

Forty, Something

It isn't often that valve aficionado Noel Keywood finds a 'tubular belle' that is so well engineered and voiced that he finds it almost beyond reproach, but Quad's latest QC-twenty four and II/forty pre-power combination is such a thing...

I suspect a good many *Hi-Fi World* readers will know that the Quad QC-twenty four valve preamplifier and II-forty power valve combination I am reviewing here is a modern update of a much venerated classic, the Quad 22/II, first released in 1953.

Looking at it, you might think not a lot has changed, and in some ways it hasn't. Quad have retained both the original style - or the essence of it - as well as the original packaging arrangement of preamp accompanied by two monobloc power amps. So why re-engineer an old classic like this?

There's steadily growing interest in old classics of all sorts, often because they embodied properties lost to the modern world. In this case both the preamp and power amps retain the elegant simplicity of style that proved a timeless feature of the originals. Additionally, they offer



an attractive alternative to the sound of transistors. There's a growing understanding and acceptance worldwide that valves provide an alternative sound. Especially in China, where this amplifier is now built, as the Chinese still manufacture valves and if their domestic market is any guide, still very much believe in the quality valves offer.

This is still a modern amplifier though, not an anachronism designed for wistful old fogeys. And although wistful old fogeys may well like it, as I did, forget steam power; this has quite an engine under the bonnet. It isn't a slow and sedate veteran by any means!

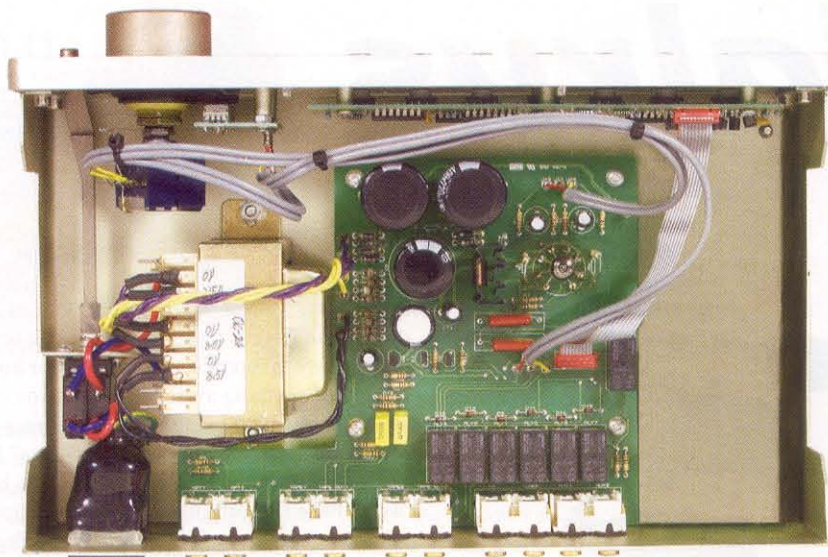
The QC-twenty four preamp is a self-powered, standalone unit, unlike the original. Measuring just 30cms (1ft) long and 18cms deep (7in) its compact, sitting comfortably on a nine inch deep shelf, with room for the rear connectors. By today's standards it is small, yet it is dimensionally similar to the original. It also uses a similar control layout, with a nice simple power switch and large volume control situated conveniently at right.

Inside, there is a miniature, wire-ended Philips 611 IWA double triode valve. This is a military device, used in missiles I'm told, with extremely long life and enormous robustness. It provides a gain of x6 via the normal inputs (i.e. CD, Tuner, etc), our measurements showed. That's high, twice as much as usual and, coupled with a useful 3.45V / 20V input/output limit means this preamp will in theory drive any power amplifier from any source.

However, with no cathode follower line driver, output impedance is high. Quad recommend the preamp sees at least 50k load, which excludes most solid-state power amps. In practice there's gain to spare so it might drive many power amps satisfactorily. High output impedance also means the preamp isn't suited to drive long cables to the power amps.

The use of just one triode per channel does have the advantage of simplicity though, introducing very little degradation to the sound. There's no penalty to be paid here if the Quad power amps are used.

Maintaining this purist approach, Quad switch the rear inputs with relays to avoid wiring looms. The front panel push buttons are actuators in effect; they don't carry the audio signal. It's the only proper way to do it and a neat arrangement by any standards. An orange LED at the centre of each button lights when that input is selected. Signal purity is



Inside the QC-twenty four preamplifier. Nice, big Alps Blue volume control (top left), logic board behind input selectors, relays next to rear inputs.

maintained by the use of an Alps Blue volume control, a recognised high quality audio component.

