

# EX-STATIC!



**No 'speaker special would be complete without a listen to what many audiophiles regard as the very best transducer ever made - Quad's original ESL57. When he heard it was available from Classique Sounds in rebuilt form - complete with One Thing Audio's brand new OTEC panels and stands - David Price just couldn't say no...**

**A**s every loudspeaker appraisal is invariably personal, let me begin with an anecdote. I heard a (somewhat well campaigned) pair of original ESL57s some years back, and was bowled over. Although I could hear a lot that wasn't quite right, I could also hear much that was spot bloody on – if you'll pardon my French! I was left intrigued, but ultimately unfulfilled. I came away from the experience thinking that I'd never heard classical – or indeed electronic – music sound so good, but rock music was an altogether far too cerebral occasion.

The trouble was that it proved a defining audio experience. Properly done electrostatics – and the Quads are nothing if not this – throw a million watt spotlight on what's wrong with moving coil 'speakers. In this respect they're unpleasantly vengeful – it's as if they're saying, 'Okay, if you don't like me then I'm not going to let you love another!' They refocus your finely aligned auditory powers to hear everything that's going wrong with your pair of boomy, quacky, phase-incoherent

boxes sitting either side of your fireplace. Previously unheard bass cone break-up, tweeter spit, cabinet resonance and port chuffing suddenly sound ten times louder, and now you can barely hear the music – damn!

And the Quads are quite right, of course. With the exception of a handful of moving coil loudspeakers, some of which you can read about on p24, there are few conventional boxes that come anywhere close to what real music sounds like. The sad fact is that we condition ourselves to what we're used to hearing, and begin to fool ourselves into thinking that it sounds like real music.

The bitterest pill, however, is that Quad's ESL57s – for all their inspired genius – are also far from perfect. Electrostatics have lightning-fast transient response, making for a brilliantly natural and airy sound, but all the associated electronics create their own problems. Their input step-up transformer is a big thing to put

bang in the path of the signal (they often have variable performance at the frequency extremes and hysteretic distortion in the midband). The design is also highly capacitive, which screws most solid state amps – with their low damping factor and high negative feedback – into knots. 'Statics are also prone to arcing at high levels, which means the panel starts to fry itself. In practice, this has meant the ESL57 is simply not capable of high volume levels, or indeed of faithfully conveying truly wide dynamic range. The ultra fast low and medium level transients fool you into thinking this is a brilliant rock loudspeaker, but crank up the

volume and it sits on transients and starts to compress things.

They're also prima donnas when it comes to positioning. In an ideal world, there would be just as

much space behind the '57 as in front of it. They should never be put flat against a wall.

As far as amplifier matching is





concerned, a medium-power, push-pull valve amp is ideal. Tubes don't mind the nasty capacitive load of an electrostatic, and don't get too upset by their vicious impedance curve which swings from as low as 1 0.8ohms to over 60ohms! When serviced by Quad, 'clamp' circuits are fitted which prevent input voltages exceeding the 33volts which Quad quote as a maximum before damage occurs. These are necessary with big transistor amps, but moderately powered valve amp users would do well to remove them for superior sound.



### MOD YOUR QUADS

Haden Boardman talks you through five serious upgrades to stock ESL 57s...

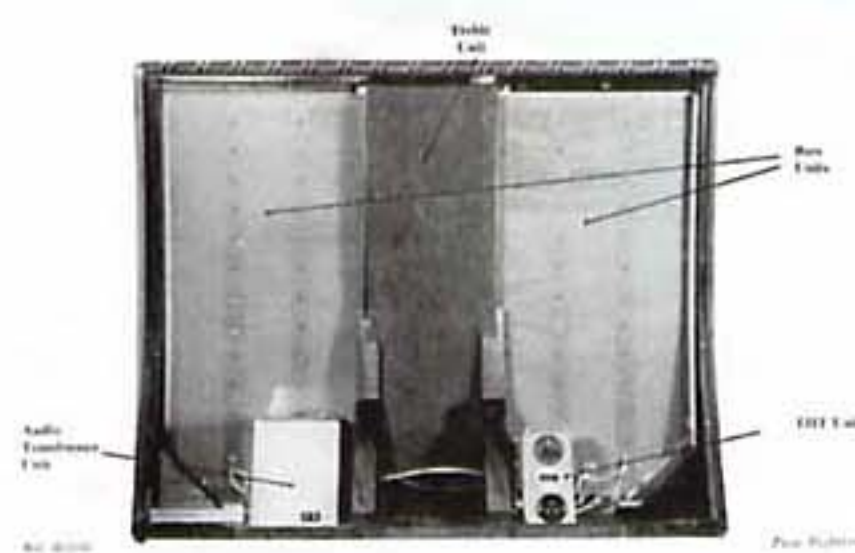
[1] get them off the floor with 18-24" stands  
[2] located inside the back of the ESL panels is a covering of 'sack-cloth', and the tweeter panel has an even thicker chunk of felt - remove them! **WARNING:** the very high voltages inside these speakers can kill - only open them up when the power has been switched off for several hours!

