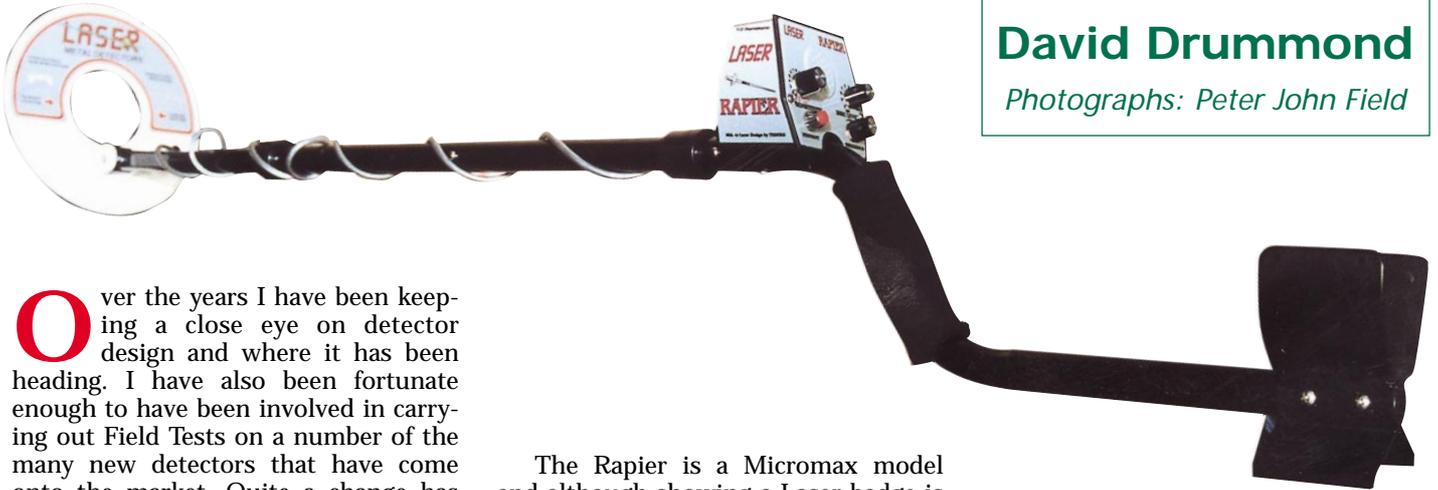


Detector Field Test

Laser Rapier Part One

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Photographs: Peter John Field



Over the years I have been keeping a close eye on detector design and where it has been heading. I have also been fortunate enough to have been involved in carrying out Field Tests on a number of the many new detectors that have come onto the market. Quite a change has occurred in the cosmetic looks of these new machines, but some still have weaknesses that have not been fully addressed (eg the weight and balance of the detector, battery consumption, and the size and quantity of batteries needed).

On some detectors the battery compartment seems to have been poorly designed, and makes fitting new batteries in cold or rainy field conditions very difficult indeed. Other makes and models require multiple batteries and this can mean high running costs (in the case of alkaline batteries), besides adding to the weight and affecting the balance of the detector.

However, modern electronic circuits now run far more efficiently than just a few years ago, and a number of manufacturers have designed detectors to work effectively from just a single PP3. Not only that, but they have also come up with battery compartments that make changing a battery easy under any conditions.

The American company Tesoro is an example of one such metal detector manufacturer. Many of the detectors in their range run from a single PP3 and the use of surface-mount electronic technology has allowed control boxes to be made very small and light indeed.

Initially, it was my intention to buy myself a Laser Scout, but after checking on the Internet I settled for a Laser Rapier that I purchased from Derek Critoph of Coinshooters. He offers some really good deals, and I obtained the Rapier at such a reasonable price that I also opted to treat myself to a pair of good quality Predator headphones.

The Rapier is a Micromax model and although showing a Laser badge is actually made for the UK importers Treasure World by Tesoro. It is an extremely light and user-friendly detector, and just like my other favourite machine, the Viking 5, it runs on just one PP3 battery. Before making my purchase I was aware of the Rapier's reputation for good depth and its ability to find small delicate pieces of metal (such as cut hammered coins) that can be missed by other machines.

Good Reputation

Ever since the mid-1980s I have been studying the reports and illustrations shown in this magazine concerning the countless Roman and medieval coins and artefacts found by people using Tesoro-made detectors. Gordon Bailey's articles also provide a good insight as to what has been found by users of Tesoro/Laser machines.

A friend of mine has been using a Laser B2 Power Max model for around three years now, although by the time this article is printed he will have upgraded to the new Tesoro Cortes. My two brothers are also both keen Tesoro users, one of them owning a Tesoro Cutlass and the other an Amigo II. All three of these detectors have made numerous good finds for their owners, and I guess it was only a matter of time before I followed suit.

