

point at which it comes into effect. In all, there are three choices of turnover frequency and depth, which makes for a large number of combinations. These options might be useful in unfavourable acoustic conditions with reflective walls, or perhaps an acoustically reflective uncarpeted floor.

Of course, the more variables a designer introduces into a design, the harder it is to review! One is tempted to mess around until one finds the sound one prefers, and perhaps review that. This is unfair to the designs that lack such variables, yet if the 'adjustable' speaker's variations are ignored, its potential may never be realised.

Finely finished in real veneer, this compact speaker employs a total of three drive units, mounted in a vertical line. In the central position is a 25mm soft fabric dome tweeter, mounted in a short phase-correcting horn. Its displacement behind the baffle plane brings it virtually into time alignment with the two miniature bass/midrange units. These have shallow flared Bextrene cones of 95mm effective diameter, built on 110mm pressed steel frames. All the drivers are from KEF.



The system is bass-reflex loaded by a multi-duct port, 50mm diameter. The ducts are formed by a packing of drinking straws, a technique used by Meridian and by Celef/Proac for some years now. The straws make the airflow more laminar and more symmetric, especially at higher powers, thus helping to reduce audible distortion.

The crossovers are electronic, using high quality components and selected integrated circuits, while the power amplifiers are special versions of the Meridian 'separates', tailored in thermal dissipation, voltage and current capacity, to suit the different drivers. The rear metal plate forms the heatsink for the amplifiers and should not be placed in a position where it would receive excessive heat, for example in direct sunlight or in close proximity to a domestic fire or radiator.

A feature of active speaker designs is their ability to take control of the low-frequency behaviour of the system. Meridian have long exploited this aspect, and the M20 low-frequency response has been tailored and shaped to provide an unusual bass extension for the size. Effectively, the bass alignment becomes a high order function, between fifth and sixth order. A consequence is the very high rate of rolloff below the 'corner' frequency, and some critics have claimed that this is an audible coloration effect.

In use, the input connection may be set for internally 'balanced' or 'unbalanced' operation. For extended listening the speaker can be permanently switched on, or alternatively, put in the 'auto-sensor' standby mode. When the music begins, the speaker becomes operational almost immediately, and remains so for some time after the programme has ended.

### Lab report

The reference response at 1m illustrated some interesting points. While the response was basically flat, the curve did show some prominence in the 650Hz to 1.3kHz octave, this region averaging 2dB above the rest. The grille was quite well behaved, as the dotted response for the 'grille-off' condition indicated.

In the bass, this speaker was almost flat to 45Hz, impressive under anechoic conditions, but probably too healthy for normal room use. Indeed, the -6dB cutoff point of 38Hz was very good as a test result, but did not conform to the ideal response shape for domestic applications.

Reference to the computer-averaged room response provided good evidence of the way the speaker was likely to sound. The midrange lift now appeared as a mildly rising trend through the

## Meridian M20

Successor to the long established M2, this new model has much in common with its predecessor, not least its very slim proportions. All Meridian loudspeakers are active designs, and indeed the company is the leading British exponent of the *genre*.

With the M20, the power amplifiers are contained within the speaker enclosure. All that is required is a line level signal of around 1V maximum, fed down an interconnect cable to the RCA phono socket on the back panel. In theory, if one's music source was a CD player fitted with a volume control, no other equipment would be needed and the usual preamplifier or control unit could be eliminated. For normal use a matching Meridian preamp would be required, although the speaker is also compatible with virtually any preamplifier bar the Counterpoint SA7, which is not really suited to driving long cable runs.

The M20 comes with substantial matching stands, which do contribute to the overall performance. As is usual with Meridian, the finish is excellent, and the complete systems are quite unobtrusive in the room. If thought desirable, the systems may be located on a shelf (though with a loss in sound quality due to sympathetic shelf resonance) or backed against the wall (resulting in some increase in coloration due to boundary cancellation in the midrange, and a further loss of stereo depth). An array of microswitches on the back provides for a variety of acoustic characteristics, with the option of a response oriented either for 'free space' or 'shelf'. In addition, a custom network can be added to suit particular situations.

The switches control the overall frequency balance, and these are quite versatile. As well as 'laboratory' or 'flat' response, Meridian offer a 'normal' setting and this was the one chosen for the measurements and most of the auditioning. 'Normal' selects the manufacturer's preferred setting for a degree of treble cut and the

midrange, while above 1kHz the output was depressed by an excessive 4dB. At low frequencies the output was clearly excessive, rising 10dB above the mean level at 50Hz and still to powerful in the 40 and 30Hz bands. One can envisage this speaker as potentially capable of plotting flat to 20Hz, with improved power handling as well as greater uniformity.

