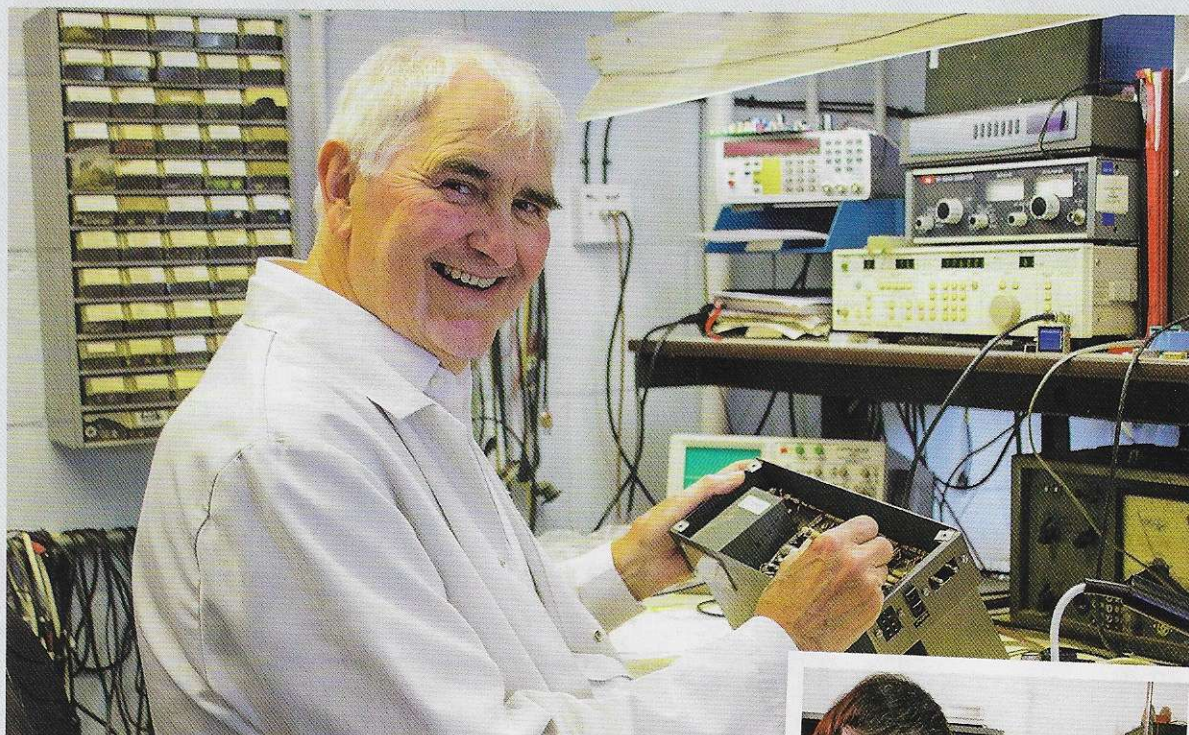


# Quad to the core

As one of Quad's longest-serving employees hangs up his soldering iron, **Ken Kessler** talks with Ken Bunting about a lifetime working on iconic kit

**RIGHT:** Ken Bunting works on one of his last tasks in Quad's service department, digging inside a Quad II mono amplifier – a model that was in production when he arrived 48 years ago. Inset shot shows him servicing a Quad II over 20 years ago, in 1996! Still with lab coat, but then sporting a moustache



**BELOW:** An early Quad tuner typical of the customer units Ken would have serviced from the start. He was head-hunted from Pye Philips because of his expertise with communications and RF, and setting-up tuners



It was 15 years since I had interviewed Ken Bunting, in charge of Quad's service department, but back then it was to pick his brains about the company's history. Early this May, I had the privilege of repeating the interrogation, on the occasion of Ken's retirement. Off to the wilds of Cambridge, where I found him on his last day, in a busy-as-ever service area with everything from Quad ESL63s to valve units being repaired – contrary to any rumours or worries that the company had abandoned its legendary back-up division.

