Detector Field Test

Minelab X-Terra 50

Des Dunne

Field Application Specialist
Minelab International

Introduction

It has to be said that Minelab are no slouches when it comes to making fine metal detectors. However, it can also be said that some of the models they have produced are robust machines but a tad on the heavy side. All that has changed, as they have just introduced a brand-new range of truly lightweight models. These are called the X-Terra, using brand new technology termed "V-Flex". There are two models presently available: the X-Terra 30 and the X-Terra 50 (which has more features and advanced user functions).

Despite coming rather late into providing lightweight detectors utilising a single frequency (the Musketeer aside) it is good that Minelab have listened to their customers and provided the one thing that searchers everywhere want – lightweight detectors.

The performance levels of some traditional VLF single frequency machines, especially those with meter ID systems, can leave a lot to be desired. With the older VLF system, one of the drawbacks was accurately identifying targets at even a modest 4in in-ground depth. They also lacked lock-on with positive and consistent values on a meter that, due to ground mineralisation, could at times show a negative value for a positive target and ultimately cause some confusion in the field.

Minelab engineers looked at these problematic areas and went about the task of improving the existing technology, coming up with a new improved system that they have called "V-Flex".

V-Flex Explained

V-Flex uses state of the art digital and mixed-signal components to enhance standard single frequency VLF technology by replacing most of the analogue circuitry with digital signal processing. The small amount of analogue circuitry still employed has been very carefully designed and calibrated to obtain the outstanding sensitivity, stability and the repeatability required to match the performance of the processing in the digital domain. This radical departure from traditional approaches to metal detector design has been made possible by advances in electronics that power personal digital devices such as mobile cell phones and tiny portable audio devices such as the new I-Pods.

What does this mean for the X-Terra user?

For the X-Terra owner this precision means dependable performance and improved immunity to environmental conditions, such as ground mineralisation, electromagnetic interference, and temperature variations.

V-Flex requires search coils that are hand-built and calibrated to a very high standard. Each time the detector starts up a primary microprocessor in the control box begins the digital signal processing and a secondary microprocessor inside the search coil recognises:

1. The coil type configuration - concentric or DD
2. Coil size
3. Frequency of that coil.

So it is not the detector that operates at a set frequency but the actual search coil that denotes the frequency chosen from a very low to a very high kHz setting. So you have a truly "future proof" detector that you can upgrade as often as you want as more accessory coils become available for the detector. It is also very useful that all you have to do to obtain different results on different soils/sites is to use an alternative search coil. For example, if you want to search deeper for larger objects use a low frequency coil. If you want to search to a shallow depth and make very small finds (in stubble rows, for example) use a higher frequency coil.

By the way, the origin of the new machine's name is interesting. It came about by "Ex = of/out" and "Terra = land". So we have, "X-Terra = from the land"

Instruction Manual

This is a very nice pocket-sized book of about 60 pages so you can take it with you in the field. It is very comprehensive and describes the two models - X-Terra 30 and X-Terra 50 - in great detail. It is packed throughout with illustrations and explanations on all the controls. There are some major differences between the two models and you should refer to the manual to check. For this test I will be discussing my experiences with the X-Terra 50.

X-Terra Controls

The machine couldn't be simpler! Furthermore, there are some really clever features built into the operation of the machine that you are bound to notice - but more on that later. For now let's examine the control panel.

Power. This turns the unit on and off. It also erases patterns and enables factory preset. Power for the X-Terra is supplied by four 1.5 volt AA cells that are held inside the control box via a hinged door. These should power X-Terra for 25 hours (alkaline cells).

Menu Select. Accesses and scrolls through detecting settings.

Pinpoint/Detect. This has two functions: (a) assists in locating the exact position of targets, (b) exit menu settings and returns to "Detect".

Plus and Minus. Adjusts settings and scrolls to the left (-) or right (+) through the discrimination segments.

Patterns. Scrolls through the different discrimination patterns.

