Field Test
Minelab Equinox 800

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For many months, the detecting scene has been buzzing about the arrival of an innovative new machine that promised to challenge most of the high-end detectors that currently dominate the scene. It seemed everyone was eager to hear more about the Minelab Equinox detectors, including myself.

My colleague, Julian Evan-Hart, suggested some time ago that one of these machines might become available for me to field test for *Treasure Hunting* magazine – I was filled with trepidation. As I'm getting on in age, I often wonder if I can embrace such rapidly evolving technology. After all, I still use a tiny pay-as-you-go flip-phone!

Fig.1. The Equinox 800 boxed.

Then suddenly, a couple of weeks ago, Julian informed me that an Equinox 800 was coming my way for a field test – and that it was due to arrive the following day! It came as no surprise to me that I should get a text from my wife, whilst I was at work, informing me that a 'massive' package had arrived in the post. When I got home, I eagerly unpacked the machine to see what the new Equinox looked like. Looking at it in its box I was suitably impressed by the compactness of it all (Fig.1). In no time I had it unpacked and had managed to put it together, without even having to consult the manual – it was that straightforward.

The first thing I noticed was the incredible lightness of the machine compared to my own one. The Equinox weighs in at just 1.34kgs (2.96lbs). As I unpacked the rest of the box, I looked for the instruction manual. There wasn't one. Instead there was an A4 folded sheet which gave basic instructions on what-was-what on the control panel. Instructions, it turned out, have to be downloaded from the Minelab website. This was perhaps my first frustration; it's a necessity to have an instruction manual with you when you take a machine out for testing for the first few times, and I was due to take it out the following day! It wasn't practical for me to download the instructions and print off reams of pages to take with me. I had little option but to take the folded sheet and try to work out the basics for myself.

What is included with the Equinox 800, however, are the ML80 Bluetooth/wireless headphones, which come in a hard shell case along with the appropriate charging/connecting cables and instructions (Fig.2). These are also accompanied by the WM08 Wireless Module, which you can clip onto your belt (Fig.3).

The Equinox takes a 3.5mm jack-plug (as opposed to some machines which take the ¼ inch plugs), and accepts many suitable headphones. Bluetooth earphones, or ear-buds, can be used with the Equinox, however, it's worth noting that due to the high latency (the time it takes to transmit sound via a wireless signal) of these devices it can make it problematic pinpointing finds if you use a fast swing rate. Minelab's headphones are low-latency and therefore more suitable.

Fig.2. ML80 Bluetooth wireless headphones in hard case.

Fig.3. WM08 wireless module, which clips onto a belt.

Fig.4. The back of the console showing headphone socket and charging socket.

Fig.5. Front of the Equinox console.

You also get two charging leads for both the detector and the WM08 module. The USB lead connects magnetically to the charging point on the back of the detector module, adjacent to the headphone socket (Fig.4). An uncharged unit takes about four hours to charge fully and charging is indicated by a flashing green LED on the top left hand corner of the module's interface. This stops flashing when charging is complete. Also included in the package is a packet of spare transparent screen protectors, to prevent the screen from getting dirty or scuffed.

That's the basics, now down to the machine itself. It's impossible to go into every detail about the Equinox 800 in this field test but I'll go as far as I can.

The Minelab Equinox 800

There are two Equinox models, the 800 and the 600, and both models incorporate Minelab's new Multi IQ technology. Large, deep targets are found more effectively using low frequencies, whilst smaller targets are located more easily with higher frequencies. The Equinox series uniquely allow the user to operate using a whole range of frequencies simultaneously for greater effect.

That's not to say they operate constantly using multi-frequencies. You have the option to switch the machine into single-frequency mode, perhaps to suit the location, or if you're are searching for something specific.

The Equinox 800 has five single frequencies to choose from: 5, 10, 15, 20 and 40 kHz. The Equinox 600, however, only has the first three single frequencies and not the 20 or 40 kHz. But more about these later.

The Control Panel

The Equinox has four buttons – two on each side of the control panel (Fig.5). The On/Off button is situated on the top left hand side of the control panel. This button can also be used to reset the machine to its Factory Presets by switching the machine off and then pressing it for approximately 8 seconds. The machine will reactivate and the letters 'FP' will appear in the Target ID display to denote that the machine has been restored to Factory Presets.

