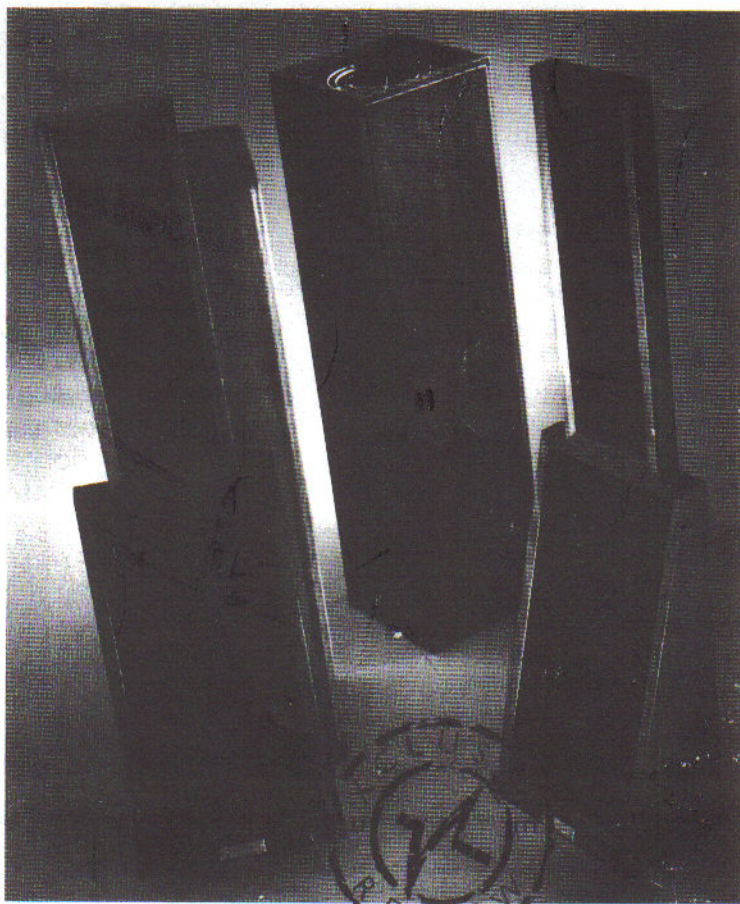


The original Quad electrostatic speaker remains a classic despite many attempts at modification. How does the latest (and most dramatic) version sound?

by MARTIN COLLOMS

QUAD ECSTATIC



A longterm fan of the original Quad electrostatic speaker, ex-orchestral musician, studio recording console operator, gaming machine designer and now classical disc retailer, Michael Furmedge has created a new physical presentation for the old Quad. In this endeavour he has been ably assisted by Colin Walker (ex-CJ Walker Turntables). The Quadrastic promises an improved performance together with the opportunity to rebuild old Quads to the new specification if yours are in good condition.

A key element of what is in reality a new speaker design is the addition of a tall, quarter-wave loaded subwoofer, designed by Walker and married to the free-standing electrostatic rebuild by a simple two-way active crossover set at 125Hz. Manufacturing details for the crossover have yet to be finalised, while other good crossovers could be substituted such as those from Naim, Audio Research and Krell.

One of the bass panels of the original Quad speaker is discarded and the remaining one is assembled, without the hessian covers, into the angled floor section, or base, of the new hardwood frame. Placed above, in a vertical formation, is the smaller mid-treble electrostatic panel, also mounted in a strong hardwood

frame, creating a tower 1.4 metres high. Floor spikes are provided for anti-vibration coupling and these may also be adjusted to focus that critical 'sweet spot' for the treble aiming at listener ear level. Getting this right is like opening a thin curtain in front of a vocalist. Quad specified voltage protection is fitted to extend the life of the panels.

In the listening room, the arrangement required two sets of stereo power amps, and the low frequency channel had a gain control to help balance the system, compensating for both the room and perhaps a different choice of bass amplifiers.

Inside the 1.2m high woofer systems is a very high flux 220mm moving coil driver, custom built by Richard Allan Loudspeakers, which has a cast alloy frame as well as a polymer cone. With a low 'Q' value its damping control in the quarter wave loading is high, and the good efficiency, estimated at 93dB/W helps provide a speed and dynamic quality compatible with the excellent performance of the electrostatic on these points.

