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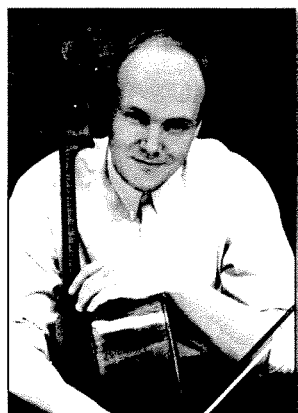
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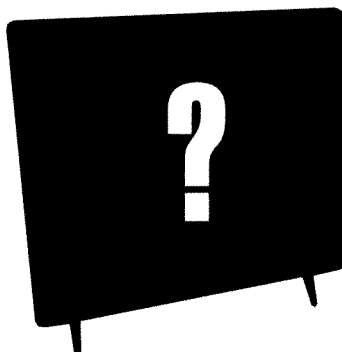
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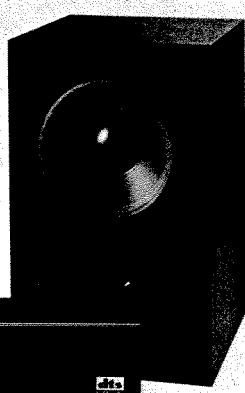
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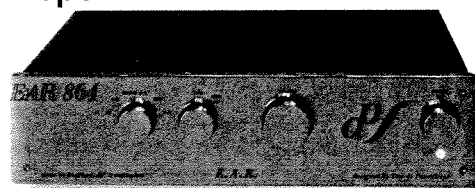
Surrounded

Martin Logan electrostatics
Energy's Take Five speakers
Denon DTS decoder
News and opinion



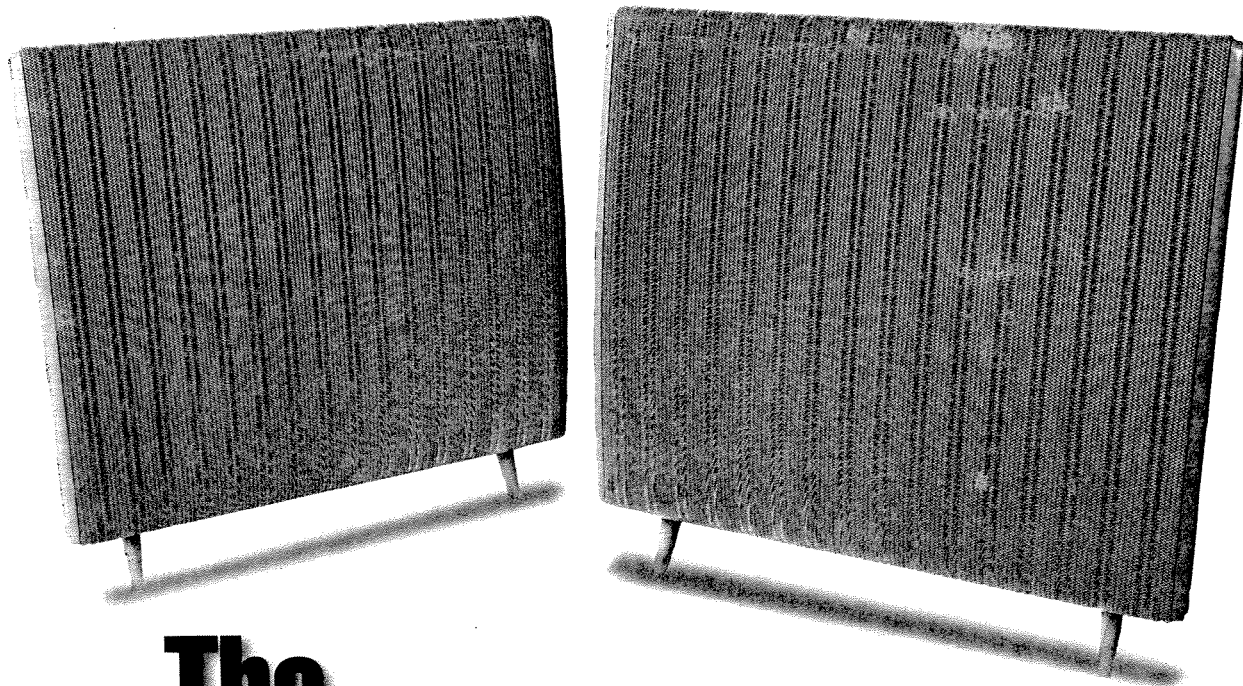
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Affordable valves
Viking 1 and EAR pre-amps
The Hi-Fi Show report
Digital Radio
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speakers
Index for 1999



