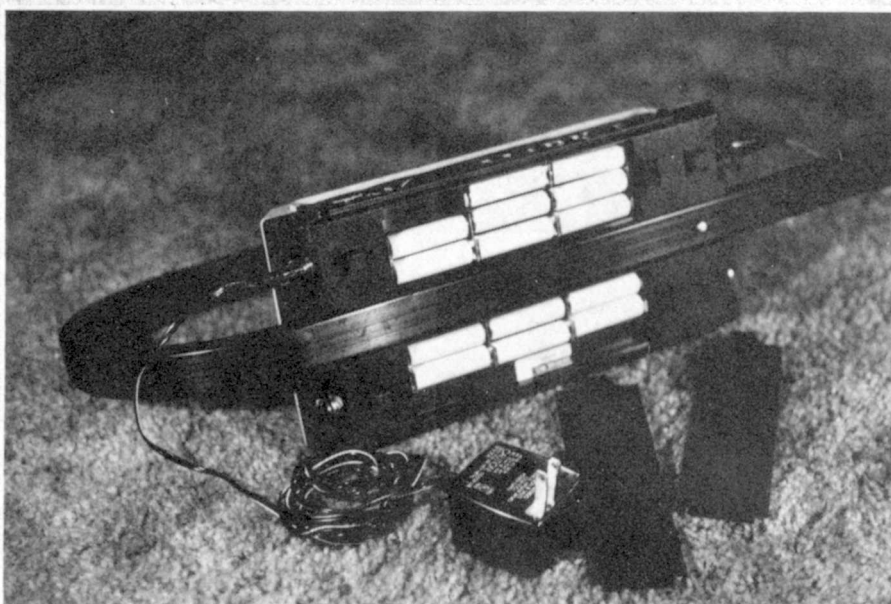
The Mark I weighs 4 pounds 12 ounces and with the lightweight searchcoil, the balance is very comfortable. The control handle is high above the well engineered control housing. The meter is angled up for good visibility. The operating frequency of the Mark I is crystal controlled for maximum stability. Batteries are housed in two separate compartments located flat in the bottom of the control housing. Access is gained by two quick-latch doors. Fourteen AA size nicads and charger are standard equipment and can be charged without removal via an external receptacle. A large external speaker and a stereo headphone jack are very accessible. The control stem is uniquely rectangular and is fully adjustable to the tallest user via a

single spring-button lock. The Mark I, like previous Teknetics models, is very attractive in design and color but the quality of performance rather than a pretty box is what counts for me. Let's review the actual operation of this detector to see if beauty is more than just skin deep!

Once the nicad batteries have been charged for 15 hours you are ready to operate. Conventional batteries can also be used if you can't wait! If you treat rechargeables right they can save you a lot of money if you go detecting often. Caution here: if you hunt for only two or three hours after full charging, do not charge the batteries again. Keep track of your time spent hunting each time out and use the nicads for the rated 15-20 hours per charge. Failure to do so will result in your nicads developing a memory to the incorrect short charge cycle. They may shut off on you in the middle of a long hunt if you don't teach them and yourself right from the start!

Once in the field you can use the "quick-set" blue areas on the control panel and hunt immediately, but first let me detail their operation so these controls will have an even greater effect on your success and understanding.

Turn the power control to the blue "on" area. Turn the tuner to achieve slight audio or threshold of sound. For those who prefer silent operation the GB Disc mode can be used below threshold without loss of sensitivity. Press the toggle switch to the left and release. This puts the circuitry into the non-motion ground balance mode mentioned earlier. Set the ground balance control to the blue area. More recommended is ground adjustment by the conventional procedure thus insuring accurate neutralization of ground (ferric oxides) minerals in your hunt area. The blue area of the ground balance control is equivalent to "automatic ground reject" detectors which have been preset to average ground minerals internally. In my opinion, when less or more ground minerals present themselves an "automatic" detector is not as effective in canceling out mineralization as a detector with a full range manual ground control. A non-motion ground balance mode is also the best way to identify "hot rocks." These rocks can cause a motion discriminate mode to react as if they were metallic. If your detector has a non-motion GB mode like the Mark I you will be able to identify "hot rocks" by the null in



The battery storage panel. Inboard recharging nicads and charger are standard equipment.

threshold when switched to this mode.

