

## Target Masking

I would like to start off with a couple of common target masking situations.

### *Ground Target Masking Condition:*

When there are numerous iron targets or a high concentration of metal trash targets in the ground, these targets will drive the detector threshold into its null operating zone. When the detector threshold is null-out meaning there is no audible background threshold. The detector does not detect or will suppress weaker non-ferrous signals received from deeper or smaller non-ferrous targets that are located near the iron / trash target.

### *Target Masking by using Metal Detector Discrimination:*

When a detector has a designed in iron discrimination feature it will null over iron and may mask any non-ferrous targets that are near the iron target. Or if the operator is using the detector's discrimination capability to discriminate out iron / trash targets the detector's discrimination may mask a good non-ferrous target.

Basically what this means is that in many cases iron or other trash can be masking a very good non-ferrous target such as a gold ring, old coin, old button or some other valuable target. Ignoring these nulls or setting one's detector discrimination too high could cause many valuable targets from being found and recovered. In the figure below there are three iron nails and one gold coin target under the coil in this situation the gold coin would be masked by the three iron nails. The detectorist would just continue on and not be aware of the gold coin target because of the three iron nail targets.



Target masking is not a new metal detecting phenomenon. Target masking has been around ever since detectors were designed with discrimination capabilities. Many detectorists only want to see "GOOD TARGETS" and therefore will ignore the detector's "NULLS" or will have their discrimination levels

set high to eliminate iron / trash. By ignoring nulls or using the detector discrimination they now will only recover good targets as indicated by the detector's target identification capability. This practice of ignoring nulls or setting discrimination high can leave a high percentage of good non-ferrous targets in the ground.

Coil selection and sweep speed are very critical in iron / trash infested detecting ground. A large coil can not

differentiate between targets as well as a small coil and therefore is very susceptible to target masking. When targets are close together the coil may only see the iron / trash target and therefore ignore a potential good non-ferrous target. In this situation because of masking the detector would only provide identification on the iron / trash target and will not be able to pickup the nearby good non-ferrous target.

There are some detectorist in the metal detecting hobby that feel detectors can overcome target masking by purchasing certain manufacturer detector models. Some detectors will handle target masking better than others but in most cases the detector will usually overcome only the simplest case of target masking.

Today, there are more people taking up the hobby of metal detecting and the ground that has never been detected is becoming very sparse. In the future this may lead to going back over grounds that have been heavily hunted. Therefore, following the six suggestions below may yield some very surprising results for the detectorist in what was considered to be hunted-out grounds.

### *So how does one overcome target masking?*

1<sup>st</sup>: One easy approach is to stop using discrimination. A positive target located behind, beneath or near junk may result in a mixed signal and these types of signals should always be recovered.

2<sup>nd</sup>: Slow down your detecting sweep speed so that the coil can differentiate between target types as they pass under the coil. The reduction in sweep speed will allow the detector to provide you with multiple different target IDs.

3<sup>rd</sup>: In high iron / trash grounds reduce your coil size to three to eight inches in diameter. The smaller coil will provide much enhanced target separation and overcome target masking. You may lose some depth but more non-ferrous targets can be discovered and recovered.

4<sup>th</sup>: This one takes work. Use a small coil and recover all iron / trash targets to clear the area and also recover all good non-ferrous targets found during this process. Once the area is clear install a larger coil for greater depth and go over the area again for the deeper targets also recovering all good and iron / trash targets during this process. Now the ground is hunted out.

5<sup>th</sup>: Some detectors have a recovery speed adjustment. In high iron / trash covered ground the recovery adjustment should always be set for FAST or a very high number if the detector uses a numeric recovery rating. You must also use a smaller size coil and a much slower sweep speed.

6<sup>th</sup>: Always recover the whisper target signals.