All this is quite different from the original Quad 22 of course. This new preamp really is a specialised design, quite unlike most rivals of today, or yesterday. With just one amplifying device and quality components the idea is to attain exceptional levels of clarity.

Quad will offer an external valve phono stage soon. The QC twenty four is line only in itself.

The preamp is beautifully built, although the lacquer spray finish is a tad underwhelming, I felt. The basic steel chassis is bent, welded and ground, a series of processes normally avoided because of cost. The front panel looks as if it might be milled from a slab, but in fact is a casting in true Quad tradition. This is how Quad originally achieved the attractive curves and three-dimensional detailing that's such a strong feature of the original. It's not seen nowadays because of high initial cost and inflexibility; once a die has been made it is difficult to modify. The pressure die casting Quad use on this new incarnation is a work of art behind the front panel!

The large volume control - a beauty to use, just like the original - sits on its own plastic moulding. Beneath is the delightful Quad balance control. It moves over a short quadrant and looks fetchingly ingenious perhaps, but gives rise to an expensive tangle of levers and parts behind the fascia. Redesigning and assembling this little lot must have had a few folk whistling through

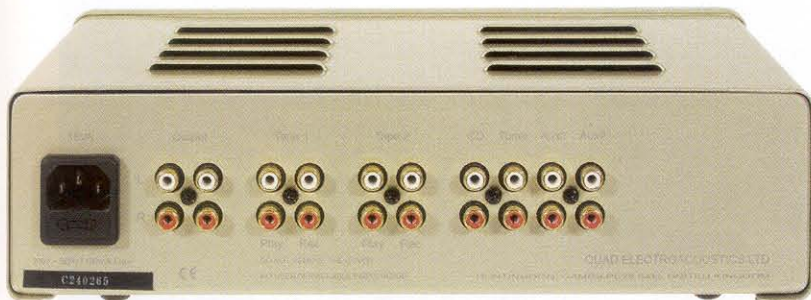
their teeth, I think. By any standards Quad's early engineering was a bit absolutist and completely free from cost concerns, meaning it was expensive to produce. But that's what it takes to make a classic, and equally to remake it.

Modern day Quad, now a part of China based International Audio Group, or IAG, have taken no shortcuts with this one. What you get is a solidly made preamplifier that

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is delightfully easy and satisfying to use, as well as taking up little space. It is blissfully easy on the eye, too. The finish could look a little more refined, but it is a dedicated audiophile design that uses simplicity to achieve signal purity. Few preamplifiers are so neatly yet thoroughly designed to do their job as well as this.

The II-forty power amplifiers mimic the original IIs in basic layout and design, but they are larger, as Quad point out. The main reason is because the original IIs produced 15W each from a pair of KT66s operating in push-pull, but the II-fortys use a pair of quality KT88s in push-pull to deliver a chunky 40W. Okay, it doesn't sound much by transistor standards, but it is more than enough to drive a reasonably sensitive loudspeaker to very high volume in truth. If you really want to wick it, then a valve amp also overloads more gracefully, moving progressively into muddle, rather than the hard clip and distortion of



a transistor amplifier. Which is why many people say that valve watts are louder than transistor watts.

Delivering more power means bigger transformers all round, mains and output. So the II-fortys are heavy, but by today's standards where everything has swollen to almost incomprehensible proportions, they are still fairly compact. And, like the preamp, they have pleasing and useful proportions, seemingly able to fit in anywhere.

Another hidden factor that swells size and weight, but also sets the Quad IIs apart from so many rivals, is the use of a 5U4G valve rectifier in place of the more common solid-state diode bridge. This gives slow start up, but also a purer valve sound, free from a slight hardening that bridges usually impose. The circuit is all but identical to Peter Walker's original, using a transformer primary winding to add cathode coupled feedback.

As with the preamp, you encounter no religion with the power amps. Put them on a stand or the floor - but not carpet - connect up using the IEC power lead supplied, and a phono-to-phono to deliver the audio signal from the preamplifier, and you are in business. Press the rocker style power switch on each and the amplifier starts up silently; there's no intimidating thrum as a vast transformer rocks the chassis, just a gently intensifying glow from the valve filaments. Both 4ohm and 8ohm outputs are provided, so all modern loudspeakers are catered for. The output terminals accept 4mm plugs, spade connectors and bare wire.