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The Greatest

If the title doesn't say it all, then let us remind you. The original Quad ESL. That display of genius which makes Peter Walker something of an audio deity. The most cherished hi-fi product ever. The cause of a thousand heartbreaks when its demise was announced. Call it the Quad 57 if you're innumerate, the Quad 55 if you're fastidious and did your homework, or simply call it the Quad Electrostatic Loudspeaker if you drink your whisky neat and respect the designer's wishes. Or ESL for short. Whatever you name it, the Quad speaker system was the first commercially and sonically successful full-range electrostatic loudspeaker and — despite its inherent shortcomings — for many it remains the best.

Think about those shortcomings and how they never managed to prevent the ESL from garnering such praise and devotion. What were they? Restricted maximum SPLs, and bass extension. But those with taste and a sense of proportion never minded. After all, this was a speaker designed for a market which consisted solely — however politically incorrect this

*We're concluding our millennial
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what we believe to be the
greatest product of all time*

by **KEN KESSLER**

sounds — of well-heeled, refined gentlemen. Invariably, they listened to classical music, were not headbangers and were bound by the source components of the 1950s. And, should they listen in massive rooms, or crave extra wallop down below, they merely did what any intelligent music lover would do: they emulated Alastair Robertson-Aikman of SME and used four pairs, one pair in each corner. Simple.

Peter Walker's Acoustical Manufacturing Company was nearing the completion of its second decade by the time the ESL arrived.



Peter J. Walker, OBE

The company already had an enviable reputation for its amplifiers — both pro and domestic — and even had a classy speaker in the form of a successful ribbon-hybrid, the horn-loaded Corner Ribbon Loudspeaker of 1949. But, following the appearance of a book in the USA in 1954, describing in scientific terms the superiority of the electrostatic transducer, Walker was inspired to develop an ESL of his own. Moreover, the appearance in 1949 of DuPont's Mylar finally meant that there was a material ideally suited to the requirements of an ideal electrostatic diaphragm.

Three articles appeared in *Wireless World* in 1955, before the speaker was ready for production. But it finally appeared on the cover of the 1956 *Hi-Fi Yearbook*: the very first volume of that never-forgotten industry bible. Back in 1994, I was fortunate enough to talk with Peter, and I asked him about the speaker's origins.

KK: *Why did you move from the original ribbon speaker to what became the original Quad electrostatic?*

PW: 'From a theoretical point of

view, an electrostatic is an ideal way to make a loudspeaker — it matches the air perfectly and it's all predictable, as ordinary loudspeakers are rather variable. It has some problems which are rather difficult, mainly due to the stretching of the diaphragm. It mustn't shrink and that sort of thing. Very high voltages, 10,000 volts make it difficult but it's an ideal — I think most loudspeaker manufacturers have looked at it and said, "What a lovely way to make a speaker but it's not very practical". And a lot of manufacturers have tried it, too, and most of them have said, "This is not profitable. Get back to putting loudspeakers in boxes and sell 'em, lad!" [Laughs.]

'I've always thought, right from, oh, 1945 I suppose or thereabouts that an electrostatic would be a nice way of doing it. But it's in the back of your mind, how can you do it? And it had a lot of problems. But the ribbon was a very good way of getting very good high-frequency response — excellent.

'The ribbon was a hybrid; the ribbon itself was very good from 2000 cycles upwards and the bass unit was very good up to 500 cycles. Not very good in the middle, which I can admit now, but there you are. During the ribbon speaker's life we sold less than a thousand units. It wasn't pairs, it was all mono; there wasn't any stereo then. And they were £95 a time, which in present-day money is quite a lot.

'Around the same time that the LP was introduced, 1954, 1955, the electrostatic was introduced — I think we demonstrated it in 1955, about that time.'

KK: How many years had you been working on it?

