field test | Makro Racer 2
Search Ed'

MAKRO
METAL DETECTORS

RACER 2

Makro Racer 2

Operating Principle: VLF induction balance
Operating Frequency: 14kHz
Standard Search Coil : 11x7"DD
Weight: 3lbs
Battery Type: 4 x AA rechargeable
Warranty: 2 year
Price: £525.95

It only seems five minutes ago that I tested the Macro Racer for **The Searcher** magazine. Although impressed with the build quality, there were a few things I noticed that could be improved, making a good detector into something great. So the question I was asking myself at the beginning of this test was, "Did they take notice of all my feed back?"

First impressions
The Racer 2 fits together easily and the build quality is extremely high. The package includes covers for the control box and underarm battery housing,

and a Makro backpack for storing the machine. **Fig 1**

My unit was supplied with rechargeable batteries plus charger and a second smaller coil. I also received Koss headphones, fitted with a straight lead to a 1/8" jack plug and a ¼" adapter. My test unit wasn't supplied with the optional bluetooth headphones, so these are not included in this field test.

Controls
It's a very simple machine to operate. At the rear of the armrest, next to the headphone socket, is a rotary control that switches on the detector and adjusts the volume. **Fig 2** Then all other adjustments are made in the menu, which is operated by a four-button keypad. The final control is a trigger switch, which is used to Pinpoint when squeezed towards the handle, and to set the Ground Balance when pushed forward. As with the previous Racer there's a flashlight built into the back of the control pod, which is illuminated when you apply the Pinpoint and press the Up key on the keypad. **Fig 3**

Menu system
Fig 4 Pressing the Up and Down buttons allows you to navigate through Modes; Gain, ID Filter, Notch Filter, Iron Audio, Threshold (All Metal mode), ISAT (All Metal mode), Tracking (All Metal mode), Audio Tone, Vibration, Backlight and FD/Save. The trigger, Right and Left buttons are used to change the settings. One of the controls no longer in the menu (as it was in the original Racer) is Frequency Shift. To use Frequency Shift (Noise Cancel) you now pull back

Figure 4

Figure 1

Figure 2

Figure 3

the finger Pinpoint trigger and use the left/right arrow buttons to choose the quietest of five channels.

Modes

The first menu item is MODE, and using the right/left arrow buttons you can choose between ALL METAL, TWO TONE, THREE TONE, BEACH and a new mode called DEEP. These are your factory programs that can be used unchanged, or modified and saved as a custom program, overwriting the factory settings.

All Metal mode is by far the deepest, running a single-tone on targets over a threshold. Although not a discriminating mode audibly, it still displays a target identity number (TID) for most targets allowing visual target discrimination.

Two-Tone mode is a deep discrimination mode with low-tones for iron targets, and higher tones for targets with higher numbers.

Three-Tone mode is an easy to use coin-hunting program. Low tones for iron, mid-tone for medium conductors like hammered coins, and high tone for high conductive non-ferrous targets like Victorian pennies, large silver coins and crotal bells.

Beach mode is a two-tone program designed to handle conductive ground like wet sandy beaches.

Deep mode is designed for artefact hunters and is the deepest of all the audio discrimination modes. This is a two-tone mode with an extremely low speed for extra depth. It's very important to slowdown your sweep-speed when using *Deep*.

Mode settings

GAIN is where you control the noise and depth of the detector. Higher the setting, the deeper it will detect. However, it's important not to turn the gain too high if it results in excessive ground and electromagnetic interference (EMI). This can/will mask good target responses.

ID FILTER

This is your progressive Discrimination control, allowing you to silence trash with a target ID number (TID) below the selected setting. So if you set the detector with an ID filter setting of 40 (for example), all targets with conductivity TID below that setting will be silenced.

NOTCH FILTER

This menu item allows you to discriminate individual or groups of TIDs separate to the ID FILTER. To perform a custom discrimination; select NOTCH FILTER in the menu, then use the left/right arrow button to move across the 0-99 discrimination graph at the top of the screen, select a flashing TID segment and use to trigger to change its state (discriminate black or clear accept).