SOUND QUALITY

A modern valve amplifier, as I categorise it, is a fascinating beast, as well as an intriguing one. It displays all the strengths of valves, as well as those of transistors, almost without compromise. And this is how the Quad system struck me from the off. Almost magically it combines extreme dynamism with a presentation in which solid-state glare and that peculiarly flat, uninvolved

presentation of transistor amplifiers are absent. You get a sound with a sense of life and an absence of unnaturalness that, to me, is unequivocally more realistic than we have sadly become accustomed to in much

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of today's hi-fi.

Indeed, it suits Rock every bit as much as Classical music. In this respect the new Quad valve amplifier differs markedly from the old. The 22/II combo I once used for a short while was a little too mellifluous and polite in its low frequency delivery for Rock to have real impact. It was smooth and easy on the ear, but also a bit vague by modern standards. I wouldn't have expected to get much out of classic heavy rock like Steve Earle's 'Copperhead Road', for example, but the new Quads breathed life and power into the kick drum, and enlivened the cadenced drum strikes. There's all the low end grunt from solid-state, but without the flat and somewhat hard sounding follow through. Earle's rich Southern tones were as clearly presented as I've ever heard them and the chiming steel string guitars sounded lustroously resonant, with no hint of the artificial incision that so often lies behind them.

Yet that's not to say the Quads don't convey what at times is an enormous amount of high frequency energy in modern Rock. The stinging tambourine strikes in 'Esmerelda's Hollywood', from 'The Hard Way', were actually more vivid than I've heard them from solid-state amplifiers, which would surprise most sceptics convinced valve amps somehow do what they do by smothering the sound. In this case the reverse was true; the Quads gave strong high frequency transients ballistic impact. And this is what a really good valve amplifier can

do: inject a dynamic that is almost frightening. Dynamic contrasts seem stretched, but in truth they're just given full rein.

With so little active circuitry in the signal path you can expect an amplifier like this to possess enormous midrange insight - and it did. Billy Idols vocal theatrics were spot lit in 'Soul Standing By', capturing all his expressive devices. And the Quad rocks; you'd want to play 'White Wedding' on it. Carol Decker is another singer not short of vocal expression and I was delighted to hear further into what has always been the muddled sound of TPau's 'China in Your Hand'. The muddle is real and within the recording, so



The QC-twenty four's wire-ended Philips 6111WA double triode valve. Originally for military use, like sitting atop an ICBM, it is rugged.

there's only so much an amplifier can do, but I heard more of La Decker's expressive range than I have ever really appreciated before. Here the Quad started to pull way ahead of what I am used to, bar my own 300B perhaps. The Quad paints a more vivid picture than a classic 300B push-pull, but then this is what you can expect from the KT88 when it's enjoying the right support circuitry.

A delight of valves of course is that their intrinsic smoothness and lack of glare or grain suits Classical music as much as Rock. And so it was with the Quads. The orchestra swelled magnificently in the Overture of Wagner's 'Rienzi', horns had a rich, sonorous and throaty rasp, and

their interjections stabbed out with impressive strength. This comes from both the extreme resolution of the Quad, linked to its unfettered dynamics; instruments are lifted from a mix and given life. It's wonderful to hear, a treat in musical entertainment.

Needless to say, strings have vivacity and even that edginess and wiriness that comes from gut bowed hard, but you're so aware of their natural properties, such is the resolution of timbral signature, that it all seems vividly right. When the orchestra falls silent except for the menace of distant thunder from a kettle drum, the Quad captures

and expresses the mood perfectly. It wasn't an undifferentiated rumble that my brain struggled to resolve and make sense of, so much as a musical instrument being carefully but skillfully manipulated by a musician. In this sense the Quads made music more of a natural and fulfilling experience than I usually enjoy, and of course Wagner is not a composer whose music survives an amplifier lacking dynamics or resolution. So it enhances classical if anything.

What held for Wagner was repeated with violins and brass in 'Scheherazade'. Orchestral sections stood out in clear relief, heightening

the drama of the performance as horns replied to strings in clear point and counter point.

What held so well for Rock vocals applied equally well to Opera. The Quad portrayed Renee Fleming with a sense of full-bodied ease that struck me as completely real. Whether any recorded performance can be so is doubtful of course, but that's how it seemed. Not so much a cleverly contrived simulacrum, representative but not real, as a real person singing. Again, the Quad offers a degree of entertainment with Opera that's hard to find elsewhere in high fidelity. It's a masterful product as such.

The new Quad valve amplifier is a perfect update of the famous original 22/II. It is a masterful design in itself, getting the best out of one of the world's best audio valves to provide a modern, dynamic and exciting sound. In conjunction with lovely styling and superb ergonomics this is one of the best sounding, most elegant and easy to use hi-fi amplifiers you could ever hope to come across.



