The following applies either totally or in part to the X-Terra models X-30, X-50 and the new X-70 and is intended to provide some useful tips observed during many months of "real-life" field testing. It is also intended to provide some additional - and what is often difficult information to come by - relating to which coils to use, where to use a specific type, and once fitted to your detector, which sweep speed might be used to best effect. As always, this is intended to be only a guide and you might find that an X-Terra in your local soil conditions works best with a similar or completely different set-up.

All three coil types (ie Low, Medium, and High Frequency) are compatible with the X-Terra 70; two frequencies Medium and High are compatible with the X-Terra 50; and just the Medium (7.5kHz) frequency works with the X-Terra 30.

1. Iron Identification

At times in some mineralised soils or over conductive salt certain larger than normal iron shapes can fool the discrimination circuit (common in all detectors). Examples of such iron include round and holed pieces, square wheel nuts, and if the iron is not fully rusted through. This might happen more if, as a more experienced detectorist, you are using either no discrimination or have just one block segment discriminated out (ie -8 on the X-70).

Simply switch to pinpoint, as the X-Terra 70 will still update the ID in pinpoint mode. When you have established the exact centre of the target, scan over and back as tightly as you can. If the numbers showing are minus numbers, the target is iron. Typically, what also might occur is for several of the depth indicating arrows to illuminate all at once, plus the ID can show high forty numbers such as 44 and 46.

If there are absolutely no minus numbers and the tone is very high then you probably have a silver coin (especially if the numbers are from 42-44).

All of the above can be achieved in about three seconds as the buttons on the X-Terra 70 front panel are laid out to do this very quickly and easily.

2. Iron Location & Target Centre

From its shape and position in the ground, iron can be a difficult target to pinpoint exactly. What tends to happen is that you obtain "one-way" signals due to the "eddy currents" travelling along and "falling off" the end. This is especially the case if the iron object is a straight or slightly curved item such as a horseshoe fragment.

These can be troublesome signals for the detector user as they can take unwaranted time to investigate. However, with X-Terra 70 all that wasted time can be saved by using the following method.

Simply switch into all metal and move the coil a few millimetres to the left of the "original signal". If a signal is returned with a low dull tone and hollow sound, with the usual negative numbers, it is iron. Non-ferrous targets such as coins don’t “move” in that fashion and always produce positive IDs. This method may take a few attempts to get right but practice for a while and it becomes very easy to do.

3. Prospecting Mode to Identify Iron

Sometimes even using the above tricks might still have you suspecting that you are onto a good find, but it is disguising itself by giving out high numbers and high (possibly "strangled") audio returns. It could happen on coins that are on edge, sideways to the coil, or for items new to you that you have never found before and therefore are not familiar with their responses.

Simply press MODE AUTO and allow the detector a few seconds to settle down in Prospecting Mode at Iron Mask 5 (Pre-Set). Then scan across the target slowly and listen to the threshold return. If the signal continues and does not cut out the target is non-ferrous. If the signal does cut out the object is rusted and you can move on to look for the next target. Don’t forget to change back to Coins Mode.

4. Prospecting Mode to Pinpoint & Gauge Target

The Prospecting Mode on the X-Terra 70 isn’t just an all-metal mode! It is designed to detect difficult targets in difficult soils with better depth and
sensitivity compared to the Discriminate Mode.

The Prospecting Mode features an adjustable Iron Mask of 0-20. Even on maximum setting of 20 most low-conductive non-ferrous targets will still be detected while rejecting small nails, pieces of wire etc. But the real beauty of it is that it pinpoints really well (literally with pin-head sharpness) and allows the operator to trace exactly the real shape and size of the target. It therefore provides far more information to the searcher in this mode than the Discriminate Mode. Used in conjunction with one another, there is a lot of valuable time-saving information available. I'm not saying you should work in Prospecting Mode all the time, but used wisely and correctly it will save the searcher a lot of time.

5. Tone (Expanded 99)

Checking certain signals in "99 Tone Expanded Range" (there are not 99 tones, but a wide range of tones) in a modern park/beach setting that produce known "pull-tab" numbers is a good way to identify the new square pull-tab and the old fashioned round two-part (tear-drop) ring pulls.

Coins flat on to the coil and rings should produce one tone with a one number ID. During testing it was found that modern square tabs and ring pulls produced 2 to 3 tones and also produced two or more ID numbers. This effect is even more enhanced with a HF coil but does also work (but not as effectively) with all coil types.