Below the On/Off button is the Backlight Button. This control operates the screen backlight and also adjusts the backlight brightness.

On the opposite side of the Control Panel you have the Wireless Audio Button (top right), which allows you to activate the Bluetooth, or Wi-Stream, to connect to the wireless headphones or the WM08 module.

Below the Wireless Audio Button is the User Profile Button, which allows you to save the current detector settings for instant access.

On the face of the Control Panel there are 8 buttons below the screen. The top three are the Settings button (centre) and Plus and Minus buttons. A short press of the Settings button gives access to the Settings Menu. A long press of this button when in Settings Menu allows access to the Advance Settings, where available.

Below these buttons are the All Metal select button (left), Pinpoint/Detect button (centre), which allows the user to pinpoint the target or return to detect screen whilst in Settings Menu. On the right hand side is the Frequency Button, which allows the user to select any of the single frequencies or Multi-Frequency operations.

To the left of these buttons is the Detect Mode Button, which allows the user to select any of the various search modes available. To the right hand side is the Accept/Reject Button. This can be pressed to reject any detected target ID. It is also used to create discrimination patterns and adjust tone regions via the Settings Menu.

Detecting Modes

The Equinox offers four different search modes: Park, Field, Beach and Gold. Each of these modes offers two different search profiles, for example: Park 1 and Park 2. For the sake of brevity I won't go into too much detail about each mode as this is covered in the instructions anyway, and can be viewed online.

Park Mode

Park Mode is best used for recreational areas and sites of previous occupation where you are likely to find coins and jewellery alongside higher levels of trash. This mode also has a default discrimination setting to counter aluminium foil and similar types of contamination usually encountered in these types of areas. It is also the best mode to begin using in most areas.

Field Mode

Field Mode is the best mode to use when searching for coins and artefacts on pasture and arable fields where previous historical occupation has left elements of ferrous trash and coke/charcoal contamination. This mode is well suited for locating hammered silver coins amongst iron trash.

Beach Mode

Beach Mode is suitable for most types of wet/dry sand, surf and underwater searches. Conductivity levels caused by salt can affect searching if used in any of

Fig.6. Using the Equinox in a wooded area.

Fig.7. Brass shotgun cap and typical signal on the screen.

the single frequency modes. It is therefore essential to use the Equinox in the Multi-Frequency setting in Beach Mode.

Gold Mode

Gold Mode is suitable for gold nugget prospecting in highly mineralized ground. It also uses a different audio sound to the other modes, using a continuous sound with subtle variations, intensifying as you approach the target and fading as you pass away from it.

Ground Balance

Ground Balance can be adjusted either manually or automatically. By pressing the Settings button you navigate to Ground Balance in the menu. The coil is then raised up and down continuously over a patch of ground where there are no signals. By listening to the tone you press either the Plus or Minus button to alter the Ground Balance. A low tone means you need to increase the value and a high tone means you need to decrease it. This is done until the minimum amount of ground signal can be heard.

Auto Ground Balance

Auto Ground Balance is achieved by going into the Settings menu and selecting Ground Balance. You then press and hold the Accept/Reject button whilst you raise and lower the coil over a piece of ground with no signals. During this process the Tracking Ground Balance icon flashes continuously on the LCD display. You can also observe the Ground Balance value updating on the Target ID display as the audio reduces in response.

Iron Bias

The Equinox has an Iron Bias setting which adjusts the likelihood of the detector to identify a target as iron if it presents both ferrous and non-ferrous signals.

This function can be accessed through the Advanced Settings and a lower setting will most likely allow the machine to identify the signal as non-ferrous, whilst a higher setting will likely allow it to identify it as iron.

The Iron Bias facility is only available whilst the detector is in Multi-Frequency mode.

In the Field

After assembling the machine I walked around with it to 'get the feel of it'. I was greatly impressed by the machine's lightness, compared to my own machine, which is probably more than twice the weight.

I plugged in the charging cable and left the machine to charge up for a few hours. At the same time I also placed the WM08 wireless headphone unit on charge on my kitchen worktop.

After lunch I packed the machine into my bag and set off to the designated test site, which was some pasture fields surrounding a large Georgian manor house.

