

# The Minelab E Trac's Language

If you typed the word "language" into a search engine on the internet it might return an explanation along the following lines: "Language is a systematic means of communicating by the use of sounds or conventional symbols".

We are born to a "native language" and grow up to become well versed in the tongue in which we utter our first words. However, when holidaying in a foreign country the chances are that upon arrival we might not understand the language spoken.

There are several ways around this dilemma: primarily dictionaries, but also by taking classes before departure to learn the language, or by listening to instructional tapes to become familiar with the "sounds". We might then enjoy the holiday that bit more, because we now have a better understanding of what's being communicated.

It's the same with metal detectors – they communicate with us by sounds and/or symbols (numbers). It can take time to "learn the language" of just what it is they are programmed to show and are trying to say.

The Minelab E Trac is just one example of how it can be a worthwhile exercise to understand just what the detector is telling and showing you. Once you take the time to learn its language it can become a very enjoyable and trusting experience.

Essentially you are dealing with four parts of an equation: (a) sounds (b) a cursor (c) pre-programmed number co-ordinates made up of ferrous and conductive components, and finally (d) tones. The latter are derived from those said same ferrous and conductive components due to the E Trac's FBS operating system, which has the ability to match certain tones (musical notes) to certain cross referenced ferrous and conductive measurements.

Targets will produce "different sounds"; similarly those sounds will equate to Ferrous and Conductive co-ordinates (FE and CO values or IDs), which will place the Cursor in a "pre-programmed" location on a mapped



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Fig.1. Three hammered coins found during research.

Fig.2. The author – Des Dunne.



scale which, is actually the entire pixelated area of E Trac's meter display.

## Sounds, Tones & Music

The E Trac has the capacity, based on how one programs the device to produce a certain amount of sounds. In turn these sounds can be broken down into tones and, strangely enough, the tones can almost be regarded as musical elements.

Beginning with Sounds, E Trac is programmed to produce a response from a target which makes a sound that has a volume level. It also has a tone to it with a certain amount of variability and limits to the sound all pre-programmed in Factory Settings or personally selected by the E Trac owner.

Just how you choose to make the E Trac sound for your own personal hunting pleasure is achievable by adjusting the following settings in the AUDIO MENU:-

- Select a RESPONSE (Normal, Long, Smooth or Pitch Hold)

- Select the number of Tones (1, 2, 4 or Multi-Tones)
- Adjust the Threshold Pitch
- Select the Sounds from either Conductive or Ferrous
- Adjust the Variability
- Adjust the Limits of the tone if the "pitch" is too high

## E Trac's "Musical" Advantage

One of the most appealing and advanced aspects of E Trac is its clear ability to produce numerous tone sounds.

This equates to a sliding scale of as many as 28 different tones (musical notes) produced from the multitude of all very differently shaped and sized buried metallic artefacts recovered during the normal detecting exercise. However, there may be times that Sounds combined with the Tones Options can better identify certain targets: typically it can benefit "better audio identification" of targets.



Fig.3. Typical stubble field.



Fig.4. Some pre-decimal coinage.

For example, a silver coin and a rusty nail will sound the same when using Conductive Sounds with Multi Tone. But select Ferrous Sounds and the pitch on the nail will drop to a low “growl” sound while the pitch on the silver coin will remain high. So, how does one decide on which sounds to use where? This is not an easy matter, but let’s see if we can throw some light on the subject.

## Different Sites

For the purpose of this article I am chiefly concerned with:-

1. Stubble fields
2. Pasture land
3. Beach – both wet and dry areas

## Stubble

One of the most important aspects to remember about stubble is that it is a left over product from a previously new growing season meaning in most instances the seed would have been planted in newly ploughed soil. This is a very important point to remember

because it means that the field would have been ploughed. If searching a site that has a continuous same-crop rotation, it indicates that previously deeply buried items should now be within easy reach as the ploughing action would bring them closer to the surface, or even be on top if you’re lucky!

Where I’m going with this is to help explain that certain audio settings can be better at surface to semi-deep target identification. So why use settings more suitable for deep searching when what you’re after might after all be mostly shallow finds? All the items illustrated in the photos were found using the settings which I will describe in detail as we go. I will also hopefully explain why I selected those settings in the first instance.

If you are an owner of such a detector grab your E Trac and program in the settings so you can hear for yourself just how effective they can be.

First, can I show you how I set up my E Trac which might help justify my chosen sounds and settings? Take a look at

my screen shot of E Trac with my chosen search screen: it also displays a typical hammered coin cursor placement and FE and CO numbers FE 12 CO 16 (actual coins found during research shown in photo of three hammered coins – coin referred to is at the bottom).

## Set-up for Stubble

### Audio & Other Settings

The way I work is: I get into the Quickmask screen and dial in a certain amount of Ferrous rejection. I’ve found a setting of 31 is just about as near “perfect” as I can get and this eliminates most “general” pieces of ferrous trash. Here’s how to do that.

