NAME BEHIND THE NAME

Roger Quested – Quested Monitors

Quested is one of the most respected names in monitoring on the planet, counting Trevor Horn and Hans Zimmer as devotees. But there's a lot more to the Roger Quested story than a handy knack with soft domes and crossovers.

Text: Andy Stewart

▶He was a renowned studio engineer in England in the '60s, '70s and early '80s and today he's a widely acclaimed acoustician and speaker manufacturer with a penchant for large and expensive soffit-mounted monitor designs. He's a riddle wrapped in an enigma (to paraphrase Winston Churchill), a shy and laconic man not known for rabbiting on about his own expertise or eventful past. In fact, at times it's difficult to get a word out of Roger Quested at all. His British wit is as dry as an Australian summer and when faced with excitable 'audio dweebs' he projects an enigmatic mixture of diffidence, reluctance and genuine humility. He refuses all flattery, deflecting praise like a martial artist and his self-effacing nature is almost impenetrable: "I just make speakers… I dunno what all the fuss is about."

And yet Roger has much to skite about. He's been instrumental in the design of many major studios the world over and his speakers of all shapes and sizes take pride of place in countless facilities large and small (including my own). As an engineer he's worked with bands such as The Rolling Stones, Pink Floyd, The Kinks, Paul Simon, Cat Stevens, Rick Springfield… even a young Clive James, and that's just the very short list. But perhaps one of his earliest experiences as an impressionable *assistant* engineer is his most memorable; working on and bearing witness to one of the most famous debut rock albums of all time, *Led Zeppelin 1*.

Led Zeppelin 1 was a seminal rock album of the late '60s where Roger worked with the legendary Glyn Johns, whom he credits as being a significant and influential figure: "Glyn was an amazing engineer and a real mentor to me in the early days. I owe him a lot really."

Glyn and Roger famously recorded John Bonham's fantastic drum sound on *Led Zeppelin 1* with only four mics, and yet this particular story wasn't told to me by Roger himself, but rather, a third party who seemed to find the tale of the recording method far more enthralling. Roger himself stood quite still and stared through his round-rimmed glasses as if to say: 'Do I really need to be hearing this story again?', speaking only when a fact was incorrectly told or an embellishment took the story too far:

Third Party: "Did you know that Roger recorded the drums on *Led Zeppelin 1* at Olympic with just three mics?! That's just amazing, isn't it?"

Roger: "… it was four mics, actually… and I was just the assistant."

I caught up with Roger Quested recently while he was in Australia to attend the SMPTE trade show in Sydney – and it was there that we had a long and hilarious chat about speaker design and a sprinkling of his engineering past. I use the term 'hilarious' relatively because on the previous day when we spoke, Roger wasn't feeling the best, it must be said. He'd had a terrible flight over, the bright lights in the trade hall were driving him batty and his dislike for public appearances was palpable. If he'd had his way I suspect he would have run screaming from the trade hall, never to return. So it was with some degree of trepidation that I'd organised to interview him on camera for the AT website – something I rarely do, and something Roger seemed reticent about… to say the least. So it was probably just as well that when the time

came to film the interview, the camera up and died and I was reduced to recording our conversation on an analogue cassette. But instead of this technical hitch sending the interview downhill like a billycart, Roger sparked up and talked openly about his speaker designs in a refreshingly humble and direct way.

THE QUESTED PHILOSOPHY

Roger Quested: I never try to sell speakers. I just say to people; 'listen to them, compare them with other brands and decide what you want'. But unfortunately not many people do that. It's the minority of customers that actually go and listen to different things and say, 'I like the sound of those speakers best, I think I'll buy those'.

I've never looked into the physics of speaker design much either. I tend to design with my ears mainly. The fact is, I became a speaker designer by accident in many ways – my background is in audio engineering. The very first speakers I built were simply designed to replace a blown pair of soffit-mounted speakers at a studio I was managing, so I didn't even think about the design as such, only the quality of the components. I just built something to fit into the space the previous speakers occupied.

Andy Stewart: You're one of very few people, it seems, who still designs and builds specialist soffit-mounted speakers [speakers that are mounted in a wall], and perhaps the *only* one who would profess to rely so heavily on his ears. Can you tell me what defines a soffit-mounted speaker, in your opinion?