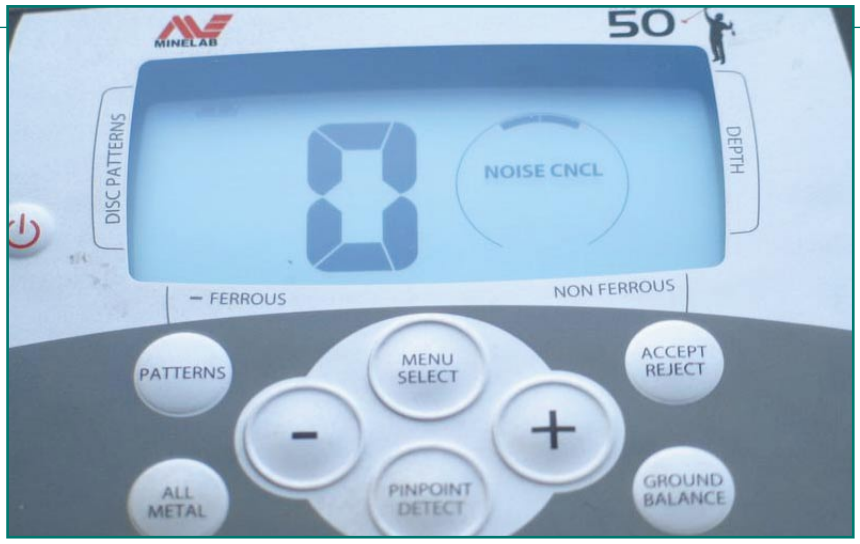
Accept/Reject. Turns on/off individual discrimination segments.

All-Metal. Toggles between the selected discrimination pattern and the all metal pattern.

Ground Balance. Activates the manual adjustment to compensate for different types of soil. This function couldn't be easier and quicker! Just press, bob the coil up and down a few centimetres above the ground and - using either the plus and minus button - find where the two tones merge into one and dip in volume; press Detect and you are ground balanced. Bear in mind that this might not be possible over wet salt beach conditions, but it is possible to use the X-terra on salt wet sand by adjusting sensitivity and discrimination accordingly. Similarly, if there is a difficulty ground balancing on any soil, reduce sensitivity and try again.

Keypad Layout

This is very nice indeed with the most used buttons falling to easy reach of the thumb or forefinger. An especially nice touch is that the Pin Point/Detect and All-Metal buttons are strategically located so you can jump from one to the other with considerable ease. Also, if "iffy" signals are heard that might be deep iron or something breaking through a created discrimination pattern simply press All-Metal and look at the screen. If a low tone accompanied by a -9, -6, or -3 number appears the target is probably ferrous. Re-press All-Metal and it goes straight back to your created pattern – no need to touch the Patterns button.



This is one of the clever features referred to earlier.

Probably the most important button is the Menu Select. This takes you through the adjustable functions in the detector:-

1. Volume from 1-20
2. Sensitivity from 1-20
3. Noise Cancel of which there are 3 channels: 0 which is Pre Set, +1 and -1.

Meter Layout

The meter is divided into eight different areas of information for your attention.

1. The two discrimination patterns are icons shown as 1 & 2. (Note there is also an icon for All-Metal shown on-screen as AM).
2. Ferrous area -3, -6, -9.
3. Non-Ferrous + 3 to + 45
4. Depth indication – five arrows in a V shape scrolling down (reasonably accurate on coins to about 20cm).

Note on Discrimination: Where some discrimination has been selected a small black block at the bottom of the meter will be illuminated, typically this will be ferrous based with -3, -6 and -9 rejected. You can decide what your discrimination pattern will be for a site you would like to search. For example, if beach detecting, you decided pull-tabs and whole cans were a problem you could select to reject block number + 12 and + 36. Another clever feature of the X-Terra is that the Overload function can help in identifying shallow cans. However, on a site that could reward with hammered coins it would be best to accept numbers + 3 to + 18 (and possibly lower and higher depending on how worn and/or clipped coins might be).