Next we have the volume control. This is especially useful if you own the lightweight earphones without the built-in volume controls. Otherwise set it in the blue zone and forget it.

Now we can operate and adjust the GB Disc motion circuitry. The Mark I is designed to provide optimum identification and discrimination in light to medium mineralized ground. The motion required to produce a target audio and I.D. on this detector is ultra-slow—a definite advantage for wooded area hunting. If heavy mineralization is common to your area you may have to reduce the ground sensitivity control to the "low" area to maintain stability and reliable I.D. readings. The operator's manual states that "even at the lowest gnd. sens. setting this detector has better depth penetration than many detectors have at maximum."

The major advantage of this detector's GB Disc motion mode is visual and audio target identification. You can operate the Mark I at minimum discrimination settings and get maximum penetration ability while seeing and hearing the probable identity of a target signal. Have you ever wondered about the "clicks" and "ticks" your non-ID motion detector was making while operating to reject pulltabs? Could they have been small gold rings or nickels?

The Mark I meter is calibrated for iron through dollar coin. This visual indication is independent of the audio response. The GB Disc control is used to eliminate audio response on unwanted items. Like all detectors,

audio response will not be positive on gold items if set too high. In areas of low trash content I use nail rejection settings and analyze all positive audio responses with the visual meter readout. If you look at the meter you can see that the words "nickel" and "P. Tabs" overlap each other. Actually nickels read out about 28-30 and "lock-on." Pulltabs read out about 35-37. Their audio responses will be slightly different in pitch also. By analyzing each response numerically you can actually tell the difference between the nickel and pulltab with great accuracy. "Locking-on" means that the meter needle will register stable in one spot with a single level searchcoil sweep closely about the target center. The reading will remain until another rejected or accepted target is encountered.

Not only do you get a visual aid for identification but you also get a distinct audio pitch on targets. Foil gives a low pitch and a dollar coin screams! Iron bottle caps tend not to "lock-on" and give off multi-pitched sounds. Very large targets such as a rusted can read off-scale and the audio will disintegrate.

You may adjust the tone control to your hearing preference, but if set at the same pitch as a nickel response (blue area) it can be used as a reference tone for other targets that read close to nickels.

Adjustment of the GB Disc control is as follows. Bench test a pulltab and screw cap to see where they null or reject. To do this press the toggle to the right and hold (power control to the blue "on" position). Turn the GB Disc control and watch the needle

Teknetics, inc.

TUNER



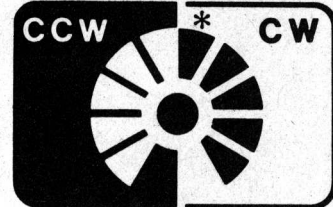
tone



GND SENS



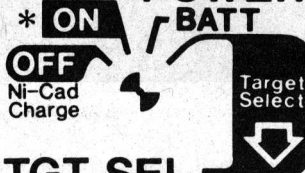
GND BALANCE



VOLUME



POWER BATT



TGT. SEL.



GB DISC



*** = BLUE "QUICK-SET" AREA**

The Mark I control panel layout.

control to the extreme "iron" area and all targets except the Target Select item will be accepted. Versatile potentials for hunting techniques are now available to you!

Field Test

Now let's see how the Mark I performed under actual field conditions.