It was unfortunate that the timing of this field test meant that I was restricted on where I could take it for testing. Most of the arable fields we detect on had, by now, been seeded and were therefore off-limits.

When we arrived at the site I began unpacking the machine in preparation. It came as a huge frustration to learn that I'd left the WM08 unit at home, still charging, on the kitchen worktop!

This wasn't a major set-back, as I could still use the machine with the corded headphones. The test site consists of several pasture fields where we have been detecting for the past few months. One particular area has been consistent in coin and artefact finds from the medieval period onwards. Having been heavily detected with the find rate gradually diminishing I was keen to test the Equinox's reputation for finding deep targets with its multi-frequency technology.

I started detecting in the most basic mode (Park Mode 1) in All-Metal mode. Working from the edge of the field, in a wooded area (Fig.6), the number of audio signals I was getting was very interesting. Most of these were indicated as Non-Ferrous by the Equinox, and after digging some of them it became apparent that I was finding very old shotgun caps, which were made of brass. I was also taking note of what the screen was saying each time I found one, with the target ID somewhere in the 'teens (Fig.7).

Fig.8. Chrome plated dog whistle.

Fig.9. Roman buckle plate in the spoil.

Fig.10. Roman buckle plate after cleaning.

As I walked along the wooded area I decided to ignore similar signals and concentrate on signals with a different tone or Target ID.

Eventually I had a strong signal with a much higher number on the screen. The Depth Indicator suggested it was only a couple of inches below the surface, which made me think it could be a modern coin loss. I was puzzled when a small silver-coloured tube emerged from the ground. After a brief clean I noticed a notch in the edge which told me that it was a dog whistle (Fig.8). It was obviously made of base metal (steel) which made me wonder how it gave such a high reading. But I soon realised that it was plated with chrome, which explained it.

Not being open to the public, the site was relatively clear of the types of trash one would normally encounter in a public space. It seemed the majority of the finds I was making in this area were the result of field sports going back many decades. I moved away from the wooded area and out into the centre of the pasture. Here I encountered different types of signals. On some occasions I switched through the various modes to see how the Equinox reacted to some of these signals. Some of them indicated high value targets but turned out to be large pieces of iron, which always give very good signals. Not having a manual to hand was frustrating, as I would have liked to have been able to work out altering the settings to try and cancel-out some of these targets. Trying to memorize it was too difficult. Some of the iron targets were 'hoop-shaped', such as old shoe pattens and these often confuse any detector by giving very positive signals – there are many of them on this site.

Working close to an old oak tree, where we had previously found many old coins, I got a peculiar 'pipping' noise in the headphones. It seemed consistent whichever direction I swept the coil. I remembered watching a video online where someone suggested these may be targets that are so deep that they are just on the cusp of the detector's range, so I dug out a large plug of soil about 6 inches deep and tried again. This time there was a definite signal, and it was quite a positive one.

I had to get on my knees and dig out much more soil before my pinpointer told me that I was very close to the target. Eventually the target came out, after I'd dug down just over a foot! What looked like an old brass hinge lay in the spoil (Fig.9). After cleaning off some of the dirt I eventually realised that it was actually part of a Roman buckle plate (Fig.10). It was worth noting that I was less than fifty yards from a major Roman road, which runs past the estate. As I backfilled the hole I wondered whether my own machine could have picked up this signal.

As I worked my way down the field towards the house I continued picking up targets that I had to dig very deep for. Most of these were pieces of lead, which was also abundant on these fields. Some areas were also contaminated with charcoal and coke, probably from very old campfires. I did pick these up with the Equinox and so switched up to Field Mode 2, which is supposed to help eliminate these types of signals.

I was actually detecting close to one the estate's Lodge Houses at this time, in an area that contained more in the way of soil contamination. The Equinox handled these signals quite

Fig.11. Two signals down below the tree roots.

Fig.12. Small silver hammered coin in the spoil.

Fig.13. Hammered silver coin of Elizabeth I.

Fig.14. Large lead 'bowl' found below the coin.

well and I was confident that many of the 'dodgy' signals I was getting were just trash. However I soon got a very confusing signal. One second the Equinox indicated a very high value target but when sweeping from another angle gave a different signal altogether, with a slightly lower Target ID. Out of interest I switched to Gold Mode and tried again. The Equinox almost sounded like a Pulse Induction unit as it gave a continuous squeal which got louder as I swept the coil near the target area. As I passed over the target it became extremely loud. I began digging.