Ken started at Quad on the 16th of March 1970. 'It was my first job in

audio, hired as a Service Engineer. I'd trained with Pye Philips, so I was in communications, working with RF, so my first real job with the company was to work on AM tuners and tuner alignment. There was no service department in 1970 – that was being set up. I was head-hunted really: they were just starting the department. They were still building the room.'

Ken answered to the works manager, Jim Watson. 'Peter Walker was in and around the place all of the time. He was that sort of character and could talk to anybody – a very easy-going person. I was a sprout of 21, I'd had a five-year apprenticeship with Pye, and I had one year working with them when my apprenticeship finished, but that was going nowhere.'

'I was too valuable on production, but I wanted other challenges. The only way to move on was to leave, although they don't want you to leave because they put all the investment into training you!

So that's why I came to Quad, as they were setting up the service department, and because I quite liked mending things for people.'

## DUCKING 'N' DIVING

Over his 48 years, Ken worked on everything bar the ESLs. He laughs, 'I ducked and dived that. That was for somebody else! It wasn't that I didn't know how it works, it wasn't that I couldn't make it – it was just that it just never appealed to me. I liked the sound of a pair of them, but it just didn't appeal.'

Amid all the work with preamps and power amps, Ken's speciality



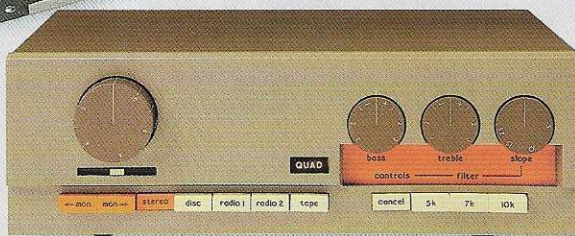
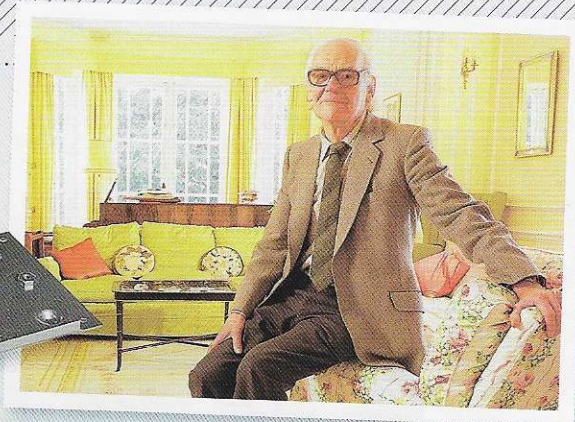
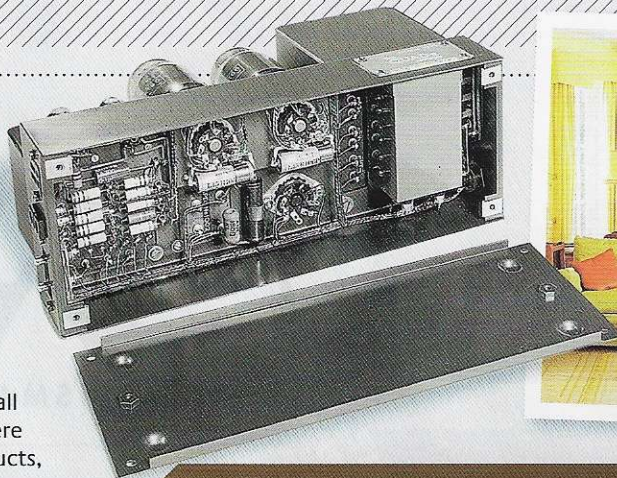
was tuners. Although trained in this area, he said that the service department didn't get involved directly in the designs, though their suggestions – derived from hands-on experience after the fact – were taken into consideration. These may have included only small detail changes, but they were incorporated into the products, especially if cost-effective.

'At the end of the day, Peter wanted to make money, and he was quite a clever man at making money as easily as he could. That's why the main amp [the Quad II] was so simple because we knew full well that the way to do it was to split that cathode and bias resistor into two for each valve and to do it that way. He could build two amps with that single ballast resistor and saved money on that. He was very shrewd.'