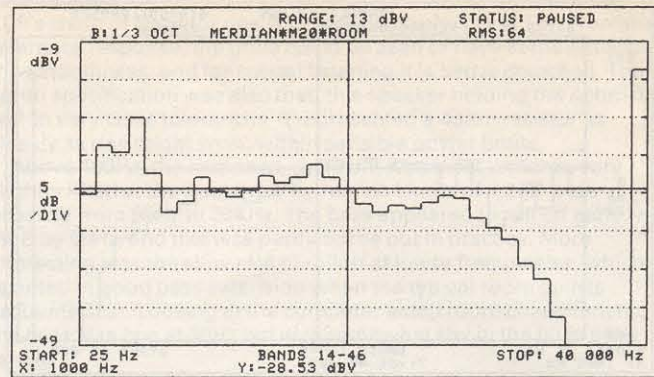
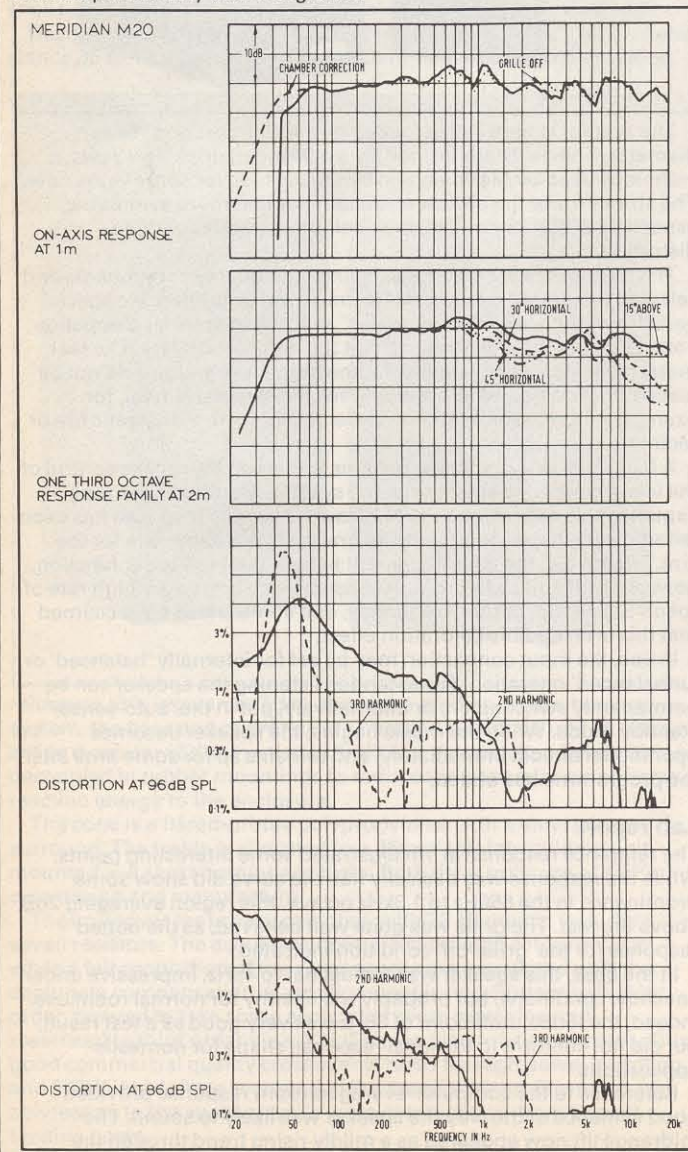
Measured at 2m, with the aid of some response smoothing, the main trends were confirmed. At 15deg above axis, the loss of power in the 2kHz region was increased, and so the system should be angled to face the listener directly in order to obtain the most beneficial output in the presence range. Very good control was shown for the lateral off-axis output, and indeed this was so good that one might have expected the designer to engineer an axial depression in the 600Hz to 1.3kHz range, rather than the uplift actually observed.

At 86dB sound pressure level, second harmonic distortion held to moderate levels above 200Hz, rising to 1% by 100Hz and 3% at 40Hz, which was not really significant. Third harmonic averaged 0.3% in the midrange. At the higher 96dB level, the second harmonic was noticeably poorer, reading 1.5% at 200Hz and peaking at 6%, 60Hz. Third harmonic was little changed, except below 100Hz. At 48Hz, it peaked at a clearly audible 18%, referred to the fundamental. The system will produce decent sound levels of up to 104dBA in the room, but this would depend on the bass power levels of the chosen programme.

### Sound quality

Carefully auditioned in a 'blind' test sequence, this speaker proved disappointing in that its overall score was only marginally above the average, this established by other models at around the £300 per pair price level. First impressions were of a dull, rather lifeless sound – with slow bass and a midrange lacking body, yet also sounding shut in.

It would seem that the designer had imposed his view of a sweetened 'classical' sound on the system. Some 'cuppy' coloration could be heard in the mid, while neither bass nor the treble seemed particularly well integrated.



Computer-averaged in-room response at 2m

Stereo focus was judged as moderately good, with a fair representation of detail as well as depth and ambience. The air and 'sparkle' present in some recordings was depressed, while the treble also showed a trace of grain and sibilance. Following the blind listening sessions, the speakers were got out again and auditioned in comparison with other speakers, using a Mission Cyrus Two PSX amplifier. In my listening room at least, the M20s were too dim and the sound improved when they were switched to flat. The treble quality was less smooth, but this was more than compensated for by the additional clarity and life imparted to the system. The speaker became light and airy, tonally less correct perhaps, but escaping from that 'shut in' mid-dominant quality we had heard before. Stereo seemed better focused and was reproduced with more depth. The slightly 'odd' bass remained, but could be ameliorated by keeping the systems well away from walls. The 'shelf' switch setting was also tried but appeared to degrade the sound regardless of the speaker location.

### Conclusion

While the new M20 clearly reflected much manufacturing experience in the production of attractive, compact, active speaker systems, this model was ultimately to prove disappointing. The lifelike drama and dynamics of real music were constrained, while the bass was distinctly 'un-piston like' and marred by a low bass excess. The mid was found tonally unbalanced, and the manufacturer's recommended settings too dim. Its low frequency power handling and distortion were unexceptional for the money. Putting a final value judgement on the M20 depends in part on just how much you value the inbuilt amplifiers.

Having said all this, the M20 does have good points which reflect a potential for improvement, and we hope this happens. As it stands, we feel it must be described as an 'average plus' speaker, offering extended bass from its compact and tidy dimensions.