PW: 'Well, you don't work on it for years and years. You have a little go and get rid of a few problems, and then you forget that and get on

with other things that you can make and it stays in the back of your mind and you think, "Oh, we could get over that — what about dust and these high voltages?". And you think of another idea and go on a little bit more. And then you forget it again for a long time; you're not working every day on the same thing. It's like the ESL 63 loudspeaker. It took us 18 years to develop but it wasn't 18 years every day. [Laughs.] Not at all.'

KK: Were there any other, earlier electrostatics with which yours had to bear comparison?

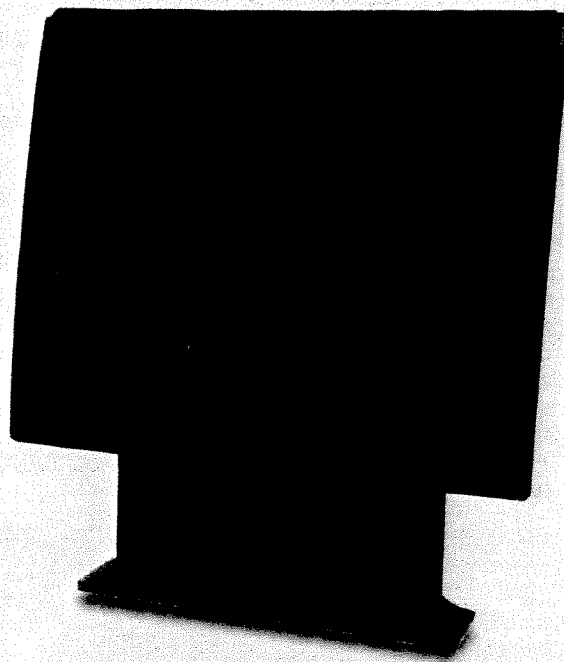
PW: 'There was certainly the Janzen in the US. There was one before the war which was called the Primastatic, I think which was just a tweeter. Several German electrostatics were made but they really didn't make a big market at all. None [of the Janzens] came to England unless you went over with a suitcase. The original ESL just competed against other loudspeakers, and it wasn't as loud, so people who wanted to shake the windows didn't buy a Quad electrostatic speaker.'

KK: Was it an immediate hit? Did the audio journalists of the time recognize it as revolutionary?

PW: 'Some of them did and some of them didn't. It was quite an oddball sort of thing. "What's this funny looking thing?" They thought it looked like a room heater. In fact, we'd have people stand by them to feel the warmth!'

KK: Was it easier to launch in the USA?

PW: 'No. We had a very, very good review in America, a man came over and he said it was most wonderful but it's not loud, it doesn't shake the windows. But it gives the most natural reproduction by a wide margin more than we've ever heard before. And that got us some orders from America, some



Quad Electrostatic, with subwoofer by Gradient

orders came in. But it wasn't very good with American high-powered amplifiers, which would just bust 'em, spark 'em to bits.

'Americans had larger rooms, their whole basements given over to hi-fi and it had to be pretty loud. And the poor old ESL wouldn't do that. But a number of people liked it very much.

'And when stereo came along, you had to have two of 'em. A bit big for that but it worked very well. In fact, after we made 400 of them we modified the directivity because of stereo. The directivity pattern was made for mono — not quite the same as stereo. Serial number 409 I think it was.'

KK: How did you change it? Driver shape?

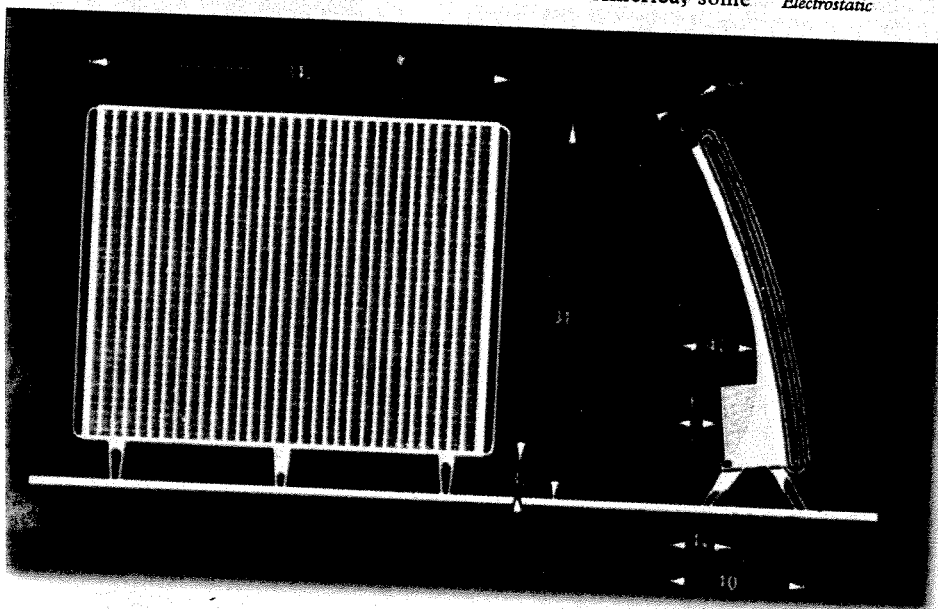
PW: 'No, it was just the electrical distribution between the elements. No other modifications as far as I know.'