1. Turn on to Smartfind screen
2. Press Quickmask button
3. Use the up arrow ^ to dial in 31
4. Press the Detect button
5. Use the Up arrow to select Yes
6. Select Yes
7. Press Quickmask button and use the Down arrow v to revert to a clear screen
8. Press Quickmask button again to return to the Smartfind screen

There are other ways of doing this but this is the quickest way! You can see your saved Quickmask setting by going into the Discrimination Menu (from your Smartfind screen) and scrolling down to Quickmask.

This easy adjustment then allows you to work in your Smartfind screen with minimal iron rejection with no other actual discrimination active, see your Sensitivity settings at a glance, and also observe the FE and CO numbers. However, the best aspect of this set-up is you have an instant all-metal facility at your fingertips by simply checking any dubious signals in your secondary all-metal screen.

The Quickmask screen by simply pressing the same one button will take you into and out of both screens – and both screens provide all the functions you would ever need (fast access to all-metal is an invaluable tool).

Now I’ll go on to dial in my preferred settings.

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## Stubble – From Audio Menu

- Threshold level – 14 (with headphones)
- Volume Limit – 30
- Volume Gain – 24
- Response – Pitch Hold (or Normal – your preference)
- Tone ID – 2
- Sounds – Conduct
- Variability – 26
- Limits – 22

## From Expert Menu

- Recovery – Deep Off
- Recovery – Fast On
- Trash Density – Low
- Ground – Neutral (if A sensitivity is low then select Difficult)

## From Preferences Menu

- Pinpoint Mode – Normal
- Show Sensitivity – On
- Show Mode Info – Off
- Display Timeout – On (allows normal refresh of FE CO on new targets)

Providing your found targets are from surface finds to around the 8 inch depth, you should find that small non-ferrous targets will “shout at you” with a nice crisp and even audio sound. The use of Pitch Hold will make the signals sharper, crisper and, will be easier to hear. Give this option a chance and you will be pleasantly surprised to see how this choice works on “quiet” or sites considered “worked-out”.

If it's not for you then use Normal Sounds. But, Pitch Hold is inclined “to grab onto” targets and doesn't appear to let go as the threshold now mimics the actual conductivity of the target. You will hear two tones, a mid and high tone: low to medium conductive targets should respond with the lower of the two tones. Ferrous items will respond with the higher tone of the two.

However, here is the clever part: you should be able to recognise scrappy ferrous signals because of a choppy audio and a clipped or one-way audio response and if you check those “choppy” signals in the Quickmask screen the cursor should always be close to the bottom and position itself for the most part in the bottom right hand side. The FE and CO co-ordinates should display high FE values (eg FE 33 / 35 CO 42 / 47 etc.)

On soils with a low mineral content the cursor should travel in a linear fash-



Fig.5. Artefacts.

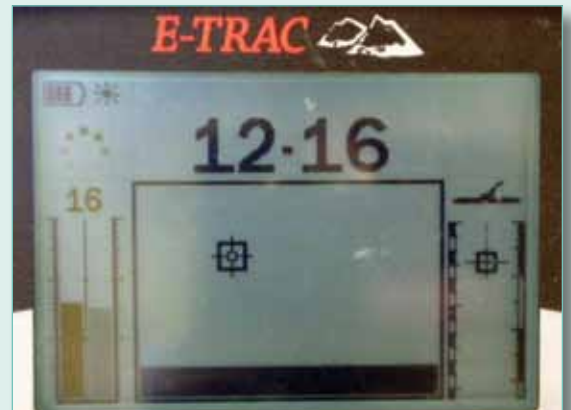


Fig.6. Screen shot of E Trac displaying my chosen program.

ion (east to west) across the screen and display for each target a fairly consistent FE and CO readout. The FE readout might change by one or two number IDs (eg 11, 12 or 13) but for the most part the CO value should remain very consistent with an error rate of just one.

So, the 1935 halfpenny of George V (illustrated) displayed: FE 12 CO 37 readout and cursor placement three quarters to the right hand side of the display screen with a high tone. The buttons illustrated gave both mid and high tone sounds and numeric readouts as follows: FE values of 11 and 12 and values of CO 05 to 15 etc. The 1862 farthing of Victoria (Young Head illustrated) displayed FE 12 CO 15 with a left hand side cursor placement with mid tone.

The reasoning and logic behind the use of Fast Recovery is after an annual plough and crop rotation the soil will have settled but to a less firm degree than the soil in a pasture field which will have had perhaps years to firm up to become solid. Recovery Fast setting works best

in soft, loose, freshly ploughed and non-compacted soils.

Iron will also be less of a problem to identify because of a certain time detachment from the surrounding soil thereby creating less of a halo effect.

## Set-Up for Pasture Audio & Other Settings

For pasture fields targets can be and are inclined to be deeper and so is the dreaded iron! I therefore prefer to have a “longer listen” to the signals to try to identify what I am hearing so therefore select the following audio and other settings. By “a longer listen” I mean that E Trac can *stretch* the signals to produce a longer decay rate of sound and having a long listen on each sweep while observing other features (ie depth gauge) can give you very valuable information. Decay means the duration of actual sound and any harmonics associated with that sound as the coil passes over and clears the target.