[3] buy an additional pair and stack them. Extra efficiency, higher SPLs and better bass are the rewards. This requires a properly rigid frame - most people build one which screws into the sides of the '57s in place of the wooden end cheeks.

[4] re-frame them - the original wooden carcass is not solid, and major gains can be had by building a stiffer frame.

[5] use a supertweeter to improve treble. Adding a Decca-Kelly or an ATD ribbon can bring more spaciousness. Wire in a single 6dB/octave high pass filter - most people prefer a 2uF cap, although there's invariably room for experiment.

### ELECTROSTATIC THEORY



An electrostatic comprises a moving Mylar film diaphragm set between two fixed, perforated, electrodes through which sound can pass. The film receives a fixed charge, whilst the electrodes receive the varying music signal, stepped up to a very high voltage. As power from the amplifier energises the fixed plates, the statically charged film vibrates in sympathy under electrostatic forces, pushing sound-waves through the perforated electrodes.

### BORN AGAIN

Back in 1999, we tested a rebuilt pair of Quad ESL57s from One Thing Audio. Since then, the company has introduced its very own OTEC electrostatic treble panel, designed to be substituted in place of the Quad part. The loudspeakers you see before you boast this very panel (at £150 each), plus reconditioned bass panels (at £130 a pop), plus One Thing's own rebuilt audio transformers (£45 each) and rectifier board (£50), rebuilt electronics and rewiring, plus the 'Rupert' loudspeaker stands at £175. The total cost as a package is £1000 per pair plus your own loudspeakers of course - and it takes between six and eight weeks for the work to be done. One Thing also does a standard Quad ESL 57 service for

£375, which does not include any work on the panels; it takes between two and three weeks.

The OTEC treble panel is the obvious point of interest. Screw or solder-tag terminations have been abandoned in favour of quality leads soldered directly to the electrodes, with due attention paid to the elimination of any shunt capacitance. Panel matching is within 0.5 dB. The panel is compatible, and therefore interchangeable, with any original Quad panel but the OTEC's tonal signature is such that changing in pairs is highly desirable. Unlike the original Quad panel, where the wooden frame is little more than a support for the dust cover, the OTEC frame is an integral part of its design and on no account should the panel be used with its frame or dust

covers removed. The curiously named 'Rupert' loudspeaker stands are an excellent design, bringing the Quads just far enough off the floor.

### SOUND QUALITY

Dynamite. I can happily report that this re-panelled and rebuilt pair of Quad electrostatics is one of the very best loudspeakers I've heard in my life. Regular readers will know I am still in awe of the Yamaha NS1000Ms (which use ultra-light and stiff Beryllium domes - instead of electrostatic panels - to give incredible transparency), and the Quads haven't quite managed to wean me off. However, I can confidently say that in some ways they surpass the Yamahas, and in most others they're frighteningly close. Now, this is the first pair of loudspeakers I've come across about which this can be said - and believe me I've been looking long and hard!

If you've heard an old pair of ESL 57s, you'll remember them as being very clean and crisp, but somewhat veiled in the treble, soft in the bass and dynamically limited. Your most powerful impression will doubtless be of the disappointingly low volume levels they're capable of.

Forget all this - it simply doesn't apply with these. Positioned correctly and properly aspirated by a decent valve amplifier and a serious source (preferably vinyl, due to its higher resolution than CD), you'll hear a gobsmackingly large and powerful sound with masses in reserve. There's a bass response so deep and rumbling that you'll wonder why anyone needed a subwoofer, a nerve-tingling midband which will have you taking a sharp intake of breath, and a deliciously finely etched treble response with wonderful filigree detailing. Above all is a massively expansive and open sound with incredible cohesion and smoothness from bottom to top.

I started my listening with The Crusaders' 'Street Life', complete with that sublime vocal performance from Randy Crawford. I've been using this as a review tool a lot of late, and was beginning to tire of it despite the song's brilliance. The Quads made it sound shiny and new - freshly minted and straight out of the bag! In the first couple of bars, the stunning, glass-clear midband imparted the sound of the instruments themselves, rather than any combination of plastic or doped paper drive units. The Fender Rhodes keyboards sounded precisely thus, the hi-hat cymbals were disarmingly natural, and Randy's voice was just as I remember





The Hi-Fi World listening panel...

hearing it in a Tokyo nightclub, back in 1992! Sheer, unabashed transparency – with no quacks, warbles, sponginess, squeaks, squawks, booms or tizzes. This is why people love electrostatics – it takes you to a higher plane. You feel privy to a secret that even most audiophiles don't know. It's an amazing sensation of sheer luxury and indulgence, yet it seems so natural and so right. You think to yourself, 'why did I bother with anything else for so long?'