RQ: Basically, if you take any of the speakers that I've designed to go into soffits – I'm talking about the Quested 212s and 412s, for example – and put them on stands, they'll start rolling off at about 200Hz; way too high to sound any good. Conversely, if they're soffit-mounted in a well-constructed room, they'll be flat to 20Hz. Frankly, I've never been all that interested in *why* they work. I guess it has something to do with the surface area of the baffle because the 210s, which have a big surface area compared to the size of the drivers, work very well free-standing. But when you get something like the 415, where around 80% of the baffle is covered in driver units and ports, it doesn't work so well unless it's soffited. For other speakers, like the nearfield VS2108 for example, you wouldn't gain anything by putting that in a soffit.

AS: The VS2108 has quite an extended bottom end. Presumably if you put that speaker in a 'half space', you'd just end up with too much bass. Is that what you're driving at?

RQ: Exactly.

AS: You must have seen countless 'free-standing' nearfield monitors incorrectly placed in soffits over the years…

RQ: I have, and what I advise people to do if they're *really* determined to have that soffit-mounted 'look', is to build a simple framework, then cover it in fabric so that it *looks* like a soffit but doesn't *behave* like one.

AS: Your soffit-mounted speakers are certainly well known, but it's the nearfields that are surely the most common of all Quested speakers nowadays. How and when did you start designing those?

RQ: Well, the development behind all of my speakers starts with work on the drive units themselves, and then I make the electronics that link these components together as simply as possible, whether they're active crossovers or passive. When you look at the passive crossover of the VS2108 for example, you'll notice that it only has about five components, whereas some speaker crossovers have 10 or 12. If you make the crossover simple it's going to have a more effortless, open sound to it. The same applies to the active ones, with the EQ. To keep the box size down you have to introduce a very shallow 6dB per octave – even less – low frequency lift in it. You can get the same result without it of course, but you'd have to have a box three times as big!

Once you've worked on high quality components you then add a decent amplifier. One thing I often notice with other people's two-way active designs is that they tend to feed too little power to the tweeters. For the high-end driver you're not using a lot of RMS power, but that's no reason to afford them less – you still need the headroom. In the VS2108A, we're feeding 120 Watts to the bass driver, but we're also sending 100 Watts to the tweeter. I learnt this technique at the very beginning of my design career while working on the prototypes of my big three-way active systems. We had three Yamaha amps at the time: a PC5002 on the low end, two PC2002s at 450W on the mids, and a PC1002 at 100W per channel on the tweeter. Initially what was happening was that we were blowing up tweeters (rated at 25W) all the time, but as soon as we put double that amount (200W) on the tweeter… no problems at all!

AS: I imagine the instinct must have initially been to back off the power supplied to the tweeter rather than increase it.

RQ: That's right.

AS: So it was the levels of *distortion* then that was blowing them up, rather than sheer power?

RQ: Yes, it's square waves that kill tweeters – transient square waves off the amplifier. It's obviously a law of diminishing returns once you reach a certain degree of amplification, but in principle the more power and headroom you've got, the better a speaker's going to sound.

NECESSITY – MOTHER OF ALL INVENTION

Like so many of the early speaker designers in the pro audio industry, Roger Quested found himself at the forefront of speaker development out of sheer frustration with the studio monitors he'd been forced to work with for so long...

RQ: I started building speakers because I simply couldn't find any I liked. At the time (around 1982) I was managing a studio in London called Dick James music, and I'd worked there as a freelance engineer in the past. They'd had Eastlake monitors originally, which had two bass drivers and a compression driver that were – when you worked all day – a bit tiring, to say

"Led Zeppelin 1's sound is mainly the sound of very competent people in there getting on with it."

Two ways to build nearfields

the H108.

RQ: A two-way speaker – as with all speaker design – is full of compromises, and the main problem with a two-way design is that the smaller you make it, the less bass it naturally generates. A three-way speaker, on the other hand is going to be physically bigger and more expensive. (We're just making the finishing touches to the smallest three-way speaker we've ever offered right now, actually; a single 10-inch bass driver, with a soft-dome midrange and tweeter.) With the S-series Questeds, the two-way nearfield with the six-inch driver (the S6) is marginally better for vocals and accurate speech representation. The next size up, the S7, has the nicest balance overall, but by the time you go up to the eight-inch driver, the S8, the extra bass out of the driver causes the midrange to suffer a bit.