KK: What would you have changed about the original electrostatic?

PW: [Laughs.] 'Ooh, dreadful question. Well, I couldn't have made it better at the time. You take a silly old man of 78 and ask him what would he have done in 1950. Well, if I had my present experience I'd have made something like the '63, which I made to improve over the first one in the first place. In a lot of respects, anyway.

'What was difficult about the first one? Well, it had what was in effect a woofer and a tweeter and getting those two exactly level and matching in response, that wasn't easy because they'd vary slightly — variation in the gap, variation in the tension of the diaphragm would upset it a bit, you see. One wanted to avoid that. Can't think of anything else. Would

Quad's working drawings for the Electrostatic

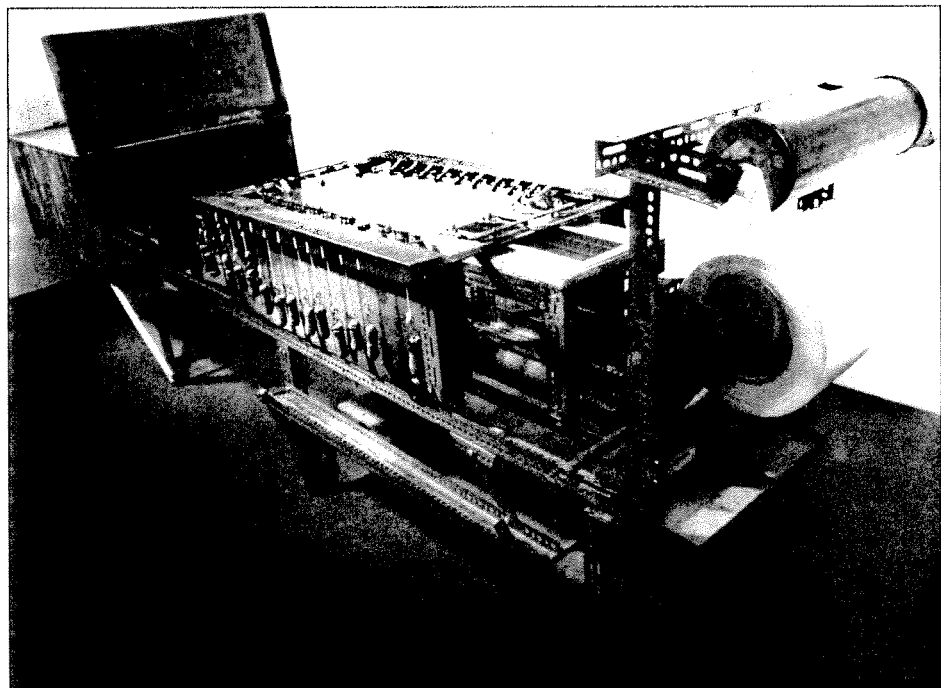


I have made it bigger? Well, then it would have upset a whole lot of people who wanted a small speaker. Would I have made it smaller? No, because then you wouldn't have enough bass. It was roughly the right size.

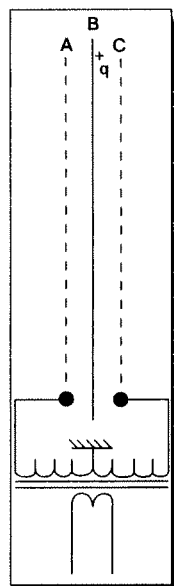
'It cost £52 including purchase tax when it came out — what the price would be now, goodness only knows. But there was always a waiting list for them. We allocated them to dealers, and the amplifiers at that time, and they were allowed six a month or three a month, what have you. You didn't ask a dealer how many he wanted. You told him what he could have. Didn't have any sales people: didn't need them. [Laughs.] Wonderful situation!'