5. On the meter there is something I have never seen before on any detector and that is a visual icon showing when the headphones are connected. Seeing this at first I found it rather odd, until I discovered its real function and again it is where the clever side of Minelab design shines through. X-Terra can remember two different volume levels one being with headphones and the other without and it will revert to either one automatically when you insert or remove the headphones - ingenious! The headphone socket is quarter inch and is recessed inside the control box, which has a rubber dust-proof cover which should be kept closed when not in use

6. Battery level indicator icon – shows two black blocks for a new set. There is another clever side to the volume output of X-Terra, and that is if you operate without headphones the volume level diminishes as the battery cells become depleted to preserve usable power so you can detect for longer than another conventional machine.

7. ID Number Blocks – these are very large digital numbers, which correspond to the conductivity of detected targets. The numbers will be positive when targets are non-ferrous and with a minus slash for ferrous items if operating in All-Metal. The four tones will also range from low for ferrous to high for very conductive.

8. Pin Point function – has an outer solid circle in which another complete circle will be produced concentrically when the coil is right over the centre of the target. The further the coil is from the target the inner line will drop down and come fully up the closer you get to the buried target. Visually this is a treat and is a delight to use as it provides some of the best pinpointing I have come across. It also features an audible rising crescendo tone, which peaks when you hover over the target.

Accept/Reject Explained

In your Factory Discrimination Pattern - or one that you will build and use yourself - there are "Discrimination Segments" or blocks assigned to all the

Fig.1.

Fig.2.

numbers, either minus or positive, for the entire range of targets that X-Terra can locate.

Each time you locate a target you will see a numeric value for that target on the screen. The block assigned to the conductivity of that value will move either up or down to, and stop at that numeric value; it will then flash three times. If you decide that the target is undesirable, for example referring again to the pull-tabs on the beach, you can "block them out" and not detect that particular ID value anymore. Simply press the Accept/Reject button and the icon assigned to that particular target's value will again flash three times and will remain illuminated. An X will show that you have successfully blocked that number.

If you later decide to "turn it off" because you might like to create a different pattern, employ the following method. Using either the plus or minus arrows, scroll to the particular number you have rejected and press the A/R button again; the discriminated block will clear to accept that value again. It couldn't be any easier! You can "notch in or out" as many target values as you like. If you want to beach hunt for just pound coins scan a sample of that coin over the search coil to accept that numeric value only, and then blacken every remaining block. However, you need to be aware - and this is particularly true for pull tabs - you may still locate similar looking targets that do not correspond to the conductivity of the values you may have chosen to reject. If you want to use more discrimination then go ahead. But if you want to maximize your finds use as little "discrimination" as you can get away with and your patience can stand.

Erasing Patterns

In fairness to the Minelab engineers this procedure couldn't be any easier. To my mind they have taken heed of the customer using the product in the field and realised that detecting time can be scarce. Custom patterns are stored when the X-Terra is turned off. To erase patterns is simple. While pressing and holding the Patterns button turn the X-Terra back on by pressing the Power button once. During the start-up sequence release the Patterns button. After the start-up sequence the "patterns erased" message will appear as PE accompanied by a distinct sound.

Beach Testing

When I first received a prototype X-Terra for field trials I was extremely happy to test it but was unhappy with the mid-summer conditions. Weather had been very bad and a few early excursions to the beaches revealed precious little - people were simply not around to lose anything.

Most fields had crops in them so that only left pasture and river foreshores. Then, all of a sudden, the sun shone and it got very hot. Using X-Terra on a dry sandy beach after a week of sunshine produced £25 in one early morning visit. This was repeated over a few days on other beaches and I netted about £80 in cash plus many other targets. Using little or no discrimination and low sensitivity at about 8, I raced along the beaches picking off the recent shallow losses. The sheer lightness of the machine (plus being strapped into the arm rest with the supplied arm-strap) provided the best "drivability" of any detector of this type I have used before. It simply went to where it was pointed, quickly and easily without the coil rising up.

On a low tide I went into the shallow water and immersed the coil waiting for a screech to come; but there was none. A few other coins were located easily. If there were any false signals (they were rare enough) backing off the sensitivity eliminated them.

Fig.3.

Fig.4.

Fig.5.

Fig.6.

After becoming more familiar with the machine I experimented with higher sensitivities. Set to Sensitivity 18, a beverage can came up from 20in. Some small toy cars and other larger items came up from foot plus depths (Fig.1.).