Just a few inches down, I encountered tree roots, which had to be circumvented in order to reach the target. (Fig.11). Some 8 or 9 inches down I resorted to scooping out the dirt by hand, as my trowel couldn't get past the roots. At this point I swept the coil over the spoil to find that a high value signal was in there. Using the probe I eventually spotted a small grey disc (Fig.12). I was surprised to find that it was an old silver hammered coin, possibly of Elizabeth I (Fig.13). I didn't believe that this was the cause of such a strong signal and so swept the coil over the hole once more. The strong signal was still there, but beneath a deeper tree root. Julian assisted me by levering the root to one side with his long-handled spade and eventually I managed to prise out the object. It was a massive bowl-shaped piece of lead about 4 inches across (Fig.14). I was astonished at the Equinox's ability to distinguish both targets separately in the same hole.

Working close to the gravel driveway, which led to the main house, I was in an area where we had made numerous coin finds from the Georgian period on previous occasions. With a slightly higher level of contamination, due to landscaping in the past, I switched to Field Mode 1. In no time at all I was picking up some very deep targets (Fig.15).

Digging holes much deeper than I've needed to on previous occasions, I began finding numerous old Georgian copper pennies and half-pennies, some of them in lovely condition (Figs.16-17).

Eventually I picked up another 'pipping' signal. Eager to see what the Equinox had detected I cut out a large

Fig.15. Digging a deep target near the driveway.

Fig.16. A large George III penny emerges from over a foot down.

Fig.17. George III penny cleaned up.

Fig.18. A large green disc in the spoil.

Fig.19. Obverse of 18th century token.

Fig.20. Reverse of 18th century token.

circular plug of soil. Again I had to dig out at least another 6 inches of soil before I spotted a green penny-sized disc in the spoil (Fig.18). After a quick clean I was delighted to find that it was an 18th century trader's token of John Fincham, of Haverhill, Suffolk (Figs.19-20).

I couldn't believe that I was making such amazing finds in an area that we had searched several times in the past. It seemed that the Equinox had brought the site back to life. I was rapidly becoming addicted to using this machine and didn't want to pack up when Julian suggested we ought to quit and go home.

We returned the following day and searched another area behind the house. Signals here were much thinner on the ground but I had every confidence in the Equinox's ability to come up with something interesting. One signal I got seemed to be non-ferrous and quite strong. Digging down about seven inches, I found a curiously shaped nail bent over at a right angle. Not happy that this was the cause of the signal (as the Equinox seemed very good at picking out non-ferrous targets amongst ferrous ones), I scooped out more soil. Amazingly, out popped another bent nail, identical to the first one (Fig.21). Neither nail appeared to have any corrosion so I couldn't be sure they were made of iron. But there wasn't anything else in the hole, so I concluded that they must have been the cause of the strong signal. I made numerous other coin finds, as well as artefact finds, including the remains of a massive Georgian brass coat hook over a foot down (Fig.22).

Over the course of these two days I found it necessary to adjust the armrest on the Equinox, which is a simple operation and a plus for the Equinox. I also had some occasions when the Equinox suffered slight interference from high tension cables. This can be remedied by reducing the sensitivity or switching to a single frequency.

Summary

I was greatly impressed by the Equinox 800 and saddened by *Treasure Hunting* magazine's request for me to hand it back. The machine's reputation for finding deep targets certainly held up and left me wondering how many wonderful finds I was missing with my own machine. My only criticism of the Equinox is the stem, which I would have preferred to be a square section tube, similar to other Minelab models, rather than the round section one it has. This leaves me wondering about its long-term durability. I also find it easier to handle a machine with a square sectioned stem. This is of course a personal preference – other users may find it perfectly satisfactory.

Will the Equinox dominate the market? Well, I'm pretty sure we are going to be hearing a great deal about these machines in the coming months and years. I'm also confident it will succeed in both performance and reputation. I had other ideas about which machine I would choose as a future update and had been in a quandary. However the Equinox has totally won me over and I can't wait to get back out in the fields with one very shortly. TH

Fig.21. Two curiously shaped nails, which may be non-ferrous.

Fig.22. Remains of a massive Georgian coat hook.