Note: Notch filter will not affect areas already discriminated using the ID FILTER. To do so lower the ID FILTER below the area needing adjustment, and then use the notch filter.

IRON AUDIO

Iron Audio is a new feature, but will be familiar to most experienced detectorists. It controls the volume of low-tone iron responses. There are 10 settings from audio off to 10, full iron audio. This is a great control to have. Many machines working with All-Metal multi-tones are frustrating without it. Iron can sound louder than the higher tones from good targets without it. This is a big step forward for this machine over its predecessor.

TONE BREAK

Tone break controls the break point between tones in all the audio discriminating modes. Select the feature and you'll see labels for the tone-breaks that can be adjusted (FE, GOLD NON-FE and NON-FE), displayed below the TID panel. You can toggle between these tone labels using the trigger, and adjust the break point using the arrows. This is another *NEW* feature, increasing the versatility of this machine.

TRESHOLD and ISAT

These are used in the ALL METAL mode only. Threshold controls the audio hum in All-Metal mode. ISAT controls the recovery rate of the Threshold as it's blanked by targets and grounds mineralisation. A low steady Threshold will give the best results when using All-Metal.

TRACKING

Although this menu item is in the All-Metal section of the MENU, it actually affects all modes. To set the Ground Balance tracking, select ALL METAL mode and scroll down to TRACKING. Then use the right/left button to change the setting from '0' to '1' (off to on). Tracking will then stay on in all modes until the setting is switched in the menu, or is switched off. Tracking 'on' cannot be a saved setting.

AUDIO TONE

Adjusts the tones of the discrimination modes, and the Threshold tone in ALL-Metal.

This is very useful as everyone's hearing is different. I personally prefer higher tones for good targets, which stand out better from iron low tones. To adjust each tone in a mode select AUDIO TONE, and the adjustable tones within the mode will appear as labels below the TID panel. Select a tone by squeezing the trigger, and adjust the pitch using the left/right arrows. At last I'm happy with the tones of a Macro detector!

Vibration menu setting allows you to adjust the vibration from off to a white finger/RSI setting (running joke over both field tests).

BACKLIGHT

Adjusts the backlight intensity (zero switches it off) 1 to 5 will put the backlight into a short illumination cycle, coming on while you're navigating the menu screens or using the trigger to Ground Balance and Pinpoint etc.

The C1 to C5 settings are for a continuous backlight. The higher the number of either group setting, the brighter the screen.

FD/SAVE

Unlike the original Racer, the RACER 2 has a save feature … hurray!

To save simply select the FD/Save and you'll see SA in the screen, then pull the trigger back to save. It will now start in the last saved mode.

If you want to reset to factory default, repeat the above procedure but use the left arrow to change the displayed SA to FD before squeezing the trigger.

One of the annoying things transferred from the earlier models is the way this detector reverts after five seconds (or so) to the top of the menu. I still find that while adjusting detector settings and listening to the changed responses, it would reset unnoticed to MODE, and I'd continue changing modes instead of the intended setting.

Macro – please let my selected menu variable remain where I put it in future! If I'm adjusting a setting, I will usually be returning to it often. Having it reset to modes is annoying and unnecessary!

Field test

The first field of note was early on in the test process. I was still using factory

programs with little or no adjustments. I would normally 'up' the gain, and then back it up until it became stable. The best of all the factory modes was three-tone, which I could run with higher gain while remaining very stable and quiet.

The field I chose was one I'd detected for a few years. It was reasonably clear of modern trash but had a lot of iron nails in the better areas. Hammered and Roman coins have been found in the darker patches of soil dotted around the field, and even an occasional Celtic coin in-between. Unfortunately the field is minimally tilled and targets tend to be those missed from previous searches. This is great for field-testing but not for long term detecting, unless it gets deep ploughed in the future.

I started where coins had been found in previous years. I soon started to dig non-ferrous targets, mainly small lead blobs, but after about ten minutes the first Roman coin was recovered. I carried on for another hour finding a total of four Roman coins and a small knee brooch. **Fig 5**

I was really impressed how the Racer 2 could be used straight out of the box in a factory program, and get a better than expected results on a difficult site.

After a few weeks tinkering I finally settled on a custom program.