In E Trac one can lengthen the “sound

Fig.6.  
Numerous  
small  
buttons.



Fig.8. Pasture.



of signals" by a few methods: primarily in the Audio Menu scroll to Response and you have two settings options:-

1. Long
2. Smooth

Both of these settings prolong the duration of target sound as the entire diameter of the coil passes across the target making it appear like a large long target. This is especially effective for beach use but more on this later.

#### Pasture – From Audio Menu

- Threshold level – 14 (with headphones)
- Volume Limit – 30
- Volume Gain – 26
- Response – Long
- Tone ID – Multi
- Sounds – Ferrous
- Variability – 28
- Limits – 30

#### From Expert Menu

- Recovery – Deep On
- Recovery – Fast Off
- Trash Density – Low

- Ground – Difficult (if suggested sensitivity is low then select Difficult)

#### From Preferences Menu

- Pinpoint Mode – Sizing (easier to ID deep iron)
- Show Sensitivity – On
- Show Mode Info – Off
- Display Timeout – On (allows normal refresh of FE CO on new targets)

To justify the settings outlined above for pasture use it is imperative that the coil should penetrate deeply as many targets will be at the limits of detection. Pasture usually has a less dense target quantity so that's why I tend to use the Trash Density Low option: the chances of more than two targets being underneath the coil at the same time are in the minority. The use of Deep On will act as a signal booster especially with the Difficult setting turned on.

Remember also that you will be working between a combination of two screens and Quickmask (your second

search screen) will equate to an all-metal option and therefore make working in Ferrous Sounds a wiser choice. This is because if your search conditions are like mine, you will certainly be checking out a large proportion of your signals in the all-metal option: iron will give a low drone while non-ferrous will provide all the musicality discussed previously.

My choice in having Sizing Pinpoint on is a personal choice. It works for me in providing a better "audio snapshot" of what's in the ground...especially useful on exact pin pointing of deeper larger items. However, feel free to change this option if you want to or simply alternate between one and the other as you scan over a target. Don't forget to re-set it back to your preferred choice before setting off again.

## Set-Up for Beach

### Audio & Other Settings

Beaches are a whole other ball game and leave you with a large amount of different options that may not be replicated during land hunting. For starters, once you have your program set-up it is much less likely that you would have to make any adjustments at all due to the even and flat search conditions and the singular continuance of an entirely unbroken element comprising of conductive salt wet sand.

It is also hardly likely that on a beach that stretches as far as the eye can see that there would be differing elements to think about – in other words a flat expanse of wet salt sands remains constant no matter which part of the flat sand you happen to be on.

However, there may be regional differences: for example, some E Trac users in other countries tell me they occasionally come across areas both inland and coastal, that contain what they call "black sand". It literally means the sand has a black coarse appearance and is usually of a high mineral content. This might come about in areas of previous volcanic activity (eg the Canary Islands, California USA or even Iceland).

There can even be regional differences in the levels of salinity in the water. These users rely on the Auto Sensitivity function of E Trac to tackle difficult areas. Black sand can draw down most usable sensitivity and E Trac is set up in Auto to handle that scenario perfectly. However,

experiment with both Auto and Manual Sensitivity and use what works best for you in your own areas.

Here is my beach set-up.

### Beach – From Audio Menu

- Threshold level – depends on surf/ wave noise (louder than land)
- Volume Limit – 30
- Volume Gain – 26
- Response – Smooth
- Tone ID – Multi
- Sounds – Conduct
- Variability – 28
- Limits – 22

### From Expert Menu

- Recovery – Deep On
- Recovery – Fast Off
- Trash Density – Low
- Ground – Difficult

### From Preferences Menu

- Pinpoint Mode – Normal
- Show Sensitivity – On
- Show Mode Info – Off
- Display Timeout – On

These can be powerful beach settings and can help in the search for deeply buried targets especially over the wet sand. On dry it doesn't matter too much: in fact on dry sand one could almost adopt the Stubble Settings as outlined above and "tweak" for your own listening pleasure as it is surprising just how deep the E Trac can get to in the dry stuff...a foot or two on larger items isn't uncommon.

The use of Smooth from the Response Option is a great asset in searching



Fig.9. E Trac on the beach.

vast wet sand expanses because the coil can literally signal a target ever before the centre of the coil passes over it, thereby making the coil's sideways detection abilities much greater and can "artificially" give you greater distance coverage. I actually use this setting on the wet sand in January and February especially....after storms.

### Conclusion

The settings outlined here are my personal ones but are proven to work.

As always feel free to use them as

"start points" and make adjustments to suit your own ear and ground conditions found in the areas that you detect in.

Should you happen to find them suitable and you excel in a particular area please feel free to contact me to let me know. Similarly, should you not find them satisfactory contact me and we can discuss it.

My contact details are: Des Dunne, Field Application Specialist, Minelab International, Bandon, Co Cork, Ireland. Tel: 00+353+8852101

E-Mail [minelab@minelab.ie](mailto:minelab@minelab.ie)



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