I picked an area near my home in the Catskill Mountains where an old hotel once stood. I had hunted this area before along with others before me. Upon arriving, I immediately ground balanced the Mark I. I switched to the GB Disc mode for searching to eliminate audio nail response. Since I encountered only a few pulltabs on prior hunts, I did not find it necessary to use the Target Select feature. The slow sweep speed was a pleasure to use around small trees and brush. The detector remained extremely stable. Suddenly, under a squatty pine tree, I received a high pitched signal! I knew immediately it could be a coin. Next I made another sweep and the meter "locked-on" to reading of "82!" I remembered by test garden and bench test figures and began to think silver quarter! I was quite excited and I almost forgot about pinpointing before retrieving. Quickly, I switched to the non-motion all metal mode. I "X'ed" the target with the coil on the ground. The response was physically not wider than my searchcoil's diameter which also told me "coin." The meter read out the depth to be three and a half to four inches. The depth reading may be held for closer inspection by holding the toggle to the left; (once released it will retune the GB mode) now I tapped the toggle switch to the left again with the searchcoil still over the target. This detuned the target signal response and the sound width became very narrow. Precise pinpointing was now easily and accurately accomplished. I carefully cut a small winged three inch deep plug and scanned the opening and found the target still buried! I probed around in the dirt and a light gray quarter sized coin appeared. As I removed it and looked closer, I could see the sharp detail of a 1930 Standing Liberty quarter! This detector performed flawlessly and it added a lot more enjoyment to my hunting technique. The visual, audio, and depth indications actually build confidence in the user. You find yourself more willing to check every response

until the meter reads "35" on the number scale and release toggle. Pass a pulltab under the searchcoil and see if you have reached the rejection point. Keep adjusting until you have this point and memorize this number. I use "40" but your detector may vary with the test pulltab composition. Do the same for a screw cap (58). The GB Disc panel markings may not collaborate this, therefore this adjustment is more accurately used.

As mentioned before, I use low rejection settings (nails) to get all other audio responses for analysis by the meter in low trash areas. But what if pulltabs and screw caps are so plentiful that you do not want to spend a great deal of time analyzing each target? We now come to the final control and most innovative feature on a metal detector yet. . . Target Select! Target Select lets you eliminate the responses of trash items and hear nickels (and gold rings that read in that same range).

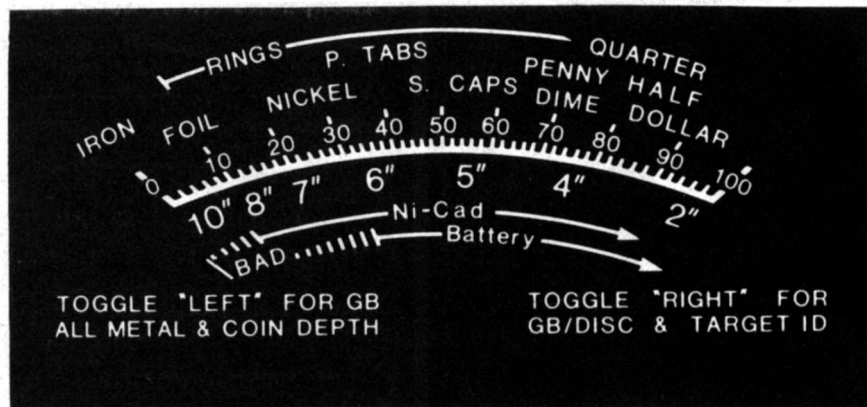
Remember those numbers I told

you to memorize? Now we will use them for the Target Select control. As before, adjust the GB Disc control for audio rejection of pulltabs (40). Turn the power control to the Target Select position and hold toggle to the right and dial in "26" (positive nickel response) using the target select control like you did with the GB Disc control. Now pass a pulltab (toggle released) three inches under the searchcoil. A negative response or null in threshold should be heard. Pass a nickel or 14K medium sized gold wedding band under. . . a response! If not, you may have to re-adjust the Target Select slightly until a clear response is heard. You can also do this while rejecting screw caps! Caution: some class rings may read near the rejection point of screw caps. Rotate the GB Disc (while adjusted for Target Select) to the extreme "coins rejected" position and the only item you will receive positive audio response on will be the Target Select item. Rotate the

carefully. Those elusive small gold rings will now be vulnerable to detection by the operator who knows where they read amongst trash indications.

