

# Field Test Report Garrett Ace 400i

Desi Dunne

**M**y introduction to Garrett was in 1979 when I upgraded my non discriminating Induction Balance machine for a Garrett Groundhog Coin Hunter VLF/TR. It was the first of many Garrett detectors I owned after that including: the ADS, ADS II, ADS 7, the Garrett SX, Freedom 1, 2 and 3 detectors (to which I still have their 'Sniper' coil) a GTA 350 and more recently, an Ace 250. I've also had a few pinpointers and am currently using the carrot! (Pro-Pointer AT).

I suppose you could say, I served an apprenticeship to Garrett! I'll go even further: I had the pleasure of meeting the legendary man himself, Charles Garrett at a Federation of Metal Detecting and Archaeological Clubs (FMDAC) meeting in Atlantic City, New Jersey in 1987 (of which I was a member).

So what is the new Ace 400i all about, and who is it aimed at?

It's a step up in performance from the Ace 250 and Euro Ace models with new and improved features found on their best selling mid-range AT Pro model.

Functions such as Iron Audio and an expanded meter ID range, frequency adjust and a larger coil, an 8.5 inch x 11 inch DD, could be considered new desirable features not found on other models at the same price point.

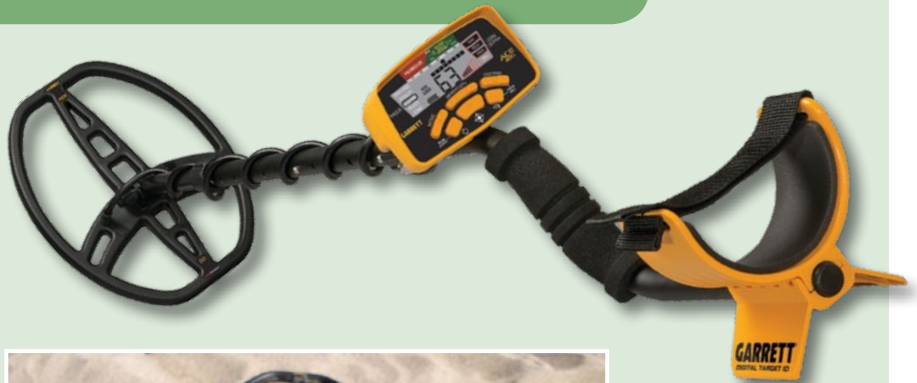
So it is safe to assume that it should attract some Ace 150 and 250 owners who are looking to trade-up without breaking the bank to get a more 'professional' detecting experience, and who know and trust the brand and want to stick with it. At the same time it should also attract new buyers who are drawn to its feature list and its very competitive low cost.

## Assembly

The test model was shipped with three 'free gifts':- Clear Sound Easy Stow headphones, an environmental cover and a coil cover.

Once assembled it is a firm build and easy to swing helped by the padded arm rest and must have arm strap. However, I would have preferred the coil cover to have been pre fitted as it proved a bit awkward to fit: that last 'inch' at the toe proved very resistant to snapping in.

It was my first experience with the also feature advertised, 'Cam Locks' and Garrett have a good video on their



The assembled Garrett Ace 400i (above), close-up of the control panel (left) and Ace 400i and Ace 250 coils (below).



YouTube website showing Assembly, and I would advise to watch it as I had a 'teeny weeny' problem with an over tightened cam lock!

The four AA Duracell batteries were pre-installed. The Instruction Manual is typical Garrett fare – in four languages and is pocket size. It is also nicely illustrated in its 27 pages of English instruction.

The supplied headphones are decent enough 'sound wise' but in my opinion don't stay on the head securely. However, I was able to stand up while the detector remained on the ground as the cord is part straight and part curled.

## New Features

- Iron Audio – this is taken from the successful AT Pro detector and can assist in a more accurate interpretation of 'iffy' iron signals and better recognition of rusty crown caps from beer bottles. The other important aspect of Iron Audio is it alters the mid-tone signal's range from TID 19-TID 60 (this can best be seen in the Owner's Manual on page 15). For it to work some discrimination needs

to be active so notch out the first iron pixel. When Off, targets below ID 19 are silent but when On targets below ID 19 are low tone (while targets above will be either mid tone or bell tone).

- Adjustable frequency – this can help eliminate interference from a number of sources but chiefly intended to avoid other detectors at a rally.
- Camlocks – for increased stem stability.
- Pulse-Width Modulation Audio – provides 'Sharper and more responsive audio'.
- US icons have been removed on the new target legend and this now shows an expanded ferrous range.

