

I had only just tested the Lorenz Pulse 5 with the 1m. x 1m. frame coil, and then the 10in. concentric coil, when through the post came an enormous package.

This turned out to be the latest in the Pulse 5's range of accessories.... the mega-sized 18in. "spider" coil! This coil is not featured in the Pulse 5's manual that I had been sent with the detector itself, so it was a case of going out to see for myself what it could do.

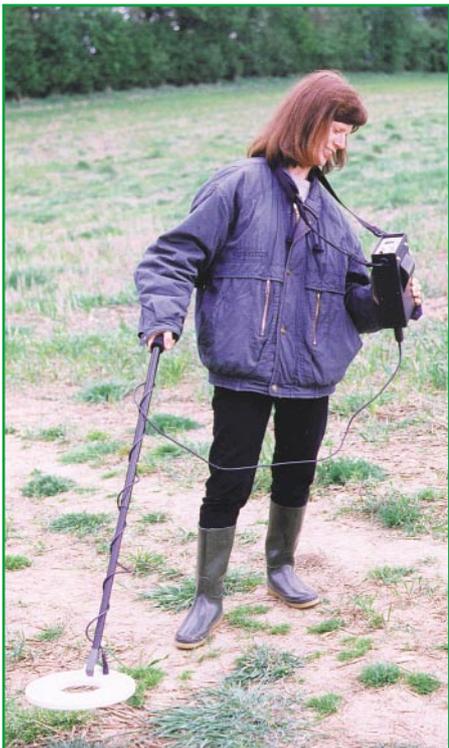
Before I go into details about the 18in. coil (I'm still testing it!) I'll provide a brief recap on the Pulse 5.

Lorenz Detecting Systems are based in Germany, in the city of Hanover (which, coincidentally, is where I was born when my father served in the British Army!). The company is owned by Herr Lorenz Roatzsch who designed the Pulse 5, which is a new type of Pulse Induction detector.

Fitted with the 2m. x 1m. frame coil the Pulse 5 has detecting depth capability of up to 8m.! Needless to say, it requires two people to operate it when fitted with the frame coil (or preferably three, as we felt that it was easier if somebody followed with the digging gear!).

For the purpose of this field test we were supplied with a 1m. x 1m. frame

My wife Sylvia using the Lorenz with the 10in. coil.



Tuning the Pulse 5 by holding its coil in the air.

Reader's Field Test

David Stuckey & Julian Evan-Hart

coil, and a 10in. concentric coil that comes with the standard kit. We had successfully tested the frame coil on an aircraft crash-site, by locating the impact position in the field. Although the Heinkel hadn't impacted too deeply into the ground, we managed to locate three large targets, which (after comparison to wartime photographs) we believe to be the impact positions of an engine, the cockpit, and then the other engine.

We searched the surrounding area and found a plethora of small objects from the crash debris, including the mangled nose cone from one of the engines. We couldn't actually dig the site as a licence is required to do so.

We also tested the frame coil on one of our Roman sites, with mixed results. Although the Pulse 5 can discriminate, our lack of experience with it certainly made for hard work.

This particular site is one that we have only been going on for just over a year. We believe that it is a large Roman

camp that appears to have had its own military temple, judging by some of the finds that have been emerging.

When we first go onto this site after ploughing, the ground seems to be awash with Roman coins! By that I mean you can hardly go a few paces without a coin being detected (mostly bronze "grots").

After a couple of months of intensive searching the site seemed to have become "exhausted". We therefore decided to try out the Pulse 5 on this site to see if its greater depth capability would produce even more finds. We started at one end of the field (with the frame coil) and gradually worked our way towards the main area of occupation.

As I stated in Part 1 of the Field Test, the Pulse 5 has been basically designed to search for very large objects that may be buried deeply in the ground. This is especially the case when fitted with a frame coil. Although the frame coil is less sensitive to smaller objects, these will still be detected if the items are on, or near the surface.

