

EV Cobalt Microphones

EV has released a new range of dynamic microphones primarily for live use. Konrad Skirlis consults his periodic table.

EV are no newcomer to the design and manufacture of mics for live and studio use. Virtually every experienced engineer has at least a couple of EV mics at his or her disposal. The Cobalt mics are their new cost effective range that consists of four models aimed predominantly at the live market. The new range takes its inspiration from the metal of the same name, and the inspiration extends to the colour scheme... a deep (cobalt) blue. The Co 9 is designed as the range's premium vocal mic; the Co 7 is also a vocal mic but has characteristics well-suited to miking live acoustic instruments; the Co 5 is the cheapest of the vocal mics, has a more natural frequency balance with less proximity effect; while, finally, the Co 4 is built for punishment across a number of miking requirements including instrumentation.

The Cobalt range uses a Neodymium magnet, a material which has proven its mettle (metal?) in the highly efficient EV N/DYM series and Shure Beta mic range. All four mics in the Cobalt range are dynamic with a stated frequency response of 50Hz to 18kHz. They're all described as cardioid mics with a balanced low impedance of 600Ω. The Cobalt housing utilises the ever-popular die-caste zinc, coated with a durable polyurethane paint. All Cobalt mics are supplied in a gig bag and



include a black stand adaptor.

Co 9 – Vocal Performer

The Co 9 is the top mic in the range and is aimed primarily at vocal use. Compared to the likes of the Co 7 and Co 5, the Co 9 has the flattest frequency response. This is not to say it will give you the best sound characteristics for all PA systems, but more on this later. To get an idea of the Co 9's vocal characteristics, I took it to the studio, and tested side by side with the Co 7 on the spoken word (male). I found the Co 9 to be quite natural and remarkably capable of producing an unobtrusive sound with ample clarity.

The Co 9 probably won't enjoy huge success as a studio mic, but it certainly made me think about the usefulness of a good dynamic in the studio environment.

Co 7 – Vocals with a Lift

When compared to the Co 9 for dialogue use, the Co 7 sounded quite similar. But it was on live vocals that the Co 7 set itself apart. Its response is not as flat as the Co 9 but inherent frequency emphases offers greater vocal intelligibility – it colours your sound but in an 'exciting' way.

Co 5 – Talk Can Be Cheap

The Co 5 is the third vocal mic in the Cobalt range and, unlike the Co 9 or Co 7, offers an on/off switch. The words 'on/off switch' no doubt makes many live sound engineers twitch a little. One accidental touch of the switch by an inexperienced singer and the deathly silence can spell disaster – nothing, except a performer

Proximity Effect & Frequency Response

The range of bass boost from proximity effect varies considerably across all mics in the Cobalt range. Starting with the Co 9, bass roll-off is gradual from 300Hz down to -4dB at 100Hz before falling dramatically to -12dB at 50Hz. Close proximity responses shows a 14dB boost between 100Hz to 150Hz before gradually returning to a flat frequency response at 1kHz. The Co 4 demonstrates an identical bass proximity boost. Additionally, those two mics share the same cardioid response allowing them to maximise gain before feedback when used with a single foldback monitor to the rear. Meanwhile, the Co 7 and Co 5 have a hypercardioid-style

lobe at the 180 degree position, so you're better off using two foldback wedges placed at a 45 degree angle to the rear of each mic [see Konrad's Live Mixing Tutorial in AudioTechnology Issue 3 for more]. The bass proximity effect of the Co 7 is far more subtle. For example, the difference in frequency boost in the 100Hz to 3kHz range between close proximity response and a standard response is around 2dB, if that – there's a lot more uniformity there. Overall, the higher gain before feedback of the Co 7 will prove to be a popular feature for live applications. For frequencies between 2kHz to 10kHz there is a 6dB to 9dB boost above unity gain. When

used in a live situation on vocals, the high gain before feedback will allow you to squeeze out those all-important extra dBs. However, because of the lobe to the mic's rear, feedback elimination is set back by at least 15dB, so best use that two foldback monitor configuration I mentioned earlier. In comparison, the Co 5 (which also has a lobe in the rear pattern) offers a higher close proximity boost of around 16dB at 150Hz. However, in practice, I found this mic to be solid and controlled for close-up bass cabinet and vocal recordings.



looking like a possum caught in the headlights of a car! I know that this experience has happened to most of us on at least one occasion. However, for more speaker-friendly corporate-style presentations, the on/off switch may be a welcome feature in the hands of a savvy user. It can free up the services of the sound person to work other visual aids such as projectors and video players during an audio-visual presentation. This is the reality of a 'set and forget' vocal PA operation in a corporate-style environment. A good balance of low, mid and high frequency bands with a commanding control over proximity effect are further technical reasons to encourage the use of the Cobalt Co 5. (With a variety of speakers and users in any one public presentation, there will also be a variety of 'voice to mic' distances and therefore a wide range of proximity effect outcomes. A microphone that has better than average control over proximity effect issues will be better appreciated under such circumstances.) So the Co 5 may not necessarily be the microphone of choice for live music vocal use, it certainly has its benefits for the spoken word in a presentation or corporate style occasion.

Co 4 – Instrumentalist

The Co 4 is predominantly an instrument microphone that can double up on vocal duties. Its frequency response is very similar to the Co 9, except with less sensitivity involved (2.2 mV/Pascal @ 1.0 kHz compared to the Co 9's 3.2 mV/PA). It is suitable for acoustic and electric instruments alike. In terms of appearance, the Co 4 is the most striking of the Cobalt range and feels the most

rugged. For any production that's looking for a versatile microphone for predominantly instrument and secondly vocal use, the Cobalt Co 4 makes for a wise and cost-effective choice.

Uses for Cobalt

As mentioned, the Co 9 offers the flattest frequency response and there's plenty of situations where this is an advantage – ie. where a natural frequency balance is important, both live and in the studio.

Meanwhile, the extended gain before feedback of the Co 7 with an emphasis on frequencies in the 300Hz to 1kHz range makes it a natural for live vocal use. (Although, I also used the Co 9 and Co 7 on guitar cabs with good results, favouring the extra brightness of the Co 7.) Unless your PA system is top notch and always operated in favourable acoustic circumstances, I feel the Co 7 will probably bring out the best in a vocal sound more consistently, due to its extra gain before feedback benefits.

The Co 5 will suffice where budget is a concern but will be chosen ahead of the others for use on low frequency sound sources such as kick drum and bass guitar.

I can't find much fault with the Co 4 – it does a good job across a variety of instruments and produces a warm all-round sound with less bite than most dynamic instrument mics. I particularly liked it on drum toms and snare for a more natural and solid low/mid sound.

Cobalt Rocks?

Mic manufacturers have been enviously eyeing the SM58/57 market for years. And, sure, the Cobalt range gives those potential customers another option, but EV have a range here that stands up on its own. EV certainly don't need to prove themselves in the live market, their products have been happily taking a pounding for years, and the Cobalt range look, ready to withstand most punishment as well.

All up, it's an attractive vocal/instrument mic list. Each mic in the Cobalt range has its benefits, yet (as you'd expect) no one mic does everything needed for all applications. And, while they're more obviously pitched at the live scene, the Co 9 and Co 4, in particular, will more than happily serve you well in the studio. As far as my favourite mic, on a price/performance basis, it would probably be the Co 7, but they're all very capable performers. And, at these prices, it's worth giving your gig a touch of Cobalt.



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Price

• Co 9: \$229; Co 7: \$179; Co 5: \$99; Co 4: \$199