

Detector Field Test

Minelab Sovereign Elite

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There was some degree of expectancy in the office - especially on my part - when we were anticipating the arrival of the new Minelab Sovereign Elite for assessment. Having owned and used a Sovereign XS2 as part of my own detector armoury for about four years, I was looking forward to seeing and testing the claims that Minelab were making about this latest upgraded version.

Let me give you a little background concerning my association with the Sovereign. I believe that there are a number of factors that stay constant when selecting a detector. "Horses for courses" is the saying that readily comes to mind, meaning that some detectors perform better than others according to the conditions that obtain at any one time. This applies not only to the detector but also to the type of search head that is being used. Add to this, the individual's personal requirements, skills and knowledge, and you have a number of complexities to come to terms with.

used and made judgement on the myriad of makes and models available. It's not that simple, though. At that time I preferred to use one particular range of detectors, because they were light, fast, and had excellent discrimination and sensitivity. I was therefore advising people that there were detectors that could cope with harsh conditions better than the one I was using, but was "switching off" when it came to my personal requirements because it was totally opposite to what I was used to.

The Sovereign had feel, balance and performance characteristics that were alien to me. But while loyalty to one manufacturer - for whatever reason - is not necessarily a bad thing, it pays once in a while to take off the blinkers. I did this and my association with the Sovereign commenced.

Having accepted that it was a more appropriate detector for the conditions I was experiencing I bought one. I found the Sovereign to do its job and do it extremely well.

After reading through the manufacturer's literature on the Sovereign Elite, it seems that Minelab have listened to feedback when redesigning

two of their most popular models (the new Musketeer Advantage also uses many of the same components as the Elite).

As soon as the packing carton is opened and the components are removed, the design changes are very apparent. First of all, the Elite has a new silver control box incorporating a unique quick release method of attachment to either of two positions on the stem (that is now in just two sections). The battery housing on the underside of the control box enables the new style rechargeable battery (the rechargeable NiMH battery now has a built-in green light that extinguishes when the battery is fully charged) or eight dry cell battery case to clip firmly into position. There is a fabric-padded armrest (washable) that covers the new metal arm cup and securing strap.

The other most notable change is to the search coil. It is lighter and thinner than its predecessor and has been given its own micro circuitry as well as a new name - Tornado. Closer inspection of the control box shows that the controls have also had a face-lift with the addition of a noise cancel switch and the repositioning of the on/off knob.

Controls

Let's take a closer look at the controls. Starting at the bottom left hand corner the first knob that you see is the **Threshold** control - this allows for the adjustment of the background threshold level and should be set so that a low hum is heard. Setting this control too loud or having a silent search can lead to the possibility of missing targets.

The **Sensitivity** control is sited next. This allows the level of sensitivity to be set to suit the conditions that you are searching in by making the detector more or less sensitive to interference



During the time I spent working in a part-time advisory capacity for a dealer selling detectors and accessories, the most frequent question I was asked was "What do you consider to be the best detector?" coupled with "Which detector do you use?"

The thinking behind this is simple: "You deal with most types of detector and have the choice of whichever model you like to use; therefore, if you are using it, it must be okay for me". Of course, I did have this option and it would have been wrong not to have

caused by mineralisation. In the fully anti-clockwise position it is in the Auto setting which, as the term implies, automatically adjusts sensitivity to give a stable level. By turning the control clockwise, you move into the manual setting gradually decreasing the sensitivity until you arrive at the Beach indicator. This control is one that the operator needs to experiment with to obtain the best results but beginners will be best advised to use it in the Auto position.

The **On/Off/Volume** control is sited at the lower right hand side of the control panel. By turning the knob clockwise the Elite is switched on and the volume increased the further the control is turned until you reach maximum.

The jackplug socket (quarter inch) is sited in the lower right hand corner of the box. Above this is the audio speaker grid.

Situated in the centre of the control panel is the **Disc/All Metal** control. It is a two-way toggle switch and enables the user to search purely for non-ferrous metals (Disc) or in the All Metal position it will detect both ferrous and non-ferrous metals. In the All Metal position the switch also acts as the pinpoint mode as well as a reset for the threshold when the detector is set in the variable tone option.