AS: Suffer how?

RQ: Well it doesn't have quite the clarity of the S7. I mean we're talking very subtle changes here, but of course, if you were to go up to a 10-inch two-way system, I'd find that balance unacceptable.

AS: So the 10-inch driver is the tipping point at which you'd say you have to have a dedicated midrange driver, hence the new three-way?

RQ: Well, in my mind, if you have a 10-inch driver you need a midrange component, yes.

Mixing Pink Floyd's *Obscured By Clouds*

Roger Quested: I only saw this Pink Floyd photo for the first time six months ago. It was taken when we were mixing the film soundtrack *Obscured by Clouds* in Studio 3 at Morgan. I remember that session quite well actually because it involved a notorious drama with 'two' bass tracks. I hadn't recorded the soundtrack – I only mixed it – so I wasn't familiar with the music before the session. The band came in with the tapes, and on one of the songs there were two tracks of bass, which is why Roger Waters is sitting where he is in the photo, right next to me at the console. I'd been trying to mix the two bass tracks together – manually of course – on his cue commands but it wasn't working out. He kept saying to me: "Okay change it over… now… oh you've missed it!" So in the end I said, "well this is just impossible, you keep giving me the cues *after* they've gone! So I tell you what, I'll put the bass parts on two faders and you can do it yourself."

So Roger [Waters] sat there while we tried to mix the song to ¼-inch, and he just kept getting it wrong, over and over. We were switching between Bass 1 and Bass 2 – the new bass and the old bass, or whatever it was – but he never got it right. In the end everyone was getting a bit pissed off because there was a bit of tension in the band by this time, and everyone just wanted to get it done. So, eventually, while the band members were making a cup of tea, I went around the back of the console and plugged one of the bass tracks – which had nothing wrong with it at all – into both faders so in the end Roger was just switching between two faders of the same thing. After a few more goes at it he eventually said: "I think that one was alright". So I said, "I'm not sure, I'd better check it" and needless to say it *was* alright, and that was that.

The console we're mixing on in this photo is a Cadac and the tape machine was a 3M. Morgan had a long association with Cadac. We had the first console they ever made, which was an eight-bus console. We beta tested for them and from memory that was the first in-line console they made. The person standing on Roger's left is Richard Wright from Pink Floyd. And I still have that shirt.

"I guess Abbey Road would have been the most famous studio around the world, but the two most prolific studios in London at that time were Morgan and Trident."

the least. Somewhat bizarrely, between the time I agreed to become the studio manager and my first day on the job, they changed the monitors to UREI 815s, which sounded much nicer than the compression drivers in the Eastlakes, but the problem was they used to break all the time because all the low bass was going through the dual-concentric cone.

We had English producer, Gus Dudgeon, in the studio remixing Elton John at one point and he broke one twice a week. This was a crazy state of affairs so as soon as he'd finished the project I started looking around to see what else was out there. I was originally intending to use a 10-inch Tannoy dual-concentric for the mid and tops, and get a couple of 15-inch bass drivers to fill the room, but before that happened I stumbled across this ProAc hi-fi system which I thought sounded excellent. I spoke to the guy who owned the company and he said the midrange was made by ATC, so I got a couple of those and four Gauss bass drivers… but do you think I could find a decent tweeter? I mean, there weren't any!

So what I eventually used as a tweeter was an Audax driver, which the company actually sold as a high/mid hi-fi component. This was okay up to 16kHz – and in the studio you didn't want or need anything flat to 20kHz anyway – so I tried that and it worked out very well. I set them up in the studio and eventually one of the freelance engineers approached me and asked if I would make a similar pair for a friend of his who was rebuilding a studio nearby. I agreed and pretty soon the word got around. Before I knew it, I was building speakers for Trident, Sarm West, Abbey Road, Westside, and Townhouse.

RE-QUESTED NEARFIELDS

AS: When did you build your first Quested nearfield monitor?