Above all the cost savings, quality remained paramount. Says Ken, as an example, 'I think it nearly killed him, developing that output transformer because it had the cathode feedback windings in there, and it was very difficult doing the maths for the transformer. And later on, when we had the kit that could measure it properly, that showed how good it really was. And all from working only with slide rules.'

It was no surprise when asked to name his favourite among all of the models he'd worked on, Ken said, 'They've all got little idiosyncrasies, as regards to working, and some are easy, like the 33, but then the 34 could suffer component failures and things. That sets up a challenge.'

'But if I think deep down for a really nice unit, it's hard to beat the



**TOP:** Innards of the Quad II mono power amp, showing use of point-to-point hard-wiring, in the pre-PCB era

**TOP RIGHT:** Peter Walker, Quad's co-founder and Ken's genial boss

**ABOVE:** Quad 33 preamp and (right) 303 power amp, two of its biggest sellers

**BELOW:** The FM4 tuner, a mite troublesome, but Ken's favourite model over the span of his career

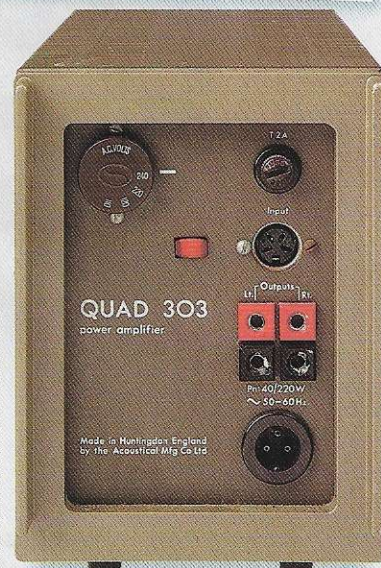
the FM4. It had its battery problems, but for what I'm doing, I go through the RF section, then the audio section, and the quality you get out of an FM broadcast is excellent. But FM is slowly disappearing, so we don't make an FM tuner anymore.'

#### ALL CHANGE

When Ken arrived, the ESL57 was still being produced and the 33/303 pre/power amp combination was in production, 'but the 303 had suffered problems in that initial run, so we started at around Serial Number 1000, and we were up to about 19,000 when we changed the style of the board. Then from 19,000 to 100,000, it never changed, so all that lot was the same.'

Ken joined during a period of momentous upheaval in the audio industry, while the transition from valves to solid-state was still underway, and the mono valve Quad II amplifier was in production while the 303 stereo power amplifier was establishing itself as the company's first transistor product.

'The main amplifiers [Quad IIs] were the bread-and-butter, but there were slight problems with the 303. While they sorted out the problems, they got the girls to build the main amplifiers because a lot of people still had mono kit, or they had 22s, and they needed the extra power amp [to go stereo].



'So they did carry on and you can always tell the later ones because they had a metal serial number [badge] on them instead of the plastic one. Any Quad IIs with a metal plate are ones that were built while we were also making 33/303s.'

Quad was one of the companies that waited before committing entirely to solid-state design, avoiding the pitfalls that befell

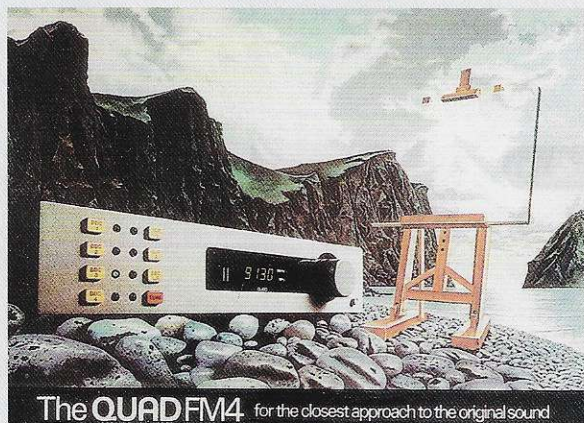
manufacturers who were early adopters. But Ken says it wasn't the transistors themselves that were the big problem.