That sensitivity also gives the bass section good headroom for adjustment; there is more than enough bass on tap should you need it.

Placed in free space, and avoiding a position too close (less than 0.8m) from the rear wall to avoid damaging

One of the bass panels of the original Quad speaker is discarded and the remaining one is assembled into the angled floor section

acoustic reflections, the electrostats are directed inwards to face the listener. Typically, the woofer towers are placed further back, nearer the wall and to the side, so as not to obstruct the rear energy from the open back electrostats.

Price is somewhat dependent on finish and whether or not an old Quad speaker is available in good condition. Built from new the cost of the complete system with crossover is set at around £4800, and if using an existing Quad £2400 is estimated (although I'm not sure about export pricing). Michael Furmedge will handle the sales directly with home demonstrations by appointment. The subwoofers are also available with crossover for about £1600 a pair. As regards appearance, the full system does tend to dominate a room arrangement, and perhaps the finish of the speakers could also be improved to project a less '1950s' look.

SOUND QUALITY

For these tests I used a Krell KPS20i CD player directly driving a set of Meridian 605 monoblocks. Cabling was Siltech and van den Hul. Unfortunately, when first delivered, the bass panels were damaged — the result of an earlier loan to a reckless customer — and Michael had to make a second trip with new panels.

The bass was good and its solid construction gave this system a genuinely big speaker sound, up with world class high power designs

These worked fine. After experimenting with familiar programme, the bass level setting, phase, spiking (using Tiptoes under the woofers, though spikes will be provided in future) and placement, a good balance was achieved and the evaluation got underway.

Reference to the Quad 63 was interesting. In this new arrangement the superior clarity of the rebuild was obvious, especially of the mid and treble registers. Although judged slightly dull overall, the treble was essentially grainless, fast, subtle and delicate, with pure sibilants. In fact, this is just what the theoreticians predict for a well-designed, ultra-low-mass electrostatic element. The midrange was very natural, and excelled on real music, simply miked accurate recordings of acoustic instruments and, of course, real people. Again the smoothness and purity of the sound were in accord with the electrostatic legend, and was unmistakable.

The bass didn't let the side down — it may not have been quite as open and agile as a full-range open panel, but it gave substance and authority to the system allowing high sound levels to be achieved right into the deep bass without strain on the electrostatic section. The bass was good and its solid construction gave this system a genuinely big speaker sound, up with world class high power designs.

Stereo images are well presented with quite good depth, this to some degree dependant on the choice and quality of the active crossover. This area is being investigated. During the review an SE version of the crossover was delivered which showed the improvement in clarity and depth which this fine system deserves.

CONCLUSION

The Quadratic performed very well on acoustic jazz, folk, country, and classical programmes. Hand on heart, I have to say it was less well equipped for rock material, which benefits from more grip, dynamic authority and precise timing.

The price isn't too expensive for a four tower speaker system, allowing it to partner fairly modest electronics. There's also a high end potential confirming the inherent quality of the Quad electrostatic drive units and their inbuilt matching transformer systems.

How high you go depends on your choice of crossover and the matching amplifiers. I reached £15,000 and still didn't feel that the speakers were a significant limiting factor!

The Quadratic is a worthwhile concept; it's now up to Michael Furnedge to deliver product to his customers as required. ↗

QUADRATIC SPEAKER

LAB REPORT

Given its interim state of early production development, some brief checks were made on the system. The Quad section emerged well from the experience and it was fun getting reacquainted, refreshing the memory about the surprisingly flat response [Fig 1] for 2m and over, on the best axis.

Depending on room conditions the bass will extend to 33Hz at good power and the output of the sub was respectably even from 40Hz to 120Hz, as required. High damping keeps the 48Hz reflex component of the enclosure resonance under tight control.

The 5dB/division waterfall presentation of

decay [Fig 4] confirmed the intrinsic performance of the original Quad. The clear rear section and even decay confirmed the linear phase nature and fast transient response of this legendary loudspeaker recipe.

