# Field Test

## Viking VK30 - Part 1

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Over the last decade or so we have seen many changes in metal detector technology and design. At one stage - and it seems to me as though it were just yesterday - there was a lot of talk of the great benefits of "motion" detectors. Now we have gone one step further still, and have entered the 21st century with the computerised microprocessor technology being used on metal detectors. This has allowed more powerful machines to be developed offering accurate target identification and discrimination by relaying all the information through to an LCD (Liquid Crystal Display) screen.

Some of these new generation detectors have been here right from the late 1980s with updated and modified versions constantly appearing. However, a lot of these detectors have been quite expensive to buy and perhaps a little too complicated for the average person to use. In fact, some of them came with instruction manuals almost resembling a Bible in size and word count. In some cases this sort of technical reading material may have put people off who just wanted a detector with which he or she could just "switch on and go".

Viking Detectors - who have a long established reputation for making excellent metal detectors at affordable prices - have recently started to incorporate microprocessor technology in their machines for the first time. They have introduced the LCD screen and microprocessors in two of their new models in the VK range, the VK20 and the VK30. There is also another model,

the VK10, that is microprocessor controlled but works without an LCD screen. The display screens on the VK20 and VK30 relay target identification information, as well as other useful details about sensitivity and discrimination.

Viking Detectors have been producing metal detectors from the early 1970s, and still make a number of firm models that have changed very little since that time. These machines are well known among the detecting fraternity, and include the Viking 1, Viking 5, and Viking 6. What is unique about the Viking models - for me at any rate - is the fact they operate from one PP3 battery but still give superb performance.

The VK10, VK20 and the VK30 now replace the Viking 7 and Viking 8MX

models in the range. This means a goodbye to nearly the last of the detectors using needle meters. With the VK20 and VK30 models being computerised, and the LCD screen it brings the Viking range right up to date for the 21st century detecting scene. Not only that, the new models are still being offered at good, affordable prices.

Some years ago I wrote a Field Test report on the popular Viking 5 model, which is still a favourite of mine even today. I was therefore delighted to be given the opportunity to carry out another Field Test on a Viking detector, this being the new, top of the range model, the VK30.

I intend to present the Field Test in two parts. This first part is about the detector itself, while the second part will concentrate on its actual performance in the field.

### First Impressions

On opening the box that the VK30 is sent in, you are presented with an attractive new design of detector. The upper part of the two-piece stem is still of the "S" configuration but the main "newness" about this model is its two control boxes - one mounted above the handgrip the other fitted at the end of the detector underneath the arm grip.

The small forward-mounted control box includes the LCD screen and the
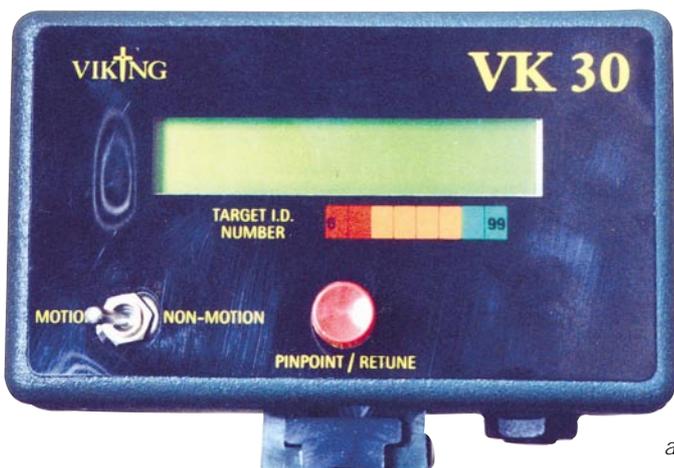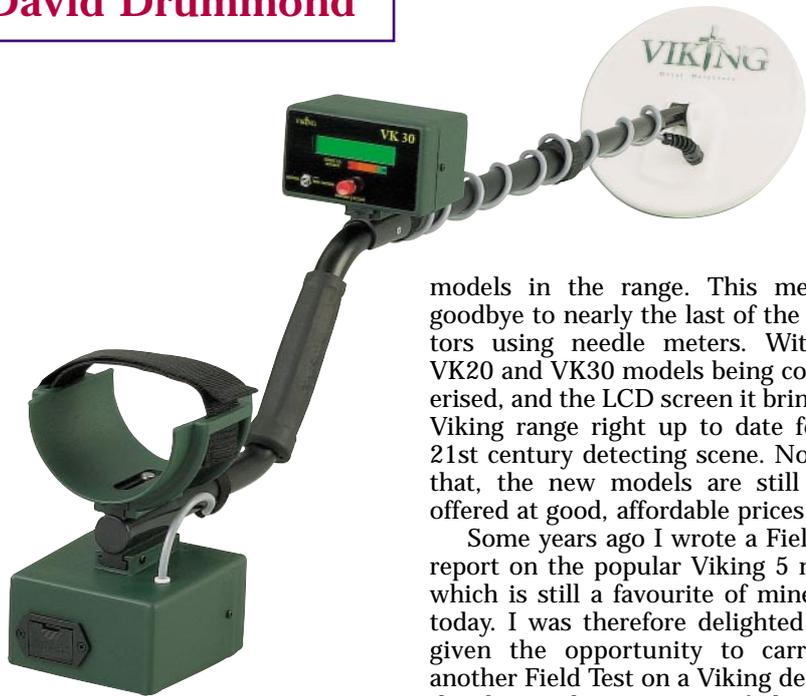
*LCD panel with speaker at rear and headphone socket on underside*