Foreshore

A river foreshore was next searched. Finds were not prolific but I was impressed with the way that X-Terra rejected iron and remained perfectly quiet and stable. Some lovely subtle signals revealed tiny pieces of non-ferrous trapped between rocks and pebbles, and several inches under the mud. A French-made machine had been used here a week earlier but almost every signal turned out to be iron. The X-Terra found me a few nice "keepers" here (see Fig.2.).

Pasture & Woodland

The woodland search had been an unplanned event and I was forced into the woods as two very inquisitive and lively thoroughbred horses moved in on me as I was searching some pasture. A few coppers had come up, one from 11in with a reasonably good signal. A pigeon ring came up from about 7in deep with the number "GB87 S15425" (see Fig.3.). In the middle of locating another target the horses approached.

I made a hasty retreat as some years back I had a nasty "equestrian" experience in the same field! I had to leave the target. Following a woodland path - that contained a considerable amount of trash in the form of foil and ring pulls - several pre-decimal coins came up in a row. Silver pre-decimal is always nice to take home (see Fig.4.).

Stubble

As summer drew to a close some of my old fields were in stubble. They presented a beautiful sight, gold as far as the eye could see. But would I find some gold? Not on this occasion, but I did find more silver. During the afternoon of my third search of a promising stubble field, the detector gave a really beautiful sharp clear signal showing 15 on the screen. Three Vs pointed downwards to a possible depth of 6in. Digging down into the now-soft earth and scanning over the spoil the pinpoint sang out loudly over a tiny brown clod. Picking it up and crumbling the dirt I saw a long cross, possibly a hammered silver half groat of Edward IV. Unfortunately, it must have been hit by the plough as a tiny corner was broken off; but otherwise it is a beautiful coin (see Fig.5.).

Rolled

Another field I had been searching over the past year gave me the greatest surprise of all. I've used many other machines here in different weather and soil conditions. Two hours on a fine dry day put fifteen "keepers" in my pocket. Of particular interest is that they were mostly all tiny and very thin targets, which had probably been missed due to the sometimes ploughed condition of the field.

One find I was particularly pleased with announced itself with a sharp "clip-clip" positive two-way signal and turned out to be a third of a silver penny from 5in. Whenever I find a half or cut quarter I always wonder where the other pieces are. This is the fun of detecting, always looking to solve mysteries. Three other worn coins were found making it a total of five hammered for this test of the X-Terra 50. This machine really suited the flat soil conditions (see Fig.6.).

Conclusion

Going back in my mind to the day when a tiny brown cardboard box was delivered to my home I could never have guessed that something so small could deliver such a big punch! I guess it's true what they say about small packages. In this case it is certainly true – the X-Terra for its size, or lack of it to be more precise, is really good.

A really neat aspect of this detector is that when you are finished searching for the day you can break down the detector into its three different shaft parts and also remove the control box from the stem for safe packing and transportation home. Detector users who use public transport or like to take a detector on holiday will find this feature a great plus as it enables really easy packing into a small carry bag.

The introduction of this new line of detectors to the Minelab range, together with other current models, offers the potential to keep just about everyone happy.

This is a fine metal detector indeed and one that I could live with very easily.

Specifications

Manufacturer: Minelab

Model: X-Terra 50

Transmission: V-Flex single frequency

Coil: (Standard) 9in concentric, 7.5kHz

Visual Display: LCD

Audio: Internal speaker and 0.25in headphone output

Search Modes: Motion detector, discrimination, multi-segment notching (accept/reject)

Personal Settings: Customised discrimination patterns

Target Identification: Digital numeric display plus four tones

Batteries: 4 x AA alkaline or (Nimh/Nicad accessory rechargeables)

Armrest: padded, four position adjustable, with stand and arm strap

Length Extended: 56in (1.42m)

Length Un-extended: 48in (1.22m)

Weight (including batteries): 2.9lb (1.3kg)

Optional Accessories: Headphones, coil covers, environmental cover, coils

Contact Information: Visit your nearest Minelab dealer or log onto: www.minelabx-terra.com to order a free DVD. TH