Quite clearly, the original Quad ESL was tough to manufacture despite the inherent simplicity of a stretched thin film diaphragm suspended between perforated conductive stator panels. In the Quad, the distance between the stator and the diaphragm was 0.5 to 2mm, which led to it being efficient enough to work with the low-power amps of the day. The diaphragm was coated with a slightly electrically conductive coating, the coating charged to several thousand volts above the stator panels. Feeding an audio signal to both stators caused the diaphragm to be pushed and pulled towards one of the stators by electrostatic force. Just why the ESL achieved bandwidth and frequency response wide enough to satisfy hi-fi criteria, along with admirably quick and controlled transient response, was down to its diaphragm. It was very light, and hence fast, and uniformly driven, so it moved in a linear fashion. It was and is the

Electrostatic principle (right) and (below) Quad's corner ribbon, which preceded the ESL



The famous jig used to make ESL panels (above), with hanging weights to tension the Mylar film and (right) a Quad assembly worker



antithesis of a cone driver, ever troubled by its own mass and cone break-up.

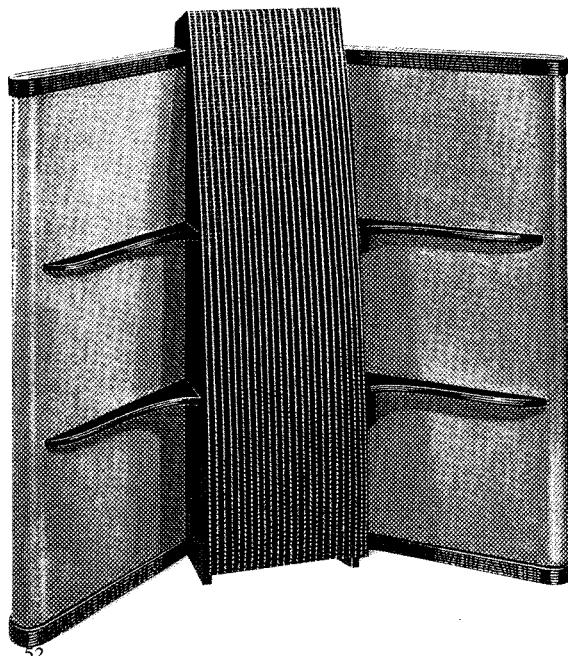
Listening to the original today merely confirms what many suspected: despite its limitations, the Quad ESL delivers some of the most natural, open-sounding mid-band (especially on vocals) you're ever likely to hear. It is a speaker which addresses certain needs, appealing to those who want their ears caressed, not battered. The speaker disappears into the room, leaving you with nothing but... music. Hook up a pair to some small single-ended triode amps, a mint pair of Quad IIs or — better still — a Radford MA15, and you'll just shake your head in wonder at the novelties of current manufacture. It is as stubbornly superior to modern designs in aesthetic, cultural and intellectual terms as a Leica M4 camera is to a polycarbonate SLR, as a 1950 Patek Philippe Calatrava is to a digital watch, as a vintage Vuitton trunk is to a nylon rucksack.

Many tens of thousands of pairs were sold by the time the speaker went out of production in 1982, the replacement ESL 63 never quite earning the affection of its predecessor. Devotees nursed the older Quads, warm in the security of back-up unrivalled in the industry and ensured of a steady supply of replacement panels should they be needed. But then, in the 1980s, Quad entered the Dark Ages, changed ownership a couple of times, was treated like a dotty old aunt and eventually was dismantled in a most shameful manner — not unlike the way the British have



treated their most cherished automotive firms. But the company had too many fans to die despite the destructiveness of its caretakers. Among the fans are, not least, one Stan Curtis, MD of the new Quad, and who is responsible for reviving the ESL 63 in three revised forms, as well as the valve electronics.