What this means is that an average rusty nail can put up TID values from 01-29 and even higher numbers for thick iron bolts – depending on which Mode you are using. These are:-

- |              |            |
|--------------|------------|
| 1. Zero Disc | 2. Jewelry |
| 3. Custom    | 4. Relics  |
| 5. Coins     |            |

The words 'Thin' and 'Thick' appear on the legend and that has to be an industry first!

Thin = TIDs between 50 to 60 and Thick = 90 and up (I presume they refer to coins).

## Beaches

Unusually for me, I took the Ace 400i for a beach test to start my familiarisation. I didn't spend much time bench testing except to see which targets drove the 'bell tone' (quite a number did), and an 'air test' that showed large coins were detectable at a foot. Smaller ones (5ps) responded at several inches and even beyond that depending on the sweep speed.

I visited three different beaches during the field tests and will say that the detector can and will handle dry sand and stony parts with aplomb; wet sand

it can take with care, and transition areas with extra care. In addition, all three beaches could be divided up into those aforementioned sections; different sensitivity settings and levels of discrimination had to be applied on each part.

The important thing here is I can't advise 'the best and most foolproof settings' because all three beaches demanded different settings across the various parts, so this dictates the Ace 400i might be 'search area dependent'.

NB. Using the Ace 400i across beach wet sand demands a much slower coil sweep speed compared to that of a grassed location. Having said that, it's also very important to use a slower than normal sweep speed over grassed surfaces to avoid triggering the 'bell tone' without due cause. There is no facility to ground balance the detector and if used with too high a sensitivity the bell tone can sound off with false alarms.

Walking towards the waves the detector was turned on and full sensitivity engaged. Eight (8) Sensitivity levels are available. Touching the coil on the wet sand produced a false signal from sensitivity level three and up. This can be expected and is normal with a single frequency detector (the Ace 400i operates at a 10kHz frequency).

Eventually deciding on Sensitivity 5 a full search began and I was rewarded with various trash aluminium targets and several coins. The signals were bell tone, and the iron audio checks were positive for non ferrous; pinpoints were strong and finds usually came up from between 2-5 inches.

The Ace 400i uses non VCO modulated pinpoint audio. In other words, audio doesn't increase in intensity the closer the coil gets to the target. It can be 'broad' so multi-push the pinpoint button to help 'shrink' the target area. I prefer VCO type pinpointing, but with the system the Ace uses it can help to determine the deeper coins because the return signals will be faint.

Two bell tones sounded almost on



Ace 400i at the beach (above), and first beach finds (below).



Army great coat button of an Irish Regiment.



top of each other, and digging revealed a coin and a non ferrous piece of scrap 6 inches apart; but it sounded like they were in the same spot. Another signal produced the thinnest 2p coin I have ever found. It was extremely water rolled and was as thin as a sheet of paper and 'flexed'!

The Ace 400i remained very stable as I walked in the sunshine parallel to the wave line at Sensitivity 6. The occasional bell tone sounded with the target ID showing '48' and sometimes '51 to 52' and these were false signals or ground signals from conductive salt pockets. More 48s showed than anything else and I soon trusted the detector and ignored them. Besides, they didn't return a pinpoint check so I was confident I wasn't missing something.

Despite being off season I gleaned enough information to form the opinion the Ace 400i is an effective beach hunter.

### Pasture

Taking the Ace 400i to one of my usual pasture test sites things improved. For starters there wasn't any interference and I searched an area with reasonably short grass. (Previously, at a farm site I did get some EMI from telephone masts and electric fences nearby).

I selected Relic with full sensitivity, and having walked around 30 paces without any false ground responses I stuck with that. Here again it became evident that the detector didn't like a fast pace. So I obliged to reduce my sweep rate down to a slower than normal pace.

The Garrett gave the occasional bell tone response and these were checked in all metal and pinpoint; these were again false signals. I didn't mind this because the Ace 250 did the same thing. It's down to a factory set ground balance point that occasionally gets challenged by the odd bit of increase in mineral levels from surrounding soil and user over set sensitivity.

Signals were heard and were dug and some iron came up despite the iron audio check facility; but I didn't mind as they were from the 'usual suspects' (round and holed pieces of ferrous metal).

The only coin of the afternoon gave a bell tone to begin with, and then another bell tone. The latter was slightly chopped at the end of the second sweep but in the main repeatable. Checking in iron audio the signal was slightly scratchy. As it was such a lean day for finds I dug and from around 8 inches recovered a halfpenny or possibly a token because it was lighter than your typical coin.

Another bell tone with an ID of 84 produced an army great coat button of an Irish Regiment. I had covered the area with different detectors for several years or more and had previously missed it.