As we approached the main part of the site the Pulse 5 started to react to the expected iron targets in the soil. At first these were encountered every few feet, although the Pulse 5's discrimination meter registered most of them at various levels between 30 and 60 as described in the manual. Some of these targets we dug to confirm that they

were, in fact, iron - and they were! Most of these signals turned out to be Roman nails.

Proceeding deeper into the camp site the Pulse 5's loudspeaker hardly stopped whining! The ground became a virtual mass of iron! This was something that our own detectors could handle quite well, by ignoring ferrous targets. We decided to retire to the edge of the field and read the manual to see if there was any way of countering this problem. But alas at this point rain threatened, so we gave up and went home.

Later that day I studied the manual thoroughly to find out how to reduce the Pulse 5's sensitivity to such surface targets, which were mostly iron.

It is, in fact, done by turning the mode switch to 1, 2, or 3, depending on the level of contamination. We therefore decided to try again a couple of days later, only this time we used the 10in. concentric coil.

We started off as before, with the mode switch at "Disc", and slowly moved towards the main part of the site. Again, the iron targets started to emerge but we kept going until the iron signals became a real nuisance, then we switched to "Disc 2".

When switching on the Pulse 5 with a concentric coil, it is best to hold the coil up in the air. After checking the battery, switch to "Disc" and press the Zero button for about three seconds. Lower the coil to the ground. If the threshold noise increases as you do this, press the Zero button again for three seconds. With the Audio and Freq. controls turned to mid position the Pulse 5 should be sounding off at about two clicks per second.

In "Disc 2" the sensitivity was only slightly reduced and the detector still reacted to the massive iron contamination in the field. I decided to switch to "Disc 3" and this seemed to make quite a difference. I also held the coil slightly higher off the ground to avoid surface contamination. As the 10in. coil can detect a medium-sized object at 24in. in "Disc 3", losing a few inches isn't going to make a lot of difference!

With Julian operating the Pulse 5 we continued across the field, going backwards and forwards in straight lines. When we'd crossed the field for the third time and turned to make our way back, the Pulse 5 gave a strong signal. We looked at the meter, which was giving an intensity reading of about 80. We dug out about 6in. of soil and tried again. This time the meter read 100 and the blue light came on.

Switching the Mode control back to



Roman bronze zoomorphic knife handle found at about 9in. using the Lorenz Pulse 5 with its 10in. coil.

"Disc", for a target classification, we swept the coil back over the hole. This time the meter read 60, which meant that the object was probably made of iron, but could possibly be a bronze artefact.

Digging a bit deeper we spread the spoil out away from the hole so that Julian could sweep over it. The object was still down in the hole so we dug out a little bit more, thinking that the target was probably a horseshoe or broken ploughshare.

This time the find was out, so after we had pinpointed it in the spoil we sifted through it with our fingers to see what it was. At first the object looked like a large lump of shapeless rusty iron. But Julian noticed a rounded piece of smooth green patina on one side of the object. Cleaning off some more of the dirt exposed even more areas of bronze, and then a face appeared! The object looked like a small bronze statue encrusted with iron. Julian soon recog-

Roman phalera mount, found with the 10in. coil.



Roman key with trifoliate handle, found with the 10in. coil.

nised the object as a zoomorphic Roman knife-handle with the head of a snarling leopard or panther.

Looking at the hole, we estimated that the object had been about 9in. down when the Pulse 5 had detected it. This we thought was pretty good, considering that the object hadn't been discovered before with our normal machines.

If we had dismissed the detected object as just a piece of iron (judging it from the final meter reading) we would have passed by on a truly remarkable find! However, the Pulse 5 had managed to give enough of a positive indication to cause us to dig, despite the iron encrustation covering the bronze.

Julian and I swapped over and I continued searching across the field. I think Julian was too excited with his find to concentrate any more!

Out in the middle of the field I encountered so many signals that I didn't know which to dig and which to ignore. I didn't want to risk passing by on a good find just because the meter indicated that it fell into the same category as iron.

One very strong signal turned out to be a lead artefact that had been folded in half. This had given a reading of 30. I made a note of this, as lead didn't feature in the Target Classification chart in the manual and is a very common find on Roman sites.

