



Guide to metal detecting

Introduction

Like archaeology, metal detecting can be an interesting and exciting hobby. Thousands of people own metal detectors which are useful tools for locating both metals and minerals underground. Metal detectors are available in a number of models made by different manufacturers, with the general rule being, the more money you spend the better and more versatile detector you can buy. Detectors can be used to identify different types of metal and some designs allow you to discriminate so that you are only alerted when certain metal types are detected; this stops the inevitable bleep whenever a soft drinks can is found. The most expensive units also give an indication of how deep a find may be in the ground.

Apart from hobbyists and airport security, metal detectors are also used by archaeologists to highlight areas of interest before systematic excavation begins, and the responsible use of this versatile tool can be a real benefit during an investigation.

How it works

Most detectors follow a similar design. A search loop, or antenna, is held at the end of a handle and is connected to a control box, which contains all of the gadgetry. Most incorporate a counterbalance which cups the forearm to aid a smooth sweeping operation. Some detector control boxes have an in-built speaker to alert the user to a signal, but most operators prefer to use headphones.

Detectors can use three systems for targeting metals. Pulse Induction (PI), Very Low Frequency (VLF) and Beat Frequency Oscillation (BFO) to search up to 30cm (12 inches) below the ground.

PI detectors send pulses of electromagnetic field into the ground. If the field makes contact with a metal object the object produces its own field with its own frequency which upsets the expected pattern of pulses the machine is emitting. This change is detected and the machine alerts the user.

VLF detectors produce an electromagnetic field which is directed into the ground. Again, if the field makes contact with a metal object the object produces its own field with its own frequency. This new field is detected by a receiver which is incorporated into the equipment. By tuning out certain frequencies from the receiver, different metals can be discriminated against.

BFO detectors are the most basic and cheap designs which interpret their signals as radio waves. Once a metal object interferes with the detectors electromagnetic field the radio waves become agitated and emit a tone to alert the operator.



The detecting debate

There has been a long running debate between hobbyists and archaeologists about the use of metal detectors. The main concerns from archaeologists are about treasure hunting and the temptation to remove artefacts from their resting place, while not recording their provenance, combined with the loss of archaeological value in an artefact when it is taken out of context. The detectorist's view is one of equal access and ownership of our past and the right to freely detect given all the correct permissions. The bottom line for both sides is one of respect and responsibility; for the historical environment, the law, and the future of our archaeological resource.

Responsible detecting

The first step towards responsible detecting is to follow the law. You can't detect on any land that you don't own without the permission of the landowner. You also can't detect on any protected sites, such as Scheduled Ancient Monuments or local authority protected sites, without specialist permission. The best way to get started is to join a local club or society, which often issue a code of practice to their members and have lots of experience on hand for you to call on for advice and guidance on safe places to detect.

The next step is to work in a responsible manner. Think about the implications of your detecting. You should steer clear of protected sites and also be aware that sensitive undiscovered archaeology could be below the surface at any time. To be on the safe side you should aim to detect within topsoil, or plough soil, and no deeper. Work in a methodical way and always carry a note book and finds bags so that you can record where finds are discovered and package them properly. Ideally a hand held GPS system, or good old-fashioned, large-scale map and compass should be used, to record the grid references of find locations.

Finds should be treated carefully and with respect. Rubbing finds on your jeans in the field, or resorting to 'old wives tale' cleaning remedies back home can cause untold damage. The best way to conserve and protect your finds is to get yourself an education in conservation first. The most innocent attempt to polish a coin can ruin it, so make sure you know what you're doing first. Richard Hobbs has written a [Guide to Conservation for Metal Detectorists](#), which is both thorough and informative, published by Tempus Books. Your local museum curatorial officer, or a Portable Antiquities Scheme officer (see below), can also advise you about caring for finds.

Finally, you need to think about the cultural value of your discoveries. A Roman brooch may look nice on the mantelpiece, but the same arguments of access to our past which allow metal detecting as a legitimate hobby also apply to artefacts too. If an item is held in a private collection and unknown to the public a piece of cultural heritage is lost. Access to information is the key and letting your local museum see your finds allows them to be recorded for the archaeological record. Contrary to popular belief museums can't automatically take your finds away from you. They would just like to see them and they may be able to provide you with some useful information about what they are.





The portable antiquities scheme

The Portable Antiquities Scheme was established in 1997 to record finds held privately for the general archaeological record and to raise awareness of archaeology and the cultural value of artefacts. Well over 100,000 artefacts have been recorded by the scheme in the last seven years. Regional Finds Liaison Officers cover the whole of England and Wales offering advice on conservation, identification services and opportunities to record your artefacts.

The treasure act

The Treasure Act of 1996 replaced the common law of treasure trove in England, Wales and Northern Ireland (Scotland has different laws, see below). The Treasure Act removed the need to establish that objects were deliberately hidden with the intention of being recovered, which was one of the tests of the common law of treasure trove. The Treasure Act sets out the precious metal content required for a find to qualify as treasure; and it extends the definition of treasure to include other objects found in archaeological association with finds of treasure.

What is treasure?

Treasure, according to the Treasure Act, is any object at least 300 years old when found which:

- is not a coin but has metallic content of which 10 percent by weight is precious metal.
- is one of at least two coins in the same find area of which 10 percent by weight is precious metal.
- is one of at least ten coins in the same find area.

does not fall within the specific categories given above but would have qualified as treasure trove. This object has to be made substantially of gold or silver; has to have been buried with the intention of recovery and its owner or his/her heirs cannot be traced.

Scottish law

The law is different in Scotland. All archaeological finds in Scotland, whether of precious metal or not, automatically belong to the Crown and are effectively treasure trove until proven otherwise. The Archaeology Department of the National Museum of Scotland provides the Secretariat for the Treasure Trove Advisory Panel, which deals with individual cases and provides information and advice on the law as it relates to the discovery of artefacts. The Crown does not always exercise its claim, but **all objects** found should be reported to your local museum. After examination finds not required for the museum collections are returned to the finder.





Further information

For more information on treasure law please see the following websites:

England, Wales and Northern Ireland:

<http://www.culture.gov.uk> - search for treasure act and you will be able to download the full 160 page treasure act or a more simple treasure act leaflet.

Scotland:

<http://www.historic-scotland.gov.uk/archeology.pdf>

Contains archaeological information and advice relating to treasure in Scotland.

Other useful websites

National Council for Metal Detecting

<http://www.ncmd.co.uk/>

The online home of the National Council for Metal Detecting. This site lists events and details of national groups, plus guidelines on detecting and a code of practice.

Portable Antiquities Scheme

<http://www.finds.org.uk/>

The Portable Antiquities Scheme, a groundbreaking and positive scheme designed to enable people who find archaeological items to have them recorded and identified by specialists. The site lists contact details for all local Finds Liaison Officers and also has guidance for metal detector users. Clear advice about responsible detecting and the implications of the Treasure Act is also well covered on the site.

Council for British Archaeology

<http://www.britarch.ac.uk/detecting>

Council for British Archaeology website covering metal detecting issues and debate.

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