But where does all of this leave us in 2000, those who firmly believe the original to be the greatest speaker of all time? A handful of companies might claim that they can keep your ESL alive, but we at *HFN/RR* have experience of only two which we can recommend. First, there's our old buddy Stuart Perry, who revived Beam Echo. Without doubt, though, the keeper of the flame is the company which was committed enough in 1995 to buy the jigs from Quad and acquire the knowledge to repair the ESL. And, like the saviours of Rolls-Royce, Rover, the Mini, the MG and Bentley, they're



QUAD ODDITIES

German. But there's another solution I'd like to propose. Given the newfound health of Quad and the revived integrity after years of neglect and disdain, it strikes me as obvious that the Stan Curtis and his new team have the wherewithal, the talent and certainly the attitude needed to put it back into production.

There: I've said it. Aside from the changes needed to assure CE approval, reintroducing the Quad ESL is not only feasible, it is also commercially sane and sensible. How so? Because it would continue to sell forever, even with realistic pricing of, say, £3000 per pair.

Think about it: a 'brand-new' old Quad, with a company to support it, with decent terminals and benefiting from, perhaps, a modern power supply. Same aesthetics, same sound, no worries about servicing. I'd place an order right now, with deposit. And so would thousands of others, every year until Judgement Day.

And why am I so confident? Because the Quad ESL is, after all, the greatest hi-fi design of all time. +

● Stuart Perry and his colleague Andrew King have spent their spare time over the last three years refining all aspects of refurbishing the Quad ESLs and are now confident that they can restore even the poorest examples to 'as new' acoustic performance. (We've heard their systems and can vouch for the results). Visit www.quaddoctors.co.uk. For those not yet connected to the internet, a printed copy of the web site is available from Stuart by contacting: Quad Doctors, Christchurch Business Centre, Grange Road, Christchurch, Dorset BH23 4JD. Tel: 01425 276099.

For those who live further north, help is also at hand courtesy of Classique Sounds, whose expert Ron Best offers a similar service quality. Contact Classique Sounds at 61 Aylestone Drive, Aylestone, Leicester LE2 8QE, Tel. 0116 2835821.

Getting your Quads rebuilt in Germany can prove very expensive, and there may be a waiting list. Contact: QUAD Musikwiedergabe GmbH, Rheinstraße 24, D-56068 Koblenz, Germany. Tel 0049 261 38824. Fax 0049 261 38172; e-mail: quad.ger@t-online.de. Those of a DIY turn of mind should visit the website of pioneering US Quad enthusiast Sheldon Stokes (the man who proved that you could make Mylar conductive with graphite) on www.clarkson.edu/~stokesd/quad.html.

BECAUSE of its popularity, its longevity and the awe and devotion it inspired, the Quad acquired a following over the years which couldn't leave it alone. Modifications, accessories, dedicated peripheral: there are so many that I doubt if one could compile a complete list. But any study of the Quad ESL should at least mention the most famous, starting with the Quad HQD.

This legendary, nay, scary system was probably the supreme application: Mark Levinson (above right) took two pairs of ESLs, stacked each pair vertically, and complemented them with a Decca ribbon tweeter and a massive Hartley woofer. Naturally, it was an American effort, which, for a while, was deemed the ultimate speaker available. In Europe, in the late 1950s, Braun had applied its unique aesthetic to the ESL with a new housing and called it the LE1 (above), an ultra-rarity of which only 500 are said to have been made. More recently, Gradient produced the Quad-approved SW55 subwoofer, a neat 520x230x150mm (hwd) design which fitted under the ESL, thus forming a handsome stand. So, too, did EAR make a dedicated add-on, a direct-driving valve amplifier fitted at the

EAR factory and conceived to extract the maximum from an ESL. Meanwhile, back in the USA, where audiophiles think that Quads should be raised off the floor and/or tilted toward the listener, a stand or two has appeared, the most famous being the Arcici.

This brief run-down only scrapes the surface, and I know there are more; specifically, I seem to recall an American effort in the 1980s which completely rebuilt and re-housed the ESL, and I'm certain that Arcici wasn't the lone stand-maker. But when push comes to shove, the bottom line is this: the best Quad ESL – no, make that the definitive Quad ESL – is the one heard *au naturel*, just as it left the factory and Peter Walker's fertile imagination.

Quad ESL circuit (below) showing the complex crossover, built into the power supply, that lies behind the apparent simplicity of the panel. The theoretical equivalent circuit (right) indicates what the driving amplifier 'sees'