The levels of iron in the middle of the field were too much even for "Disc 3" to cope with, so I moved up to the end of the field where I had made some pretty good finds earlier in the year. These included, in particular, some unusual Roman brooches.

The iron levels here weren't too bad, so I switched the mode control to "Disc 2". This increased the sensitivity quite a bit, which is exactly what I wanted. I slowed down as I walked across the field to try and concentrate on changes in the threshold tone. We believe this part of the field may have been a votive site or military temple. It figures that some of the potential finds

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here could be quite deep if they had been originally buried by the Romans as offerings.

I decided to ignore the loud surface signals as these were most probably iron. I had scoured this area intensively with my other machine, so I was fairly confident that there were very few non-ferrous targets left.

The Pulse 5 gave a faint "whirr" as the threshold tick-rate suddenly increased. I swept the coil over the spot carefully to try and pinpoint the source of the signal. The meter gave only an intensity reading of 10. I therefore sunk my spade into the ground and dug out about 6in. of soil.

Sweeping the coil over the hole the signal became much louder with the meter reading of almost 90. I switched the mode control to "Disc" and tried again. The object registered 60 on the meter, which probably put it just outside the discrimination level of a small iron object. As this object seemed small there was a high chance that it was a large bronze coin, or perhaps a silver *denarius*.

I dug out the side of the hole and spread the spoil away from it. The Pulse 5 was silent as I swept the coil over the hole again, so I turned to the spoil. This was where the object was.

I put the search coil down and sifted

through the soil with my fingers. At first I thought the object was another brooch, but as I cleaned off the excess dirt I realised that it was, in fact, a key. My find was later identified as a Roman key with a trifoliate handle.

Continuing across the field, I had almost reached the hedge on the opposite side when I heard another "whirr" as the threshold increased slightly. I scuffed some soil away with my boot and tried again. The signal got stronger.

I sank my spade into the ground and dug out a massive lump of soil. Then I dug out the sides of the hole to the same depth (about 8in.). The Pulse 5 gave a tremendous signal as I swept over the spoil.

I grabbed a handful of soil and held it in front of the coil... nothing! So I tried again and again until I got another signal. Breaking the soil up in my hand I saw what at first looked like a small door knob. The object was an inch wide but seemed quite heavy for its size (in fact, over an ounce in weight). We soon identified this as a Roman *phalera* mount in superb condition!

By the time the 18in. coil had arrived we were no longer able to go on the Roman site due to seeding. I therefore decided to take it to some woods not far from my home to try and get the hang of it.

Before this I did try an "in-air" test in my back garden with my wife holding an old pre-decimal penny at arm's length. As I slowly walked towards her pointing the coil at her hand the Pulse 5 started to react at about 18in. "Cor! This is terrific!" I shouted. To my amazement the signal continued when my wife lowered her hand. I was picking up the aluminium garden shed 6ft. behind her!

Trying not to look a total "plonker", I immediately stated that that's better than my other machine can do. (I hadn't remembered my earlier attempts with the frame coil!).

In the woods I encountered the usual shotgun caps, buttons, and a myriad of iron targets. Some targets were so deep that they were covered by tree roots (it's a shame they don't supply a JCB with this outfit!). Many of these signals I had to abandon, as they were too deep to dig with a now badly bent spade.

My frustration was soon relieved, however, when I was walking back to my car. I tried digging a another signal. This one wasn't too deep and came out in the first scoop. It was a superb pipe tamper (possibly 18th century?) with an Irish harp motif on the ring.

The following weekend I took the Pulse 5 to show to an old detecting friend who lives in a village just a few miles away. His house lies close to the site of an old manor house and he has permission to search the fields around it.

My friend accompanied me across the field as I demonstrated the Pulse 5. It was nice to use the detector on a site that didn't have much iron contamination, although shotgun caps were still a nuisance. By now, however, I was becoming familiar with the Pulse 5 and could tell when a shotgun cap was present. The meter would hardly move, or if the cartridge cap was on the surface, the reading would be about 10.