Based on three-tone I adjusted the tones so they sounded perfect in my favourite headphones.

GAIN: 80 (or as high as stability determined)
ID FILTER: 3
IRON AUDIO: 3
TONE BREAK: FE 15, GOLD/NON-FE 40
AUDIO TONE: FE10, GOLD/NON-FE 50, NON-FE 700
VIBRATION: 00 (off)

The important bits above are the TONE BREAK and AUDIO TONE settings,

giving most hammered coins a middle tone that's easy to recognise. The high tone is for your large copper items like crotal bells. I tried the other (deeper) modes, but I kept coming back to three-tones, but I'm sure with more experience I'd change to two-tone or deep.

During the bulk of this test my best fields weren't available, so I found myself searching new fields where I didn't really know what to expect. I was desperate to find a hammered coin, and was several weeks into a hammy drought, where you seem to walk around or side-step them, leaving them for your detecting partner.

My drought ended on a new field I was investigating. About an hour into the dig, where very little was being found other than shredded cans ('canslaw' to quote Mackenzie Crook), I received a sweet medium toned target response. Digging 4-5" I saw a jagged piece of grey metal. On closer inspection I could see it was a hammered Elizabeth penny … they all count, right? **Fig 6**

Happy to have found a hammered, I turned to walk to the car. No more than ten metres into the trek back I got another medium tone target response. Boot scraping the ground revealed a familiar grey disc, and after a spit and

quick rub I could see it was a short cross penny. **Fig 7**

Conclusion
The improvements to the RACER 2 are impressive. Not only can we save our settings, they've increased the control over the performance. This machine has become more complicated, but if you're not into the technical stuff (not a fiddler), then the factory programs will still give you good results.

On previous Makro machines I've moaned about the audio through American style headphones using transducer style speakers. I love my comfy headphones, and to have the sound of each tone indistinguishable from the others is a serious issue. The Racer 2 has finally banished this problem with controls that adjusts the audio tones to my hearing. I'm still slightly perturbed; was it just me that had problems with the audio on the original Racer? I'm starting to think it's my hearing, as I've never seen anyone else complaining about the audio quality on forums and social media.

I found it very hard to find anything I didn't like about this detector, menu reset excepted. It's a great machine now; go out and buy one! ●

Makro Racer 2 test results

(Scores out of ten based on price category)

Ergonomics (weight/balance): 9
Simplicity/User Friendliness: 8
Build quality: 10
Weather resistance: 9
Discrimination Performance: 9
Overall detection Performance: 10
Value for money (£525.95): 10

The Searcher Rating
🏃🏃🏃🏃🏃🏃🏃🏃🏃🏃

Figure 5

Figure 6

Figure 7

Competition: Win Makro Racer 2 worth £525.95

Our thanks go to Makro for supplying this machine, worth £525.95, to give away. For your chance to win just fill in the coupon below (no photocopies allowed unless you are a current subscriber and your number is required) and send it to us at the **Makro Racer 2 Competition**, **the searcher**, 17 Down Road, Merrow, Guildford, Surrey, GU1 2PX. Closing date for all entries by 31 October together with your name, address and contact number. Good luck!

WIN

Name: ....

Address: ....

....Postcode:................

Telephone number: ....

Subscriber # (if required): ....

App subscribers ONLY simply either do a 'screen grab' of the page, print it out and post the coupon OR attach the screen grab to an email and send it to info@thesearcher.co.uk.

Competition Rules: This competition is open to all readers except employees of **the searcher** (which includes all regular contributors and their families) and our printers and distributors: Warners Group PLC. Only one entry is permitted per person. Entries will be accepted by POST only addressed to: Makro Racer 2 Competition, **the searcher**, 17 Down Road, Merrow, Guildford, Surrey. GU1 2PX. App subscribers ONLY by email or post. To be valid, entries need to be received on or before 31 October. The draw will take place soon after and the winners will be notified by telephone (if possible).There is no cash or other alternative to the prizes stated and the prizes is not transferable and no part or parts of the prize may be substituted for other benefits, items or additions. The judges decision is final and binding. No correspondence will be entered into. No responsibility can be accepted for entries lost, delayed or damaged in the post.