'It was the circuitry that they finally sorted out,' he says.

'I think that the devices, and their selection, were all OK. Without a doubt, it was *how* they were used that caused the problems.'

'The other kit we were making included the AM3 tuner – we only ever made a valve one, we never did do a solid-state AM tuner. We also had the FM2 which was still built because the FM3 didn't arrive until about 1971 to match in with it. ☺

“The Quad 303 suffered problems in its initial run”



The QUAD FM4 for the closest approach to the original sound



The FM2 looked like a transistor one, but it wasn't – it was a hybrid.'

Ken recalls that the original AM1 was built and tested by Horn's of Oxford – with input from Geoffrey Horn, later of *Gramophone* magazine – and the first one to come out of the Quad factory was the AM2. 'That predated me. Then there was the AM3 that looked like the 33/303, with the same case and switches. It was valve, but it had an AM2 chassis inside, with the power supply hung on the back. An AM3 was basically an AM2.'

**DODGY PLUGS**

Another quirky aspect of Quad production Ken recalls involved the Quad 33. 'We were producing it with these horrible DIN plugs. Now there were a lot of things written about DIN plugs at the time, singing their praises, and Peter Walker, in his wisdom, wanted to get away from phono plugs because they'd readily fall out in use.'

'The original RCA plug was tapered, so after you plugged it in once, the second time it would often fall out, where the later phonos didn't. So that was a joke on us because we didn't build it with phonos – we used DINs. DINs have their advantages, but the main disadvantage was there was no "fiddle factor" for the customer, and hi-fi always needs a fiddle factor.'

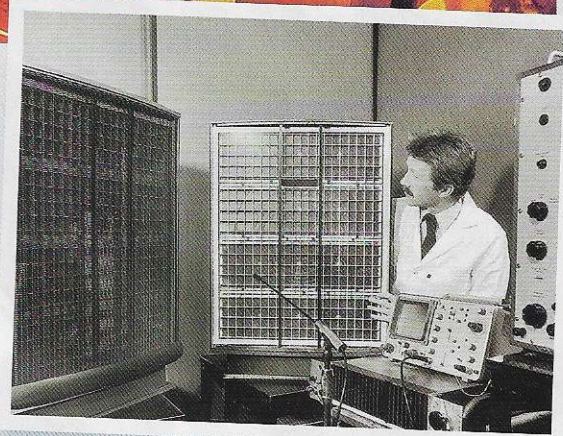
'And then, of course, the 34 comes along and we built it with DINs, and suddenly, because of the



American market, we had to change back to phono sockets. So we made a huge load of them before we went back to phono. With a DIN, you had a single connector with five pins, for your left and right, whereas phonos take a lot of area on the back panel. DIN was the SCART of its day, really.'

Yet another memorable controversy concerned the evolution of the Quad 405 to the 405-2. 'We were having difficulty with some loudspeakers. The 405 had a passive current limiter. What actually happened was, as the impedance of the speaker fell, the current limiter

*"We thrashed the 770s and couldn't get them to die"*



**TOP:** Ken noted the devotion of Quad customers, including Göran Karlsson, who prepared this display for the 1996 Gothenburg Hi-Fi Show to mark 60 years of Quad

**ABOVE RIGHT:** Period shot shows an engineer testing an ESL63

**LEFT:** Quad 44 preamp on top of a 405-2, probably Quad's most controversial product due to its current limiting behaviour

would come in, and it would then make funny, farty noises through the speaker. PJ [Peter Walker] and KEF were very pally at the time so we tested with KEF 104ABs – the acoustic Butterworths – but there was also this new company [Mission] that came along with the 770.'

**BURN OUT**

Hugely popular, the 770s – like the KEFs – were likely candidates for 405 owners who didn't have Quad ESLs. Moreover, they were adored by certain reviewers who raved about them uncontrollably. 'They [Mission] were having problems with some of their drive units because they bought them from odd places. They seemed to burn out on 405s for some unknown reason, and they were blaming the 405.'