As regards the off-axis responses [Fig 2], the rather directional nature of the Quad also remains; in the vertical plane there was only a few degrees of latitude. At 30° off-axis horizontally (dashed) the result was quite good while at 45° the errors were substantial. As regards directionality they are best suited to one critical listener [Fig 2].

The load presented by the Quad Electrostatic is a known amplifier-buster and has been used for bench testing for decades, albeit in simulated form, (2µF in parallel with 8 ohms).

And this is why [Fig 3]: shown in the solid line, the Electrostatic heads below 3 ohms at 20Hz, peaks at a harmless 45 ohms at 200Hz, offers a kind, 8 ohm mid range and then it begins to drive down to the 2 ohm line (mainly capacitance) by 20kHz. Some amplifiers aren't fully stable on such a load and prefer a series ohm or two (10W

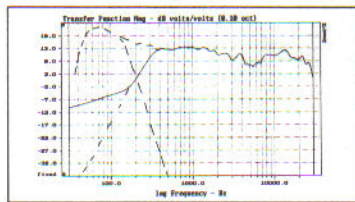


Fig 1. Quadratic: frequency response on axis at 1m with LF summation (note 5dB/div scaling)

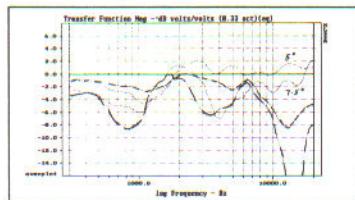


Fig 2. Quadratic: response family at 2m, axial referenced to normal line (solid line); 5°, 7.5° vertical off axis (dotted line); 30° lateral (short dash); 45° lateral (long dash)

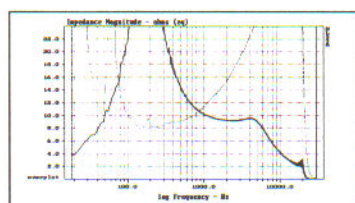


Fig 3. Quadratic: load impedance versus frequency

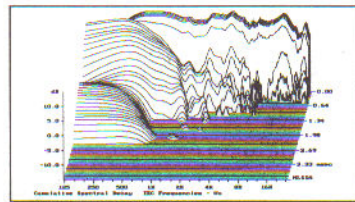


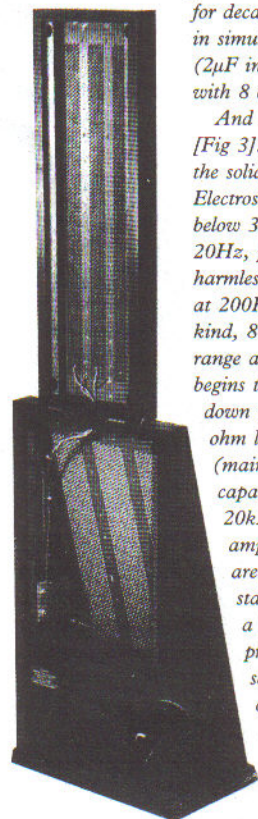
Fig 4. Quadratic: MLSSA waterfall display of energy decay, 25dB dynamic range, 0.2ms rise time

rating) to keep them happy.

Given a 2-3m listening distance, the system sensitivity was a surprisingly high 89dB/W (effective) in fact a few dB more than the Quad 63. Good results

on typical programme will be possible on good amplifiers of 40W per channel and upwards. Well specified 30W tube amplifiers may also apply here even if there will a mild rolloff in the high treble.

Test results	Quadratic
Dimensions (hwd, mm)	
Electrostatic	1400x380x230
Sub	1220x310x310
Recommended amplifier power per channel	25-100W
Recommended placement free space (electrostatics) near wall (subs)	
Frequency response within 3dB (2m)	100Hz - 18kHz
Bass frequency rolloff (-6dB) at 1m	40Hz
Bass frequency extension (typical in room)	33Hz
Voltage sensitivity (ref 2.83V) at 1m	89dB/W
Approximate maximum sound level (pair at 2m)	104dBA
Impedance minimum/typical/ease of drive	2/6 ohms/average
Typical price per pair (inc VAT)	£4800



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