Firecracker attack transients allied to amazing neutrality and real power handling equals real fun with classical music, so I cued up my DG pressing of Beethoven's Pastoral Symphony (Karajan) and sat back waiting to be amazed. And I was. The first bar – no, scratch that – the first note of the first bar showed how stunning these things are. Have you ever had a symphony orchestra in your living room? You've doubtless had a clanky, nasal, catarrh riddled approximation of one, but unless you've had the privilege of owning electrostatics, then you'll not know how it feels. The tone and timbre of strings through these is utterly entrancing – it's like being there. Most impressive though was the way these Quads – unlike the original ESL 57s I remember – just got louder and louder along with the music, so that crescendos with the orchestra at full tilt were powerful enough to pin me to my seat. They were moving massive amounts of air, yet sounding so couth and unperturbed.

Okay, now for that famed ESL 57 nemesis – rock music. The originals simply can't get it on and boogie with likes of the NS1000M, and while this rebuilt pair is oh-so-very-much-better, they still don't quite match the Yamahas' combination of massively high SPLs and ultra low distortion. These 'speakers go amazingly loud, unbelievably cleanly – and with their massively heavy and highly damped closed boxes show no

signs of stress as that twelve inch carbon fibre coated paper bass unit punches out like an iron fist. Cue up Saxon's '747 - Strangers in the Night' and the NS1000Ms pin you against the rear wall, but never once assault your ears despite the immense, immutable, visceral thwack.

The Quads simply can't do this – but with a great valve amp like the Audio Research, they get surprisingly close. Yes, really! Indeed, I've never heard any electrostatics sound as powerful and articulate at high levels. Serious amounts of bass emerge from within, and it's deliciously tight and taut and lithe – more so even than the Yams. They drive rooms brilliantly, given the equipment to do the job. I've heard less convincing rock music emerging from vast, horn loaded JBL studio monitors...

What then is wrong with them? While they can go from quiet to loud at the drop of a hat, they can't impart the full dynamic shading that either the NS1000Ms or the Perigee FK-1Ls (reviewed a few months back) can. With either of the latter two, a drum stick thwacked onto a snare kicks you in the back of the

chest, but with the Quads at the same volume, it just about reaches the front. This, plus a lack of low, low bass (we're talking around 40-60Hz here), and the absence of a small amount of high treble information (nee 'atmosphere') compared to the Yam's Beryllium dome or Perigee's ribbon, is the only thing I can find to churl about!

To give you an illustration of how disarmingly different Quads at their best can sound, I put on my old vinyl copy of Kraftwerk's 'Computer Welt' on the turntable and sat down. I heard rhythmic patterns – interplay between two sequenced synthesiser tracks in the mix – that I've never heard before, despite playing this song literally thousands of times before, on a dizzying variety of hi-fi (including £125,000 esoterica). I thought my days of upgrades 'that will give you a new music collection' were long gone, as I'd got my own system sounding so darned good. But then you put these, the ultimate ESL 57s on, and discover what you've been missing. Sorry to have to launch into superlative-drenched purple prose, but a good pair of second-hand Quad ESL 57s fully rebuilt by One Thing Audio is the best loudspeaker value I've ever come across. For around £1,500 you'll have one of the greatest ways of hearing music yet devised. Recommended, then...

### VERDICT

Turns a great design into a truly stellar one – result: the best loudspeaker value around.

### QUAD ESL57

Classique Sounds

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### ONE THING AUDIO PRICES:

new OTEC treble panel	£150
original bass panel rebuild	£130
EHT rectifier board RBT2	£50
heavy Duty Clamp board CLP4	£29.50
audio transformer upgrade kit	£35 pr
hi-spec rebuilt audio transformer	£45
complete ESL57 rebuild	£1000 pr
Rupert loudspeaker stands	£175 pr

## MEASURED PERFORMANCE

Frequency response of this ESL-57 is essentially flat across the audio band. The treble panel peaks up at 12kHz by +4dB. It's a narrow peak; output is flat to 8kHz so only on occasion will be audible. Treble from Clingfilm sounds a lot nicer than treble from a resonant metal dome.

At low frequencies the bass panels peak at 90Hz, as they always did. But the 57 is producing useful energy down to 40Hz and in the right room it can drive a main mode to give good low bass. Otherwise it is best used with a subwoofer.

This ESL-57 measures out at 8.6ohms impedance and across

the audio band it is resistive. Unfortunately, at spectrum extremes impedance plummets to almost zero! All the same, this Quad is more resistive than any coil loudspeaker and perfect for valve amps. plus trannies with protection.

Sensitivity is low at just 82dB.

This ESL-57 measures very well. It is a little idiosyncratic as always, but fundamentally accurate. NK