*Front of control box and rear showing battery draw holder.*

detector's speaker; the headphone socket is also to be found on the underside of this unit. The larger rear-mounted box houses the main electronics and the remaining three controls not included on the smaller control box. Both boxes are made of a tough green plastic. Despite the additional box, not present on earlier models, the detector remains lightweight and well balanced.

The arm grip is provided with a Velcro-strap to secure the detector and prevent accidents (such as accidentally dropping the detector) or arm fatigue. This arm cup can also be adjusted to suit the individual build of the user. The box fitted beneath the arm grip also doubles as the detector stand.

Both parts of the two-piece stem are finished in black. The upper part is metal while the lower stem section is of tough plastic and serves as an isolator to prevent the coil from picking up false signals. The stem adjustment system incorporates both a push button and a locking collar. The 8in standard search head is hard wired into the control box. The battery compartment is located at the rear of the control box and the single PP3 used provides excellent battery life.

The users instruction manual for the VK30 is extremely easy to follow and certainly won't baffle you with technical details or complex set-up procedures. It is only 10 pages long and even those pages provide other information, such as useful search tips, besides the actual instructions.

## LCD Screen & Controls

The green box positioned above the rubber handgrip contains the speaker to the rear and, on the underside, the headphone socket. The latter is of the standard quarter inch plug size. The detector can therefore be operated with or without the use of headphones. However, bear in mind that faint signals from deeper targets are best picked up through headphones.

The display panel on the front of the box is mainly in black with all wording in yellow. The LCD screen display itself has a green background. Screen printed beneath this is a small coloured bar marked "0" on the left and "99" to the right. The coloured bar is divided into eight segments: two red segments on the left, four orange segments in the middle, and two green segments to the right.
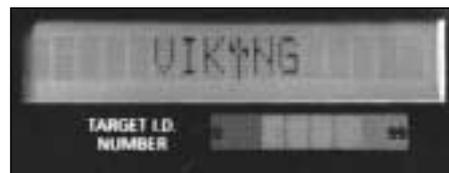


*Turn on to Viking logo - neat.*

The LCD screen provides you with all the target identification information, as well as the mode you are working in (eg Pinpoint/All Metal is represented by a "P" at the side of the screen, or Beach mode will display a "B" at the side of the screen). If you are searching in Normal Motion mode, the screen will not display any letters.

When you receive an audio signal from a good target its probable identity will be displayed on the screen in both number and block form.



*"B" indicates Beach mode.*

On this particular detector the low numbers tend to be rubbish, while the high numbers represent the better targets. The lower the conductivity of the target, the more likely it is to be iron. For example, if you receive a signal that gives you a target ID number of 10, and only one block appearing on the block scale, then the target is probably a nail. If the conductivity is higher and gives

you a number of, say, 95 and shows the block scale completely filled with eight blocks, then the target could be a silver shilling. Another useful thing about the LCD screen is that it instantly shows the changes you make to sensitivity and discrimination settings.

There are only two function controls positioned under the LCD screen. One is the Motion/Non-Motion toggle switch, and the other a red Pinpoint/Retune button. The other three controls are to be found on the control panel of the rear control box. The first rotary control is the On/Off and Sensitivity. The second rotary control is Audio Discrimination Control goes from 0 to 90 on its scale. The control is a toggle switch that is marked Inland/Beach. This is a mode switch that can be set depending on whether you are searching a beach or an inland site.

### On/Off - Sensitivity

This control has two functions:-

1. When turned clockwise switches the detector on and the Viking logo temporarily appears on the LCD screen. Turning the control all the way anticlockwise will switch the detector back off.

2. Turning the control further clockwise from the initial "on" position will increase the sensitivity level. When set to maximum sensitivity better depths can often be achieved, but this depends on ground conditions. The higher you set the sensitivity the deeper a target will be picked up. However, in some instances you may get false signals occurring or the detector may become too noisy due to mineralisation in the ground. If this happens you may have to reduce the level of sensitivity. When this control is being adjusted, the actual setting is being shown on the LCD screen. This means that you don't have to constantly look at the rear control panel. In addition, "S" will be displayed on either side of the block scale to indicate that you are in Sensitivity.