Before and after purchasing my Rapier I spent a considerable time on Internet searches to see whether I could track down an independent report on this model. I find it useful to collect as much information as possible on a new detector, particularly where field testers give recommendations on the setting up of controls, and other

hints and tips. Unfortunately, despite the wonders of the Internet, I could not find what I was looking for.

However, while going through a box of *Treasure Hunting* back issues I did manage to find a field test that had been carried out on the Tesoro Silver Sabre U-Max model. Bryan Oram had written the report in 1998, but the controls and other features looked almost identical to the present day Rapier.

Bryan's report contained some good pointers for me to try on my Rapier, especially concerning the setting up of discrimination and sensitivity. (I had received differing reports from various people as to the setting of these two controls).

When sending the detector, Derek from Coinshooters had included a photocopy of Mick Turrell's report on the Rapier that had appeared in *Searcher*. I found this interesting, but unfortunately too brief as to be of much help.

One criticism I have of most detector tests reports is the lack of variety of sites that they are normally carried out on. Having said that, I do realise that time restrictions can play a part, as well as the non-availability of sites in the summer in regions given over to mostly arable farming. One area that does not normally get addressed properly in field tests is that of beach detecting. I am only too well aware that wet sand or black sand hunting is pretty much a non-starter for most motion detectors, but they can be used on dry sand to good effect. (I hope to cover my findings with the Rapier on dry sand beach sites in an update to this report later in the summer).



Fig.3. The Rapier's control panel. On my example there has been a slight modification in the form of a two-position switch to allow for precise calibration of different types of search coil.

Fig.2. The neat and easy to use battery compartment.

Assembly

When the packing case arrived with the Rapier in it - together with some other bits and pieces I had ordered including the Predator headphones - my purchases came in one large box. When I started unpacking this and came to the box containing the detector itself, I couldn't help be surprised as to how small it was compared to the boxes that my previous detectors had arrived in.

Once I opened the box I busied myself in assembling the detector. The Rapier breaks down into three small sections. This is fantastic if, like me, you make quite long journeys to your sites on foot as the detector is small and light enough to fit into a medium-sized backpack or rucksack.

Assembly of the detector is quite simple. The first job is to attach the non-metallic lower stem to the Rapier's 8in white concentric polo coil. (Remember to place the two gripper rubber washers in the cavities provided for them at the lower end of the stem). Line up the holes, push through the bolt and then tighten with the supplied finger nut (but not too tight).

Next, the lower stem is joined to the middle stem. Loosen the locking collar, slide in the lower stem and then adjust to length by the spring lock clip and the series of holes drilled in the middle stem. Don't tighten the locking collar until you have fully assembled the detector. The third and final stem has the control box and arm cup/detector stand attached to it. Attach the other stems to this, and once you have

checked the length of the detector as being comfortable for your height, tighten the middle locking collar.

With the stem assembly complete, wrap the coil cable snugly around the stem but with just enough slack at the base to allow for coil angle adjustment, and enough slack at the top for the coil plug to be attached to the control box.

Controls

The control box is of the unique micro-size and shape that the Tesoro/Laser range are becoming more and more famous for.

The battery compartment is situated on the underside of the control box, positioned about the search coil socket and next to the quarter inch headphones socket. Access to the battery compartment is by means of a slide cover and the single PP3 just drops in - there are no wires or awkward clips to worry about.

The detector's handbook contains 25 pages and is laid out in an easy-to-understand format. The printing is in black and white, but the photographs are clear and the booklet certainly contains enough information, including digging tips and advice, to get you started.

There are only three small rotary controls and one red push-button on the controls panel, and these are all very straightforward to use and easy to understand.

Sensitivity: Directly underneath the word "LASER" on the left of the control panel is the first of these controls, labelled "SENSITIVITY". This control has four functions. The first is to turn the detector on, and the second to give you an automatic audible battery test. It then adjusts the detector's sensitivity level from its minimum position to 10 on the scale. However,

there is an added bonus here as it is possible to go well above the 10 setting into the red "MaxBoost" segment, should you be searching a site with low junk and mineralisation levels. The fourth function of this control is to turn the detector off when you have finished your search.

Discrimination: Next to the above control and directly under the word "RAPIER" is a rotary control marked "DISC LEVEL". This control is used to adjust the amount of discrimination you want to use from minimum setting to a maximum level of over 9.