Above the Disc/All Metal switch is the **Tone ID** switch. The operator has the choice of two settings. In the Fixed position the tone of the signal from the target will always be the same irrespective of the target's conductivity level, whereas in the Variable position the tone of the signal received will change to help the user identify the target that has been detected. The higher the object's conductivity level, the higher the pitch of the signal tone; equally the lower the conductivity, the lower the tone will be.

To the right of the Tone ID switch is



the **Noise Cancel** control. Again, a two-way toggle switch it is labelled above and below with Band 1 and Band 2. On occasions it is possible for the detector to become unstable or chatter, a situation brought on by the close proximity of other detectors or electrical or radio transmissions. Switching from one band to the other might help to overcome this problem. The selection of either of the bands does not affect the performance of the detector; it is purely to stabilise the effects of interference.

The **Disc** control is sited in the top left hand corner of the control panel and is used in conjunction with the Disc/All metal toggle switch. In this mode the detector will eliminate unwanted ferrous signals. In the fully anti-clockwise position the detector will ignore small iron objects such as

nails, and as the control is progressively turned clockwise more objects will be ignored according to their conductivity levels.

In conjunction with the Disc control the **Notch** control (sited below the Disc) is used in combination to discriminate against certain metal objects. The difference between Notch and Disc, is that Disc is a continuous band of discrimination, whereas Notch is a short segment of discrimination that can be moved up or down the discrimination scale. For example, should you opt to ignore ring-pulls, by turning the Notch to that setting of conductivity the ring-pull will be ignored while all other non-ferrous objects of a different conductivity will be accepted according to how high a level of Disc you have set the detector to. It should be borne in mind, however, that other more desir-



*Left & right:
quick release
security clip for
control box.*



FIELD TEST



Battery housing and underside of control box. Right: New Tornado coil.

able objects with the same conductivity level as ring-pulls will also be eliminated.

Field Appraisal

Assembly of the detector is straightforward and the instruction booklet, written in plain English, is easy to follow and understand. Not too much technical jargon here! For the start of my field test I opted to use the control box mounted under the shaft in the conventional position, and also fitted the optional digital target meter above it. The rechargeable battery had been given a 14-hour charge and clipped in the control box. I also chose to use the 10in Tornado coil at this stage as opposed to the 8in that had also been sent to be tested.

The first field I went to was my favourite Roman site - heavily mineralised and well searched over the years - but still throwing up some nice artefacts and coins. I set the volume to maximum, the discrimination and notch to minimum, and the Disc/All Metal switch to the disc mode. The tone ID was set in variable and the threshold to a steady hum - all settings that I regularly use with my own XS2.

As I started to walk across the field the threshold immediately went to a low tone indicating to me that the ground was bad.

I continued searching for about another half an hour before deciding to hip-mount the control box - my preferred method with the old XS2. Having finally found the most comfortable set-up I could now concentrate on the Elite's performance. To my delight the signal from the Tornado is sharper and narrower than the previous coil, and when the All-Metal switch is used to pinpoint the target, very accurate.

My finds on this visit ranged from small bronze coins to a broken fibula, together with lots of small pieces of lead; however, my best find was a potin. The signal from this was sharp and clear, and although it wasn't deep it was certainly an interesting find. At first glance it appeared that the coin had a hole caused by corrosion, careful examination showed that it was created during the casting. The mould hadn't been made properly and the result was the hole in the flan.

I continued to change from variable to fixed audio signal, and found that I was happier with the variable tone used in conjunction with the target meter. The question of target meters is one of personal choice - in my view if you get a good signal you are going to dig it anyway whether or not the meter says it is of high conductivity or not. The good point about the Minelab meter is that if a ferrous object is located, with or without an audible signal, it will show on the meter as a minus number, thereby eliminating any doubt in your mind whether to dig or not.

The severest test for the Elite came when I was invited to detect on a deserted medieval village site in Norfolk by Chris Rogers. Chris had recently purchased a Sovereign Elite and wanted to compare it with another on what would be the worst conditions I have ever searched. The field that he took me to was next to a medieval hall once owned by the second most powerful man in the country after the king. It had been searched by Chris over a number of years, but is still very productive with a high percentage of coins and other non-ferrous objects being recovered. However, the iron infestation and mineralisation were incredible.