The High Frequency coil is especially good at this task because it sees the small differences between trash targets with a greater degree of accuracy. This extra information is relayed to the detector (V Flex) and in turn displayed as multiple IDs. This is because the coil "sees" the tabs or ring pulls varying shapes as either curves or holes, and correctly deduces that there are a few different eddy-current flow patterns occurring in the target. There is a mild side effect in that coins at an angle, especially shallow ones, could generate two tones; but you will quickly learn to dig those signals because their IDs should be higher and not those associated with trash, which are usually lower.

The trick described above is a technique that takes a lot of experience to use willingly, and may not be for the "faint hearted".

6. Patterns

A good technique that I use personally is to work in Pattern 1 with just block minus 8 rejected (X-Terra 70). Manually ground balance to a slightly "positive" effect; adjust sensitivity until it begins to chirp or chatter and then back off by two numbers. So, if 26 was just beginning to get a bit noisy, reduce down to 24 where the chatter should stop.

Another method I use is to "scrub" the ground surface (coil covers are easily replaced). It is actually very easy (and quiet - no ground noise) to work in this manner. It is also highly effective as you are literally on the ground and any depth loss by reducing sensitivity is compensated for by the fact that you are now closer to the targets in the ground.

It can be slightly noisy (junk noises) as more iron will tend to break through, but so will the low conductive marginal targets. You could then store into Pattern 2 rejected blocks minus 8, and minus 6, and into Pattern 3 store all the ferrous blocks rejected: -8, -6, -4 and -2. After this, check any doubtful signal while scrolling through all three patterns. A signal might not reject if it is ferrous in Pattern 1, but might in Pattern 2.

Again, it is all down to speed and how quickly you can correctly analyse target signals. The more junk you can ID in the fastest possible manner, the more you will make productive use of your time looking for the good targets. Take another look at Point 4 above and use that to analyse your targets.

Advantages of Concentric & Double-D Coils

With a choice of coil frequency and configuration, it is important to understand the differences between a concentric compared to a DD coil. A concentric coil has a tight field of detection that is great for isolating good targets in high trash areas; it also allows for excellent pinpointing abilities. A concentric coil can be a lot thinner physically as the internal windings don't overlap; hence the reduced weight.

A concentric coil puts out a conical search pattern, which tapers down at depth. For accurate ground coverage, you therefore have to overlap your sweeps by a third of the diameter of the coil in order to avoid missing any targets.

The advantages of DD coils are that they send out a blade like signal almost from tip to toe even at full depth. You therefore only have to overlap your sweeps by about an inch, enabling you to cover the ground a lot quicker.

DD coils also have better rejection of ground noise, and are less sensitive to ground changes, so the need to use tracking ground balance is reduced. So, for open areas with higher mineralization and generally less targets (like large beaches and pasture), a DD coil may be preferred. For smaller areas that are full of junk like parks and old gardens, stick to a concentric coil.
**X-Terra Tips & Tricks**

**Coil Type & Sweep Speed**

To take things to an extreme, you could crawl along on your hands and knees, push the coil in front of you and still make good finds. Similarly, you could charge along swinging the coil as if cutting grass and make more finds. As you know there are many detector models available, mostly using different coil sizes, various coil shapes, different operating frequencies etc.

Each may have to be used differently to work to best effect (learning curve) but, of course, will still make decent finds if no real thought or effort is put into using them.

With the X-Terra some of those coil choices now come in the form of the coils described in this article and - for the first time from one detector manufacturer - the opportunity to change the detector’s detecting parameters by using a different coil with changeable frequencies is on offer - V Flex.

So, while you could detect merrily all day long and not do anything different, you would still make finds. But, if you are “really dedicated” and/or perhaps a “purist”, you might then deliberately match the detector and search coil to your appropriate site. Using the circular Med-Freq, Hi-Freq, DD Med-Freq, and Low-Freq coils (or elliptical Hi-Freq coils), each may have to be employed at different speeds/lengths of sweep to generate good signal return from targets. For example, the stock 9in circular 7.5kHz Medium Frequency coil seems to work best with a “moderate” sweep speed. It reacts across the range of highly conductive to low conductive targets without any “undue gaps or anomalies”.

The 9in circular Hi-Freq coil seems to prefer a faster sweep speed. The Hi-Freq elliptical appears to work equally as well with either a slow, medium, and/or fast sweep. The Low Freq coil, on the other hand, appears to prefer a slow sweep for low conductive targets and a fast sweep for high conductive targets.

