

The Magico M2

MARTIN COLLOMS GETS TO GRIPS WITH THIS SLIM FLOORSTANDING SPEAKER FROM THE CALIFORNIAN MASTERS OF ALL THINGS METAL, AND FINDS THAT – THOUGH PLENTY OF WORK IS REQUIRED TO MAKE IT SING – WHEN YOU GET IT RIGHT THE RESULTS ARE MAGICAL

Loudspeaker design and development is all about pushing boundaries, but how hard do you push? Do electroacoustic engineers and loudspeaker designers seek to improve on previous work? Of course they do, and will pursue their art with varying degrees of success. Just what they achieve depends on many factors, not least their commitment to numerous evolving technological innovations but also to consistency in manufacture, that vital component of quality control that will make the endeavour worthwhile in the first place. A greatly refined prototype is not enough: the manufacturer must also closely maintain the physical properties of materials used and master the arts of precision assembly and accurate calibration such that the production examples very closely approach the signed-off exemplar.

When you already make great loudspeakers how do you improve on your art? When all those design, materials, build and manufacturing choices are finally realised as a satisfactory working model, who is to be the arbiter of this mythic perfected sound quality, to micro-tune those prototypes towards an imagined goal of perfection for the finished product?

It's mythical as well as mystic: there can be no such thing as perfection in sound engineering, and we remain some distance from the creation of a fully convincing sense of reality generated by a sound reproducing system. And this is not just to do with the loudspeakers, it is the whole chain including all that goes into making – and reproducing – a recording. We widely enjoy live music, and certainly we are aware of the substantial quality gap between live and reproduced sound.

Aware of audio prior art, from these experiences we endeavour to make valid judgments of quality for our connected sound systems, in fact for the whole recording and reproducing chain. From the artist to our listening set-up, it's a combination of appreciating accuracy, naturalness, immediacy, involvement, sound stage dimension and focus, not to omit dynamics rhythm and timing, also how well our concentration is captured and held.

That done, it is nevertheless important to distance ourselves from the practicalities, the gritty details of the audio machinery, to suspend belief and simply enjoy the music.

There is no specific need to upgrade a good audio system. If kept in good condition, driver and enclosure screws kept tight, frames well aligned, cables dressed and tidy, spikes well locked, speaker terminals set nice and firm, such a set-up may run for years with only this minimal attention. Upgrading is a kind of bug which can be caught, and become

a hobby, for some even an obsession. There is fun to be had in that, but it's the music that matters, not audio technology, nor proscribed ideas of reproduced sound quality per se.

Yet, despite a century of technical development for audio reproduction, especially for the loudspeaker (which arguably remains the weakest link), a wealth of competing ideas and technologies are applied to the art of loudspeaker engineering. Yes, art, because loudspeakers remain significantly imperfect: defining, controlling and then balancing those imperfections to an optimised musical whole, inevitably judged by human beings, is the objective of the design process.

Certainly, machines and computers are extremely helpful, both for the control of material properties, and for calculations of the behaviour of structures and connected electromechanical systems which have appropriately advantageous vibratory and acoustical properties. But ultimately the human judgement of sound quality which overrides all this: someone must take responsibility for the completion of a loudspeaker design, where the positives and the negatives have been weighed in the balance, where the hundreds of decisions made concerning myriad technological details, all assessed in concert, finally arrive at a finely tuned and engineered subjective quality focus.

As this crux is beyond measurement, the process must be undertaken by ear, and by definition must use recorded sounds and music – quite some responsibility. Recordings are a largely unknown quantity and must themselves be judged for quality from many aspects, including a natural tonal balance, detail, imaging, transparency, rhythm, and more, if the loudspeaker under development relying on these qualities is not to drift away from the goal