VERDICT

Brilliantly open, fast and uncoloured sounding, this ultra modern valve pre-power combination is definitive of the breed.

QUAD QC-TWENTY FOUR £770
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THE ORIGINALS

Quad's first valve amplifier combination comprised the QCII mono preamplifier partnered with one Quad II monobloc power amplifier, introduced in 1953. By 1959 the stereo was catching on so Quad introduced the Quad 22 two channel preamp, for use with two Quad II monoblocs. This combination sold steadily until 1969, when they were replaced by the solid-state 33/303 amplifier, introduced 1967.

As both valves and old classics have become progressively more popular over the last decade or so, the Quad 22/II combination has gained wide recognition as an elegant exemplar of the valve art. The preamplifier, which uses two ECC83 double triodes and two EF86 pentodes, is compact, very well made in most, if not all areas, stylish in a way reminiscent of the 1950s, yet at the same time pure enough of line and in shape to appeal today.

The Quad II monobloc power amplifiers use a circuit unique to Quad, to deliver 15W apiece with little distortion, from GEC KT66 output valves.

Nowadays, Quad 22/II set ups are sought after classics. They come with a host of difficulties though. The preamplifier is all but unusable, as it is festooned with LP equalisation circuits and associated switches. Sound quality is usually veiled - poor by modern standards, largely because the many switches have corroded, weak input sockets have loosened and internal components have deteriorated over time. Comprehensive restoration can remedy this, but the input sockets must be changed, so originality will be lost. See what expert Graham Tricker says though, on p16.

The preamplifier switches mains voltage through to the power amps via a cable harness, and also receives power back from them. It is not self-powered, so cannot be used on its own.

The power amps can be used alone, and often are. Costing less than a modern valve amplifier they have been pressed back into service around Britain and the world as their reputation spread. Put Quad II into Google and see what you get!

Generally, unrestored the Quad IIs deliver an easy, slightly mellifluous sound, with limited bass impact. I was told by Peter Walker that the output transformers, which are small, were designed to saturate at bass frequencies to provide a measure of protection for the ESL-57 electrostatic loudspeakers. Delivering 15W each from a pair of KT66 Kinkless Tetrodes, they are not power houses.

The new QC-twenty four preamplifier has none of the tone control or equalisation circuitry of the 22, nor the mechanical switches. Instead it has a switching logic board and associated miniature relays. This avoids wiring looms and open contacts. The new preamp also has its own power supply.

The new Quad II-forty power amplifiers are larger than the original IIs, using KT88 output valves instead of KT66s. These days the KT88 has been recognised as a great audio amplifying device, and the new II-forty does a fine job in exploiting its potential to the full.

MEASURED PERFORMANCE

Twin KT88s in push-pull normally give around 40W maximum output. In the Quad II forty power amplifier a smidgeon more is available - 45W maximum to be precise. This is about right; a unequivocal 40W but no more, so as not to over drive the valves. It's enough to drive any sensitive floorstander to high volume. Similar power was available from both taps: 45W from the 8ohm section and 42W from the 4ohm tap on it. Load matching was good, unlike a majority of valve amps. Full power was delivered at low (40Hz) and high frequencies too (10kHz).

Distortion in the power amplifier was a classic second harmonic at all frequencies. Third harmonic started to appear at high outputs, due to magnetic saturation, but otherwise the transformers showed their quality by not intruding in this fashion. Levels were low too, below 0.1% most of the time, even close to full output. As always, there was more distortion at high frequencies, but as it was second harmonic and still at 0.2% at normal outputs, this is hardly consequential. So the power amplifier put in a great performance, due to good basic circuit design and fine output transformers. In this area it was a classic. Hum output was incredibly low at 0.3mV at 50Hz and the same at 100Hz.

The preamp has a lot of gain: no less than x6 - twice as much as usual. This gave the line inputs (CD, etc) a high sensitivity of 180mV for full output. All the same, with 2V in

from CD and 1V out to the power amp., distortion measured 0.07%, second harmonic only. Maximum input was 3.5V and output 20V.

This is an classic valve amp in measurement terms, one that turns in a great measured performance, free from weaknesses. NK

Power	45watts
CD/tuner/aux.	
Frequency response	2Hz-38kHz
Separation	83dB
Noise	-106dB
Distortion	0.05%
Sensitivity	180mV
Disc	
Frequency response	12Hz-28kHz
Separation	67dB
Noise	-74dB
Distortion	0.08%
Sensitivity	1.6mV
Overload	25mV