From what I observed some iron signals can begin with a bell tone with an ID 47 and again on the second sweep, but the ID changes to 49, and a third bell tone then changes back to an iron tone. Check the signal in iron audio and it can become a bit scratchy; change sweep direction and again it reverts to the bell tone with a strong pinpoint return. Such signals usually turned out to be straight pieces of rusted steel.

Turn Iron Audio off in areas with heavy iron concentration to avoid unwanted signals.

Again, like the beach experience I was pleasantly surprised by the pasture experience using the Ace 400i

It therefore appears that different sweep speeds are required for beach and grassed land and, as I discovered later, it was happy used briskly on over ploughed soil.

### Ploughed and Stubble

I visited a stubble field on two occasions and two ploughed fields before they were seeded and, again the Ace 400i



Inland water finds.

Using the 400i in an inland water environment.





surpassed my expectations. To begin with I found that a quicker sweep was possible and I was startled by the number of tiny things it responded to (e.g. small buttons and other tiny items).

I was rather surprised by the findings and by the now quicker sweep speed that I could safely get away with. It was like the Ace 400i was perfectly suited to this loose rough soil and at times those areas flattened hard by tractor wheels.

I thought about why it should be this good and then remembered meeting some of the Garrett USA staff at a few UK and other European detecting rally events in the past few years (many of you will know Steve Moore). They obviously visited countries outside the US market and looked at why, where, and how those searchers looked for their chosen finds; also just what types of finds they looked for and what they wanted in a detector. In addition, if you look at Garrett's videos you will see some are filmed in areas similar to our own. They have therefore designed, tweaked and built the Ace series to be at home in those areas that we spend most of our time in as well.

One tiny caveat: a smaller diameter coil was easier to wend its way around stubble stalks and for that task I chose to use the 9 inch x 7 inch PROformance coil from an Ace 250.

## Inland Water

The Ace 400i was used in a stream in a gold bearing area that I had spotted

going into winter last year; however, the water levels were too high to conduct a search at that time. The water level was now much lower with loads of exposed shingle areas.

Using full sensitivity, with zero discrimination, the Garrett was perfectly stable to use; but I chickened out and reduced the sensitivity and notched out the first iron pixel. Some sharp signals proved to be large caps from whiskey bottles and other bits of wire from fencing as there's sheep farming in the area. The detector was perfectly quiet, stable, and a pleasure to use so in theory, it could be used for prospecting but a smaller coil might be more suitable (a 'sniping' 5 inch perhaps). If you have rivers or streams that give up coins then get your 'wellies' on because the Ace 400i will do a brilliant job here.

## Parks and Coinshooting

Most people will choose to buy and use an Ace 400i to coinshoot for lost 'modern' coins and jewellery. For this purpose it's perfectly suited and can be manually adjusted to handle the incessant junk therein and control the depth at which items are found. In clean areas the sensitivity can be increased without penalty,

but in heavy trash areas a reduced sensitivity can allow smoother performance.

Before embarking on park searching I finally got around to properly bench testing the detector as this provided a good enough indication of where targets both good and bad might produce their appropriate target IDs.

It was time well spent because I saw that most modern Euro coins produced IDs of 80, 81, 83 and 84.

Older pre-decimal coins such as Victorian pennies (and halfpennies) showed 84, 85 and 86, and in modern parks there should be some of those still left to be found.

The more highly desirable Victorian silver coins produced IDs from 91 to higher. Ring pulls showed 69 and 76, while square tabs showed 70-75. Cupro nickel coins showed: 63, 65, 71, 72 or 75. I was therefore primed to carry on with a bit of 'selective' coinshooting.

To be honest I was a bit nervous about modern park hunting with the 400i because I expected to be hearing the bell tone all of the time. Again I was pleasantly surprised at how quiet it was and when it did register on a coin it hit 'hard' and the extremely sharp signals of small decimal halfpennies astounded



Euro coins found.



Overlapping halfpenny coins.



Silver coins.





me – plus the sheer accuracy of the Target ID scale.

Amongst other detectors with highly accurate and reliable target ID capability, I found the older Teknetics Coin Computer 8500 and 9000, and more recently the Safari the best.

I found the depth indicator accurate on coins, but other objects might fool it.

To make the Ace 400i even more 'adaptable and user friendly' the discrimination could be customised 'on the fly' to make instant changes and to experiment with various 'notch' settings. One word of caution here: when making changes in any Preset program including Custom your settings will be erased if you turn the detector off. The instruction Manual says otherwise relating to 'Custom' but my test unit did not save settings on turn off.

My next venue was a park area that I hadn't been to in over 30 years, the last search there had also been with a Garrett detector and I dug loads of pre decimal coinage with some coins being only 2 inches deep thanks to bulging tree roots that prevented the coins sinking.