RQ: I guess in about '85 or '86. All the initial sales were of big soffits, of course, but at one point a couple of producers asked me if I could make something like an NS10, only a bit more powerful and a bit more accurate. This request eventually gave rise to the H108, which was designed to be as small as possible and still work. Funnily enough, we're selling more of those now then we ever have.

AS: And then you designed the larger passive VS2108, is that correct?

RQ: No, actually the next nearfield I developed was intended to be an 'active' [powered] version of the H108.

AS: I always thought the VS2108A started life as a passive speaker…

RQ: No, it started out as an H108, and then (I can't remember why, I think it was because of Genelec), I decided to make a powered version of it. But since there wasn't enough room at the back of the 108's cabinet to dissipate the heat from the amplifier, I had to make the box bigger. So that became the VS2108A.

Soon after it was released I got a call from a guy from a studio in New York – a very big facility with something like 20 rooms at the time – who said: 'We've tried everything and we're going to go with your H108 because it's the best sounding nearfield we can find… we just wish it had a bit more bass'. This call came on a Friday afternoon, so I said: 'I'll call

John Bonham's drum kit on *Led Zeppelin 1* was recorded with only four mics, two of them the Legenday Neumann U67 (floor tom and a single overhead). The bass drum was captured with an AKG D20 (pictured middle) and the snare mic was a ribbon, the beyerdynamic M160 (far right). The rest of the drum sound on this classic album is comprised mainly of spill!

A soft spot for soffits?

A lot of people these days seem to think a soffited speaker is merely one that has a piece of cloth surrounding its front edge, although I'd wager most facilities with these types of walls are simply trying to get away with *looking* professional. In many respects the last decade has witnessed a great 'unlearning' of how soffit-mounted speakers function and for people like Roger Quested, who designs speakers specifically to work in this way, the frustrations of commissioning speakers for rooms must be unbearable at times. When this idea was put to Roger he nodded agreeably for some time, and then spoke…

RQ: There are people who don't have a clue what's involved in soffit-mounting speakers, that's for sure! For instance, I was once asked to visit a studio that apparently had a 'problem' with its monitoring, and when I got there I quickly ascertained that the 'design' had in fact been simply *copied* from another studio – from a *photograph* no less! And incredibly the owners didn't actually realise that there was supposed to be anything solid behind the fabric of the soffit wall. The studio *looked* like the photo it had copied, but it certainly didn't *sound* like it… and they couldn't understand why!

AS: And the sound of a badly designed room is usually then blamed on the monitors most of the time! That must drive you insane, does it?

RQ: Well, the quality of studio design is worse now than it was 10 years ago. You couldn't make a living out of designing studios these days, so more often than not it's now left to architects whose expertise is in designing sports centres and shopping malls. Consequently, there's a huge amount of glass in a lot of studios now. Some people have glass floor to ceiling, and although it looks spectacular – clients (and architects) love it – it doesn't sound too good. The reaction is nearly always then to find out what the speakers are and blame them for the poor sound!

AS: So are you still enjoying designing speakers after all these years, given this climate?

RQ: Sometimes I get fed up with it, although it's not usually designing speakers that frustrates me, it's more the difficulties of running a business worldwide that can be trying sometimes. On those days I'd sooner be in the garden tending the tomatoes and the beans! But then every so often I'll get a call from one of my existing customers, people like Trevor Horn or Hans Zimmer, to tell me; 'your speakers have improved the way I work'. And that makes it all worthwhile again. It happened to me again this week actually. There's a young guy with a studio here in Sydney, in Surry Hills, a very realistic guy, who doesn't think he's going to make a fortune in the studio, but he wants to set up things properly. It was quite uplifting to be reminded that there's still someone in the business who wants to do it properly, not just as cheaply as possible. It's always nice to be reminded of that sort of thing.

you back on Monday'. Over the course of that weekend I experimented with putting the H108 crossover in the active VS2108 cabinet without the amplifier, because in a bigger box you've naturally got more bass. I quickly re-tuned the cabinet and sent a pair over to New York the following week, and when they heard them they ordered 40! Personally, I think I still prefer the H108. In fact, it's still what I listen to at home.

ROGER QUESTED: THE ENGINEER

AS: Can we go back further to when you first started engineering in the '60s. What do you remember of your first session as an assistant?