## Audio Discrimination Control

This control is used to discriminate against the ferrous targets you don't want. When turned fully anticlockwise the detector will pick up all metals. The further the control is turned clockwise, the greater the discrimination and the better the odds of the detector picking up only desirable targets. However, it must be remembered that the higher you place this setting, the more the risk of the small good targets being rejected and missed. If possible only place discrimination at the mid-way level if junk contamination means that it has to be set slightly higher than normal.

Once again this control can be used in conjunction with the LCD screen. When adjusting the discrimination, "D" will appear on either side of the block scale.

## Beach/Inland Mode Selector Switch

If you choose to use the detector on a salt water beach rather than an inland field, the Beach/Inland mode toggle switch should be set to the beach setting. The letter "B" will appear at the side of the LCD screen display to indicate that you are in this mode of operation. In this mode the detector will not detect iron objects but will still provide an audio signal and ID number for non-ferrous targets.

## Target ID

The target ID part of the LCD display provides an indication of the identity of each target. When the search head passes over a target, a number between 0 to 95 appears on the display and the block or bar scale fills up to a certain point. If only one or two blocks appear and the number is low then the target is likely to be iron. If seven or eight blocks are shown and the number is high then the target is likely to be of high conductivity worth digging up.

Some typical examples given in the instruction manual are as follows:-
10 and one block - small iron nail
55 and four blocks - modern 5p
95 and eight blocks - Victorian silver shilling.

## Motion/Non-Motion Selector Switch

By using this control you can select whether you want to conduct your searches in the Motion mode with set discrimination or Non-Motion mode which is the all-metal setting. The latter will register all metals and the search head does not need to be kept in motion to register a target. It is therefore a very useful setting for accurate pinpointing of targets.



*Examples of different readings on the LCD scale. All taken in normal motion mode.*

## Pinpoint/Retune Button

When you hold this button in, it switches the detector from whichever mode has been chosen by the Motion/Non-Motion selector switch to the opposite mode. When the detector is in Non-Motion mode, whether chosen by the toggle switch or the push button, the display shows a "P" at the side of the display screen. In non-motion mode the display gives the target ID of the object as in the motion mode. However, although there is increased sensitivity when using the non-motion mode, the display is not capable of accurate ID for small signals that would not be detected in the motion mode.

## Battery Check

The state of the battery condition is monitored by the detector in two ways. When the detector is first switched on a single beep is given which indicates that the battery is okay. If two beeps are heard then the battery is starting to fade, and if no beeps are heard then the battery should be replaced. Secondly, if when looking at the LCD screen you start to notice that the blocks on the scale are decreasing in size it is showing that the battery is exhausting. If the blocks become nothing more than a series of dashes then you will need to replace the battery.

## Signal Overloads

The LCD screen can also indicate if the detector is experiencing a target

*Overloaded signal in pinpoint mode.*
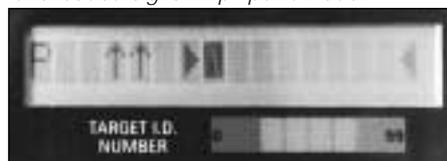


signal overload. This can save you wasting time in digging up junk. In many cases an overloaded signal is caused by a large object close to the surface or just lying under the ground surface. When you have an overloaded signal the display shows two arrows pointing upwards. However, don't always assume that the overloaded signal is going to be rubbish such as a big piece of iron. When you get such a signal try lifting the search coil up above the target area and try sweeping again. Keep an eye on the target ID number coming up - if it's iron it should be low, but if it's non-ferrous it should be high.

## Experimental Bench Testing

While I was checking out the controls of the VK30 at home I spent a couple of hours putting it through some experimental bench tests. I was interested to see where certain coins would register on the display and what the ID numbers would read like. My findings are as follows:-

## VK30 Set to Motion

The detector was left on the normal motion mode and Inland setting and the discrimination at 0.

Roman silver denarius of Trajan - 95
Roman copper as of Antoninus
    Pius - 85
Full size Edward I silver penny - 65
Clipped Edward I silver penny - 60
Damaged hammered groat of
    King Robert of Scotland - 60
William III shilling - 90
Silver threepence - 85
Jetton - 60
Lead flax seal - 70
Musket ball - 80
Cartwheel penny - 95
George III penny - 95
Medieval buckle - 75

The above examples are from "in air" bench test readings but are probably reasonably representative of the actual readings you would get on similar objects in the ground. However, these readings may differ slightly in actual search condition due to ground mineralisation or the depth at which the target is buried.

The manual recommends that a medium setting of the discrimination at 40-50 is a good place to start. Once you become more familiar with the target numbers the discrimination can then be set higher or lower.

In part two of this Field Test I will let you know just how the VK30 performed when I took it out to a number of my sites. **TH**