It was 7am the morning of the last Sunday of May, sunny and warm as I set about my business. With the head-

phones draped around my neck and the probe on vibrate only I was silent to the awakening world joined only by an occasional jogger running by.

Again, I fitted the smaller coil off the Ace 250 and set up a Custom program with just four 'accepted' blocks remaining. I only wanted to dig pre decimal coins, with Target IDs of 83 or higher. That is what almost transpired but there were a few surprises along the way.

Coins were deeper with the passage of time (30 years) and that was the first surprise and a few holes gave up more than one coin. In one hole two halfpennies emerged from a TID of 88/89 and I'm guessing the Ace saw the 'overlap' of one coin on top of another and produced two TIDs.

Another surprise recovery that showed TIDs of 86, 87, 90 and 91 eventually gave up six pennies, a sixpence, and a brass threepence. This was great! Coinshooting as it's supposed to be. Thank heavens for the 'carrot' as the coins were spread around and the hole kept signalling until empty. Thanks also to my Gator digger as shown in a photo. It allowed clean cuts, and with the probe and a small towel for soil, made for immaculate recoveries.

I was on the lookout for '90s', and sure enough the first 91 showed on the TID and from the 5 inch level a silver coin was recovered. Great "silver at last!" I thought.

But it wasn't. It was an aluminium token coin and with an eye glass I read: "CERES FAO ROME" above a left facing portrait of a woman. The reverse showed three figures and 'Universal declaration of Human Rights 1948-1973'.

An 86 TID produced another token, issued by a club in Co. Louth (I Googled it). It showed '2' and 'The home of good snooker' on the obverse and Whitworth Leisure Centre on the reverse. It was the deepest item found that morning from 7 inches (the inch scale on the Pro Pointer AT is handy for this).

I was rewarded with silver eventually, and the first one up showed a TID of 94 being a George V florin piece. The next was a George V shilling producing a TID of 89 followed by a couple of sixpences that produced 83 and higher.

Not a single piece of junk was dug compared with a few other public park areas where I was plagued by the dreaded screw cap as they rang in at 84, which is the same ID as the 1 euro and 50 cent coins (83-84).

Useful tools: the 'carrot' (Garrett Pro-Pointer AT), and Gator digger.



Whitworth Leisure Centre token.



Eight coins in one hole.



Declaration of human rights token.



Bulging tree roots that prevented the coins sinking.



Source of interference.



Assortment of general finds.



Coins were found to around 4 inches in amongst sinewy roots.

sweep speed as you work in and around different areas. Woods and rough plough can take the rapid sweeps we like, while grassed and modern park areas and wet sand are best approached with slower sweeps.

Having said all that, what you get for the money is a really tried and proven technology with a build quality to match. My older Ace 250 looks as good as new and is as tough as old boots. This one will undoubtedly be the same and should provide years of service.

The Garrett Ace 400i, summed up in a single word is 'honest'. That's exactly what you get from one of the most reliable and trusted names in the detecting game.

## Conclusion

Garrett's engineering team has done wonders here and raised the stakes in some considerable style on who failed to focus on what people really want. At the beginning of this report I asked: "Who is this detector aimed at?"

The answer is anyone who likes great no-fuss detecting on a budget.

A score of 10 can't be awarded due to the detector being prone to a bit of EMI. It happened several times during the testing at various locations.

One site had a three cable pylon system complete with glass domes; on and when passing underneath the detector went crazy. There was some blipping on

the edge of a cattle farm where electric fences were 'live' and was also close to two telephone towers; the only way to operate was at a much reduced sensitivity of just 2. Still, coins were found to around 4 inches in amongst sinewy roots.

The bell tone annoyed me from time to time. It 'rings' too often. I wish there was a way to turn it off. On the older Garrett ADS 7 model the Bell Tone feature rang only on copper and silver coins. That is very high up the conductive scale. With this model, it rings on a range of 39 conductivities, and some may not be coins. This is too many in my opinion.

Remember to monitor your coil

## Technical Specification

**Operating Modes:** 5 plus pinpoint

**Operating Frequency:** 10kHz

**Search Coil:** 22 x 28cm (8.5 x 11 inch) DD PROformance

**Headphone:** quarter inch

**Battery:** 4 AA (supplied initially but alkaline recommended)

**Weight:** 1.32kg (2.9lb)

**Warranty:** Two year limited parts/labour  
Regton Ltd are the Sole Importer for Garrett Detectors in UK.

Order & Enquiry Hotline 0121-359 2379  
[www.regton.com](http://www.regton.com)

**Check out my YouTube Channel:**

DesDunne1 to see some video footage from the testing of the machine. TH