Take a trip to your local Teknetics dealer and check out the Mark I yourself. Tell them you read about it in *Western & Eastern Treasures* magazine.

Author's Note: At the end of this article I went to another previous worked area with the Mark I and encountered a strange target response. One sweep caused the meter needle to jump to the "dime" area. Another sweep back over caused the needle to drop to "iron." The audio pitch went from high to inaudible respectively. Because of the "dime" indication I felt compelled to investigate. A large root obstructed my recovery



A close-up of the Mark I metal detector meter.

but I worked around it and added to my collection one beautiful 1906 Barber dime from the depth of about five inches! But what about the abnormal visual and audio responses?

I scanned the hole once more and this time the threshold nulled only and the needle pointed to "iron." Just as suspected, trash and treasure in the same hole!

DETECTOR REVIEW

BRAND: TEKNETICS

MODEL: MARK I

PRICE: \$749.99

CLASS: ☐BFO ☐RF/TR ☒VLF/TR ☐PI

FREQ. (KHz): 6.592

DISCRIMINATION: ☒YES ☐NO
☒MOTION ☐NON-MOTION
☒MINERAL FREE

GENERAL:

CONFIGURATION: ☒HAND HELD ☐HIP MOUNT
☐COMBINATION

LENGTH EXTENDED: 53 INCHES

LENGTH COLLAPSED: 46 INCHES

WEIGHT: 4 LB. 12 OZ.

CONTROL BOX DIMENSIONS: 5"Wx12"Lx3½"DP

COLOR(S): GRAY/BLACK

OPT. TEMP. RANGE: 33-100°F

OPT. HUMIDITY RANGE: 0-75% R.H.

SHAFT ADJUSTMENT: ☒HOLE/SPRING BUTTON
☐FRICTION COLLAR
☐COMBINATION
☐NONE

SEARCHCOIL:

SIZE: 7½ DIAMETER (INCHES)

CONFIGURATION: BI-PLANAR CONCENTRIC

ADJUSTABLE: ☒YES ☐NO

WATERPROOF: ☒YES ☐NO

WEIGHT: 8½ OZ.

REMOVEABLE: ☒YES ☐NO

OPTIONS: Now Available New Super 8" Loop and 12" Loop

POWER:

BATTERY SIZE: AA 1.2 NICAD

QTY: 14

LIFE: 1000 CYCLES

RECHARGEABLES: ☒SUPPLIED ☐OPTIONAL

CHARGE: ☒INBOARD ☐REMOVE

TIME: 14-15 HOURS

LIFE: 15-20 HR. CONTINUOUS

AUDIO:

EXTERNAL SPEAKER: ☒YES ☐NO

HEADPHONE JACK: ☒YES ☐NO

FREQUENCY (Hz): N.A.

☐PRESET ☒VARIABLE

TARGET AUDIO ID: ☒YES ☐NO

METER: ☒YES ☐NO ☒NEEDLE ☐LCD

INTENSITY SCALE: ☒YES ☐NO

BATTERY CONDITION: ☒YES ☐NO

VISUAL TARGET ID: ☒YES ☐NO

COIN DEPTH READING: ☒YES ☐NO

OPERATION MODES: GB
 GB/DISC
 TARGET SELECT

CONTROLS:

MODE SELECTION: ☒YES ☐NO

TUNING: ☒YES ☐NO 1 TURN(S)

GROUND REJECT: ☒YES ☐NO 1 TURN(S)

SENSITIVITY: ☒YES ☐NO
☐Preset ☒Variable

POWER ON/OFF: ☒YES ☐NO

TOPE (PITCH): ☒YES ☐NO

BATTERY CHECK: ☒YES ☐NO

☒Visual ☒Audio
☒Manual ☐Automatic

VOLUME: ☒YES ☐NO

DISCRIMINATE: ☒YES ☐NO
☐Preset ☒Variable

OTHER: TARGET SELECT

USES: PROSPECTING
 COIN/RING HUNTING
 RELIC HUNTING
 BEACH HUNTING

MANUFACTURER/INFORMATION:

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