My first decent signal was almost on the surface and registered almost 70 on the meter. I scooped out a few inches of soil and spread it away from the hole. As I explained in Part 1 of this Field Test, spreading out the soil away from the hole is helpful when using the large frame coils or even the 18in. coil. Otherwise you will find it very difficult to know if the object is out of the hole.

As I swept the search coil over the spoil I got a tremendous signal, but I did find pinpointing pretty difficult with the 18in. coil. It was hard to know if the target was under the centre of the



The author using the 18in. "spider" coil on an old manor site.



18th century finger ring pipe tamper found in woodland with the 18in. coil.



The motif on the seal bezel



Part of a medieval purse bar found with the 18in. coil.



Obverse and reverse of silver shilling of William IV. This was found with the 18in. coil.



Hammer from an old firearm (probably a muzzle loading percussion cap shotgun) found with the 18in. coil.



Left: medieval buckle. Right: Tudor buckle. Both found using the 18in. coil.

coil, or under the edge. The smaller the object the more difficult pinpointing becomes.

I soon found the target, which turned out to be part of a medieval purse bar (slightly bent, unfortunately).

The 18in. coil didn't seem to miss much with regards to shallow targets. The coil covers well over double the area of my other detector's coil. Signals were coming thick and fast as we got closer to the village church. Again it was difficult to interpret which signals were iron and which were not. A bronze coin several inches down would probably register the same as iron on the meter. But the indication would increase up the scale as the target came closer to the coil. It was therefore a case of checking any signal I wasn't sure about.

I switched to "Disc 2" to see how the 18in. coil would pick up on deeper targets by avoiding the surface ones. Again, I found myself listening for slight increases in the threshold tone. Within seconds I had a lovely signal that registered 70 on the meter. I dug out several inches of soil and placed the spoil away from the hole. Switching back to "Disc", and pressing the Zero button for three seconds, I then swept the coil over the spoil. The object was there and I could see it! It was a superb shilling of William IV in almost Extremely Fine condition.

As we worked our way back across the field I found two buckles: one

medieval and the other probably Tudor.

I gave my friend a go of the Pulse 5 and explained how it worked. As we approached the edge of the field near his house he got a fairly good signal. I dug this for him as I explained how to read the meter. This target was looking pretty good as the meter hit 80. I passed handfuls of soil in front of the coil, until we'd found the target. The object turned out to be the hammer from an old firearm.

Summary

I was truly impressed by the Lorenz Pulse 5 despite the initial difficulties I had in understanding how to work it! I really wish I had the opportunity to test it a few months earlier when I would have had many more sites to test it on. These would have included sites where hoards have been found in the past. Such sites would have been an ideal test for the frame coil in particular, which was designed to hunt for large objects at great depths. Julian found the detector very useful in locating wreckage from a crashed German bomber. With the Pulse 5 you have the advantage of being able to cover large areas of ground much quicker than when you are using conventional detectors. And the depth capability of the frame coil certainly puts the Pulse 5 ahead in the league.

The 10in. coil performed very well although I think it could be matched by certain other high performance machines on the market. I do think that

it was the easiest coil to handle as far as weight was concerned, and you don't really need two people when using it.

The 18in. "spider" coil was by far my favourite, even though it does make your arm ache after a while. Although it doesn't have the ability to detect objects as deep as the frame coil, it certainly picks up targets a couple of metres deeper than any conventional detector (digging may be a problem here, but it may be worth it!).

If I had one of these machines I probably wouldn't use it with any other coil, although I did find pinpointing difficult on small targets. This machine would be a valuable asset to the professional treasure hunter as the range of coils available means that it could be used in a variety of situations. I would love to spend some time hoard hunting with the 18in. coil.

The only disadvantages of the Pulse 5 was the awkward weight of the control box around one's neck (which made it pretty hard to dig targets) and its sensitivity to iron (despite the fact that it has a certain level of discrimination). But then you can't have everything, can you?

I'm sure that a lot of spectacular finds will be made with this machine. Well done Lorenz!

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