'We had some of their speakers, and we thrashed them and thrashed them and thrashed them, and we couldn't get them to die. We couldn't ever sort it out. I personally





wouldn't condemn the 770 – it had an impedance that was all over the place – and we don't know what people had done to it. But there was this farty business – I can only describe it as that – on transients when the impedance dropped.

'We had a guy who worked for us called Max Hadley. He was brilliant. So he comes along and he – what he called "turbo'd" it, and what he did was to build a little thick film circuit that held off the current. So, for so many milliseconds, it could pass 'infinite' current, but then this little circuit fires in and protects the speaker if somebody's done something daft. And that's where the 405-2 came in. Suddenly, you could get 100W into 4ohm, where before we were struggling to achieve 80W.'

Quad produced 64,000 405s between 1975 and 1982, and clearly the fix worked well: it would go on to sell 100,000 405-2s before the amp went out of production in 1993. Ken maintains that, side-by-side, there was no sonic difference between them. 'If you were to drive them into Quad ESL63s, you couldn't tell them apart because you were not getting near the current limit of the amp – you just couldn't get there.

'You see, originally, the 405 was conceived to go into the bottom of the speaker [the ESL63] to make it an active speaker. In those days, because of the cost of doing that, it

fell foul of Quad's pricing structures. So we made the 405 as a separate entity, so it could drive other speakers besides the ESL63 – but it all hinged around the '63. It's easier to do: you put all the transformers onboard, without the capacitors.'

**PRICE OF POWER**

Why the active ESL63 with onboard 405 never saw production was down to Peter Walker's abhorrence of the astronomical pricing of much 'high-end' gear. He was especially critical of the price tags on high-end hardware from America, and even fell out with Alastair Robertson-Aikman of SME

when AR-A stopped using Quad amps because he wanted more power.

'We were making speakers selling for somewhere around £1200 per pair. [Adding 405s] would theoretically

stick another £600 or £700 on top of that, fining your customers. So Peter said, "Alright then, we'll cut that bit out" and those customers who can't afford ESL63s will have cone speakers. And that's what they did. A large percentage of 405s went on to partner conventional speakers, not electrostatics.'

Ken's affection for the company is palpable, and one suspects he'll be around to pick up the phone if they need his advice for some intractable problem. He explained the company's reputation for

"An active ESL63 fell foul of Quad pricing structures"



**TOP:** The author (right) hands a unique Artera component given by Quad to Ken Bunting, with [inset shot] an engraved plaque commemorating his 48 years of service and, said Bunting, 'guaranteeing that it can never turn up on eBay!'

**BELOW LEFT:** Ken Bunting (far left) in the 1990s with fellow engineers Dave Taylor (middle) and Peter Tarry (right). Quad continued servicing valve electronics despite the then-scarcity of tube supplies, which Ken noted was the biggest problem faced until the full-scale revival of valve electronics resuscitated manufacture in Russia, eastern Europe and China

looking after its customers was down to speed and cost. 'We also kept the cost very low because one or two per cent of the sales prices were put aside for service. That's the reason why Quad's service was always so cheap, and we could turn things around in less than a week.

'We had an engineer for each base, but of course you were only looking after, in those days, the few main amps, a small range of FM tuners, and the 33 and 22. There was an engineer on each bench doing that. But the important thing was to get the product through as quick as you could, however nice it was to talk to the customers. If you want to try and guarantee a three-to-five day turnaround, you can't spend a lot of time chatting.'

**FULL CIRCLE**

Any temptation to carry on is countered by Ken having plenty of things to occupy him during his retirement. Still, I did wonder why he chose to sign off with only two years to go before hitting a nice, round 50, and he admitted, 'I didn't really consider that at all. I got to 70, and the family wanted more of my time... I'd done the 48 years.'

Ken's final servicing task brought his near-half-century full-circle, reminding me of what he said back in 2003: 'I think I'm more of an amplifier man than anything else – amps are my forté. But for interest's sake? Tuners are my thing because of my background. I just feel at home with tuners.' But on his final day at the bench, the last unit he worked on was a Quad 33 preamp... one of the models in production when he joined the company. ☺