The first thing that I checked was

the effectiveness of the noise cancel switch. Normally, when searching with another colleague we could only get to within 10 to 12ft of each other before one of us would have to turn off. Chris and I both set the switch to Band 1 and, starting at approximately 20ft apart, we turned on and started to walk towards each other. At about 5ft apart we started to experience some chatter and interference, so I switched to Band 2. We then continued walking and managed to get within 2ft of each other before the chatter started again. It was a great improvement, and one that groups and rally competitors will appreciate.

As a result of the ground conditions the Elite gave me broken and other signals despite changing the sensitivity and discrimination settings. Although I was confident that I could tell that the signal was caused by an iron object, I was determined that I would dig such signals to prove if the detector was doing its job. I did not dig one piece of iron unwittingly - the discrimination was indeed doing its job.

Despite getting thoroughly soaked to the skin - and the fact that this site proved to be severest test I have ever had to put a detector through - I came away happy. I had made some very nice medieval finds including a couple of jettons and a religious pendant. An added bonus was that Chris' wife cooked us a superb dinner. It was well worth the two-hour drive each way to prove a point.

The Elite's performance on the beach at Walton again confirmed what I already knew - I was able to detect on the wet sand using the same settings as those I use inland without the signal being affected by the salt water. However, I should have taken Dave



Potin

Mulliner's advice and checked the tide table before going the beach as I only had a short period of time before the incoming tide covered the search area. Lots of ring-pulls were found but nothing of interest, confirming my preference for inland detecting.

The rechargeable battery lasted for a measured 16 hours before I decided to recharge it, but even then I wasn't experiencing any indication that it was necessary. The green light "fully charged" indicator on the battery does away with any worry about charging times, and you can recharge the battery without having to completely drain it for fear of it developing a "memory". No difference in performance was noted when using alkaline batteries in the dry cell battery pack.

In my opinion the smaller 8in coil gives exactly the same responses as its larger brother. I prefer the 10in coil as it gives greater, and therefore faster, ground cover. Using the notch control is very much a personal thing, and my experience of it leaves me with the opinion that it's unnecessary; however, some enthusiasts like it. A large number of different ring-pulls are now manufactured, each having its own level of conductivity; therefore you cannot notch them all out. If you eliminate foil there is a fair chance that the small hammered coins will disappear, as will small items of gold. Incidentally, try cutting the ring on a ring-pull and see what effect it has on the signal - it can be quite misleading.

Summary

Minelab have certainly done their homework with the Elite. General build quality has never been a problem with any Minelab detector, and here we have one that not only looks good but also its performance in the field has improved beyond my wildest expectations because of the new coil. The new Tornado coil has totally transformed the Sovereign Elite - its sharp, fast and accurate pinpointing of targets was



Religious pendant

what impressed me most about this detector. On the most extremely mineralised and iron infested soil I have ever searched on I didn't unintentionally dig one ferrous item from the ground.

The Sovereign has always been noted as a deep-seeking detector. I carried out some experiments with pre-decimal pennies buried at varying depths in neutral ground. Setting the sensitivity control to around the 10 o'clock position gave me the deepest signal at 10in.

The ability to totally ignore iron and overcome bad mineralisation makes this detector a leader in its class.

Equally at home on the beach or inland, the thought that Minelab have put into the detail of this transformed Sovereign more than compensates for the heavier than average weight and makes it a "must have one" for the detectorist who constantly searches in adverse ground conditions. Minelab have certainly moved on with this latest offering. **TH**



Medieval token

Specifications

Weight: Control Box (excl. batt) 550g

8in Tornado Coil 590g

10in Tornado Coil 780g

Batteries: Alkaline Cells Eight 1.5V "AA" NiMH Battery Pack 12V, 600 mA/hr

Coil: 8in "Double D" w/proof Tornado 800

10in "Double D" w/proof Tornado 1000

Headphones: Jack - Stereo/Mono quarter inch

Transmission: Broad Band Spectrum (BBS): multiple simultaneous frequency transmission at 1.5,3,4.5, 6 ... 25.5 kHz

Ground Rejection: Automatic Ground Tracking

Detection Modes: All Metals/Pinpoint: Detects ferrous/non-ferrous metals

Disc/Iron Mask: Rejects ferrous/unwanted non-ferrous metals

Visual Display: Display 2.5 digit LCD digital meter (optional accessory)

Warranty: Control Box 2 years
Coil 2 years

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