Depending on which coil is being used at any given time, some care and consideration should be put into the way that a site is searched. For example, if you were using the Med-Freq coil in a chosen area, you could sweep north to south at a moderate sweep and extract any good responses. You could then work east to west at a quicker sweep with a High-Freq coil to determine if anything had been missed.

Many searchers “crisscross” patches in this fashion to ensure that everything possible can be found during an initial search; after all, it could be many months before a return visit is possible.

Wet salt water sand searching (single frequency units) usually dictates a slow sweep speed with reduced sensitivity to minimise false signals. A good plan is take a notepad and pencil and write down your findings as they occur. Learn as you go and try to remember as much about a particular search and/or coil as you progress through the day. You may notice “trends” developing and you will learn from that. For example, the high frequency is reported as being “too sensitive” to tiny aluminium shards in modern city park settings that use grass mowers etc. But a dedicated searcher would definitely use a coil/detector of that type to search a Roman site for low conductive bronze coins. The Hi-Freq coil works very well in a salt water environment and it has been reported that its use there has resulted in the finding of many gold chains which are “difficult targets” for some set ups.

The following is a brief description about the various new X-Terra coil types.

**10.5in DD 7.5kHz Med-Freq X-Terra Accessory Coil**

The new 10.5in DD medium frequency accessory coil for the X-Terra series, although a tad heavier than the 9in coils, has a more professional feel to it and also provides increased depth and performance in the field and wet salt sand areas on the beach. The extra width provides a sure-footed even sweep, essential for exact and accurate ground coverage. It also provides a marked increase on “in-ground” depths on targets - especially deep targets that could be missed with a smaller coil.

Over salt wet sand the coil is smooth and it is perfect for beach work as it glides like a hovercraft across the wet surface thanks to its rounded edges. Above all else, it provides 100% stability in this difficult environment. Increased depths are achieved while sensitivity is retained, even to the smaller difficult
targets typically reserved for a multi-frequency machine.

Discrimination and pinpointing are as accurate as with the standard coil. To fully utilise X-Terra’s V Flex asset, this larger coil turns all the X-Terra models, including X-Terra 30, into a more accurate, sensitive and truly deep-seeking detector.

10in x 5in DD 18.75kHz Hi-Freq Elliptical X-Terra Accessory Coil

The performance on the beach with the HF coil was very surprising, as a frequency of 18.75kHz is actually quieter and punches deeper than those of around 5kHz, in certain types of mineralised soil. I was lucky enough to find a few new storm cuts and dug out a few “keepers”. Admittedly, they were not much, mostly old coins from the pre-decimal era and modern copper coins, which were bursting out with iron corrosion.

On stubble this coil is very confident and the masking of smaller targets from nearby iron is minimal. A much rusted plough share gave a reject sound but an accept signal was heard and 2in away was a small copper coin. Sensitivity to small low-conductive hammered - not necessarily deep but at awkward angles - and on-edge coins is just as good as flat on and during testing some coins were found either completely on-edge or at difficult angles; but they gave unmistakable sharp, dig me type signals.

Listen out for Low Tones and Low ID numbers (eg 8, 10, 12, 14, and 16).

9in 3kHz Low-Freq X-Terra Accessory Coil

The 9in concentric 3kHz coil for the X-Terra 70 is a coil designed specifically for those who would like to increase overall depth and target responses on high conductive targets. The 3kHz frequency will give you a depth advantage on certain specific targets such as copper and silver items of any size, large gold items including gold coins, and certain high conductive relics such as old weaponry; it could be an ideal hoard finder if evidence of a scattered hoard was present. In addition, the 9in concentric design gives you exceptional target separation, and excellent pinpointing abilities. As with all the other X-Terra accessory coils, it is waterproof and comes with a free coil cover.

Coil Identification

The Medium frequency coils are identified by an “M” before the serial number, the letter “H” denotes the High frequency, and an “L” identifies the Low frequency coils. On the off chance that “the dog eats your homework” and the serial numbers from your coils, there is a very clever way the Minelab boffins devised in X-Terra’s software to allow you to visually see on the screen the particular frequency of a possibly unknown coil.

With the detector turned on, press Menu/Select once and then press and hold the Patterns button for about 5 seconds - the frequency of that coil should be visible and this enables you to know exactly which type of coil you have.

Note: some information contained here might not be applicable to the X-Terra 30 model as it operates on just one frequency (7.5kHz Medium Frequency). As stated, this information is derived from thousands of hours of X-Terra tests. It may or may not apply to your particular location.

If you would like to share some thoughts or would like to see more information on X-Terra, I may be contacted at: minelab@minelab.ie

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