Pinpoint: Underneath the sensitivity control is a bright red pushbutton label as "PINPOINT". This control has two functions. The first is to precisely pinpoint a target that the detector has just picked up. This is achieved by lightly pushing down on the button as you scan over the search area. In effect, the button is temporarily putting the detector into an all-metal non-motion mode. When the button is released the detector will return to its motion discrimination setting. The second function of this button is to aid in the adjustment of threshold tone as described below.

Threshold: This third and final rotary control is situated underneath the discrimination control and labelled "THRESHOLD". To adjust this, you press lightly on the pinpoint button and turn the control to achieve a level of faint sound that you are happy with. (You will not hear this sound setting again unless you use the pinpoint button again to locate a target as the detector normally runs in "silent search").

All controls work in a clockwise

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Fig.4. The remains of a dental plate with two teeth remaining. The plate is made of silver but also has some gold wire showing.



Fig.8. Run of the mill finds using the Rapier on my first outing on basic settings.

fashion and are only turned anti-clockwise to adjust the setting back or turn the detector off.

The battery test, as mentioned, is carried out automatically when the detector is first turned on and is an audible tone. According to the manual if the battery is still good the tone you hear will last three to five seconds. As the battery wears down, every time you turn the detector on you will notice this tone getting much shorter or it will not sound at all indicating that its time for a new battery.

For best results and staying power using an alkaline battery is certainly recommended. Only one PP3 is needed to operate the Rapier and this will give you plenty of hours to search with.

Field Appraisal

As with any reader taking delivery of a new detector, the first thing on my mind was to get out and see how well it would perform. However, the weather seemed to be against this and every time I ventured out over the next few weeks I had to take both waterproofs and plenty of warm clothing. If it wasn't raining it was blowing icy gales making it both uncomfortable for me and freezing the ground solid in the process.

The first site visited with the Rapier was within walking distance of my home. It was an area that I had searched quite often in the past as, although possessing its fair share of modern junk, it had also produced



Fig.5. Two "partefacts" one made of bronze, the other of brass.

quite a few earlier fragments showing that there had been some sort of activity associated with the field in medieval times. I had also found a hammered silver coin here that was probably a groat of Robert or David, although it had suffered damage in antiquity. The coin was found in a section of the site that had also produced plenty of medieval potshards.

On arrival at the site a number of things became immediately evident. The first was that the farmer had left it as set-aside with vegetation that had been rotting on it for over a year. I was then told that the field had been sold off for a building project. This included the widening of the main motorway in front of the site, and also the building of a number of houses within the next two or three years.

I tried to make my way over to the area of the field where I had made some interesting finds on my last search, but

was hampered by the overgrown and rotting remains of the previous crop. Also, quite a large amount of flooding had occurred due to the tremendous rainfall of the previous week. In fact, the seagulls were having a much better time than I was and I decided to call it a day.

Rather than head for home, however, I wasn't going to let one flooded field completely spoil my day. I looked around for another site and luckily found one not far from the first. I stayed on this field, which was in stubble, until torrential rain eventually drove me off. Luckily, one of the items I had ordered with the Rapier was a waterproof control box cover. In my part of the country (Dundee) this is something that you definitely need!

The stubble field showed evidence of having been dumped with "town dung", for it was giving off signals with virtually every step that I took. For this



Fig. 7. A small military badge (probably the Black Watch) and an earlier shield badge showing a cross.



Fig. 6. Sword or dagger chape showing some decoration.

first trial run I had set the discrimination to 3.5 and sensitivity to 8 just to get acquainted with the machine. I found that some very large pieces of iron still came through sounding as good targets (a two-way signal) but these resulted from ring shapes or horseshoes and - so far as I am aware - no detector presently made can cope with targets of this type.

As I was going through a familiarisation process I had not set up the Rapier for best depth, but small coin-type targets were coming up from a junky site at 4in-5in, and larger targets from as deep as 8in. The deepest find

was an old aluminium beer can that had somehow managed to find its way down into the ground at a depth of 10in.

On the plus side for my new detector I was digging up a great deal of non-ferrous items. These, in the main, consisted of pieces of copper or bronze scrap but I had to make three stops to empty my pockets that were starting to weigh me down. In some four hours of searching I had recovered something like 200 of these targets.

Only a couple of finds of interest came to light before the weather turned nasty and drove me from the field. One

of these was a piece of shaped bronze, and the other a sword or dagger chape. I also recovered three coins and around six buttons. My most peculiar find was somebody's dental plate in silver, which still retained two false teeth and a piece of gold wire. This find wasn't just unusual but the circumstances of finding very strange to boot. When I was kneeling down to recover it from a muddy puddle the first thing my fingers pulled up was the remains of an animal jaw complete with all the teeth. Really strange!

(To be continued)