RQ: My first session as an assistant engineer came at the beginning of '68 at Olympic Studios in London, recording the Rolling Stones' *Jumping Jack Flash* for *Top of the Pops*. It was quite an interesting first job actually because the film editor had cut the footage up without listening to the soundtrack, so you can imagine what it sounded like. And yet somehow Charlie Watts, who some people argue isn't the most flamboyant drummer in the world, managed to play along to the *picture*, and then the band overdubbed the other bits afterwards onto the eight-track recorder.

AS: So they recorded the track to the film? That's bizarre!

RQ: It was quite bizarre andit was the only time I ever saw that happen. And of course, Mick Jagger was there at the Olympic session, cursing the editor all the while, not realising he was standing right behind him! Olympic was a great studio to train in, we used to do jingles from eight o'clock in the morning and feature films at night.

AS: What was the first album you worked on at Olympic?

RQ: The first album I worked on there was *Led Zeppelin 1* – as an assistant to Glyn Johns. That was an amazing week in the studio, that's for sure. The whole album was finished in a week. From the start of the session to the end of the last mix took seven days to complete, mainly because of budgetary constraints obviously. None of the band members were wealthy guys back then. I mean, John Paul Jones and Jimmy Page were session musicians, so they did earn *some* money, and I'd met John a few times before because he used to do a lot of sessions at Olympic on bass and keyboards. But the other two members of Led Zeppelin were penniless. John Bonham, for instance, was so broke he used to come down to the studio on the train and jump off before it got into the station so he didn't have to pay the fare!

One thing I vividly remember was the mic setup around his kit during that session. There was an AKG D20 on the bass drum, a Neumann U67 on the floor tom and another one placed as an overhead, with a Beyerdynamic M160 on the snare. And to this day I still get people saying to me things like, 'I put those mics up and it doesn't sound anything like that'.

AS: Was the whole band set up in the room together?

RQ: It was. We were in Olympic's main room, Studio 1, which was big enough to record orchestral music, so there was plenty of room to fit the band in there with all their instruments. It was a great sounding room. Most of the vocals were recorded live with Robert Plant in there with the rest of the band, with everyone performing at once. A couple of vocal bits were changed here and there, but most of it was live.

AS: Is that what created the 'sound' of that album more than anything else, would you say?

RQ: It was just the sound of energy, pure energy in the room. *Led Zeppelin 1*'s sound is mainly the sound of very competent people in there getting on with it. I mean, there was no time to waste, they just got in there and did it. I only recently got the album on CD actually, and it sounds twice as loud as modern recordings even though there's no more level on it, it just sounds louder because of the energy levels in the room.

AS: What board was *Led Zeppelin 1* recorded through, do you recall?

RQ: I don't think it had a name back then. The tech guy there was Dick Swettenham; a very clever guy, who later started the company, Helios. So although the console didn't have a name I guess it was – to all intents and purposes – a Helios, given that Dick made it. It started off as a four-bus console. Then when the studio took delivery of the eight-track 3M recorder, Dick added four knobs for the extra four groups – there were no chassis expansion packs back then! It was a good-sounding board.

AS: And after your time at Olympic you moved to Morgan Studios, is that right?

RQ: Yep, I moved to Morgan [in Northwest London], where I stayed for a long time. Originally Morgan consisted of just one eight-track room and the place was working 24-hours a day, with two engineers. It was booked solid all the time, so much so that we had two builders permanently on staff there for a few years building extra rooms. We ended up with four rooms, and eventually the original studio was made into a bar and restaurant.

AS: What albums of note did you record there?

RQ: We used to do loads of stuff. I mean, at one point we had – and I don't think it would happen nowadays – four albums that we'd recorded in the American Top 20 at one time: Cat Stevens, Jethro Tull, John Denver, and The Kinks. I guess Abbey Road would have been the most famous studio around the world, but the two most prolific studios in London at that time were Morgan and Trident. Trident recorded David Bowie and Elton John but in terms of sales we would have been the most prolific.

But my memory is not as good as it used to be. I remember recording The Kinks' *Muswell Hillbillies* there in 1971, mainly because I used to live in Muswell Hill, just down the road. Actually The Kinks were one of my very first customers when I started Quested. They built their own studio in '86 and bought two pairs of monitors off me back then! ■