



PLAIN SPEAKING

Billy Woodman presides over some towering audio engineering achievements

David Price visits ATC Loudspeakers and talks to its charismatic founder, Billy Woodman, about what makes a decent speaker

Billy Woodman is a legend in loudspeaker circles. Few characters have run successful hi-fi companies over four decades, in such a stable and unerring way. Some 40 years since he started Acoustic Transducer Company, it continues to expand and garner popularity in ever more distant parts of the world. Located in idyllic Cotswolds countryside near Stroud, ATC comes over as an informal, quirky and friendly company, yet it's also extremely serious about what it does. The same could also be said of Billy himself. As a student he wrote his thesis on drive unit engineering, and hasn't looked back since then.

DP: What first gave you the idea to start your own transducer company?

BW: It came out of working in Special Projects at Goodmans Loudspeakers in the early seventies. We developed a number of PA products – in fact the Audiomax loudspeaker series – which they decided not to do anything with, and it seemed a terrible shame not to use the technology.

Initially the company was set up to make transducers as good as you could engineer. There's nothing new under the sun so the

aim has always been to better engineer what's already there. We started off just making PA drivers; our first substantial customer was Martin Audio in London, building the systems for Supertramp (that was one of their principal customers). That system had all-ATC drivers in the midrange. I'd had the idea for the midrange dome when I was at university, and it was in 1976 that I made the first successful 3in dome, there were lots of papers at the time that said you couldn't make a device driven at its edge work consistently, successfully.

Was it hard launching a loudspeaker brand back then?

Think about hi-fi at the time; you had Quad, the LS3/5a, Spondors, and they were all good acoustic-quality loudspeakers with no dynamic range, so they wouldn't even replay a piano played at pianissimo. And yet the Americans had loudspeakers that were born out of the theatre, that ended up in studios, and then ended up in hi-fi, that had huge dynamic range and not particularly good acoustic quality. I thought there's got to be somewhere in the middle that you can reach, and the obvious thing to do is if you make the voice coil large enough you can make a

direct radiating device handle enough power to give you enough maximum sound pressure level. And the way to do that is to drive a dome, and although the development process was fairly tortuous the result has been sustained now for a long time.

It was a terrible story really because at that stage ATC didn't have any money, but I tooled it up in such a way so we could make it in reasonable numbers, but no one was interested, really. ProAc used it, Stuart Tyler started using it, and it was not until the advent of digital recording in studios that I could convince any studio to take it seriously. Engineers were made so uncomfortable at the time having to change their recording medium that they were also willing to change their monitoring – it's a terribly conservative business! That created the opportunity for ATC. It started with DJM Music in central London, where much of Elton John's recordings were done, and it slowly grew from there.

When you started ATC, how did you envisage it evolving in the future?

I was entirely driven by making high-quality components, but I didn't have any idea of having a long term vision in 1974! I was

(and am) very into drive units. There were no professional drive units made in the UK – you had Altec, JBL, Gauss – and there was an opening for a professional drive unit in England, that's how we started. If you made a good PA drive unit in the seventies, you had business!

So you were the outsider, doing something distinctly different?

We had an entirely new philosophy. We had to get away from this idea that you could have a loudspeaker of 25W and start off with an efficiency of 88dB at 1W at 1m and be able to replay piano, it was just impossible. You need power to reproduce that huge dynamic range, piano's the worst probably – you're not listening loud, you need that huge dynamic range to reproduce that initial transient.

There was a real loudspeaker orthodoxy in the seventies wasn't there, I imagine that you were given fairly short shrift?

That slowed down ATC's progress. We launched the S50 in 1977, but it wasn't until 1987 that ATC started being taken seriously in the hi-fi world with the SCM50. We were always busy doing other things. We're a broadly based company with a huge amount of engineering skill, so if the hi-fi market isn't working we can go off and work on

The aim is to turn an electrical signal into an acoustic signal as precisely as possible

other projects. There's always things to do, providing you stay with your core skills it doesn't matter which market sector you're selling to. The pro drive unit market in those days was huge, and 75 percent of our production stayed in the UK. Nowadays it's just 10 or 12 percent, things have changed a lot since then because the market has become lowest common denominator and price driven. ATC can't function in that market, so we've concentrated for 20 years now on integrating all the electronics and components into systems. What really differentiates us from the competition is our ability to make components that are at least as good as, if not better than, anything else that's available.

It's interesting that you've steadfastly stuck to a relatively conventional template for a loudspeaker...

I believe the only other loudspeaker transducing mechanism that will produce you the midrange clarity of our soft dome is an electrostatic. The difference is that one has got a huge dynamic range and the other one hasn't. When it's all said and done, any loudspeaker system is only as good as the

bits you start with, so we concentrate on making really good transducers, then integrating them becomes less of a problem because they're well behaved, predictable and all the rest of it. And if you think about it, that's what Peter Walker did at Quad; those ESL-57s were streets ahead of everyone else really.

And why don't you constantly update your range?

You shouldn't keep redoing drive units, I think. It's so difficult to get a drive unit to work really well. Richard has just spent a huge amount of time on the new range of tweeters, and they've got distortion levels as good as some preamplifiers, so there isn't anything really that's going to be better than it. The 3in (76mm) dome came to be, because two inches don't have enough bottom end response, and 3in is a really good compromise. It gives you exceptionally good dispersion, so that not only is it direct sound that you hear – which is one that you make all your phase and tonal judgements on – but it will also excite the reverberant field very evenly with frequency, so that all those fast transients will also be properly presented. Those things are fundamental, you can't mess around and say: "well this year we'll make a 6in midrange!"

In terms of cabinet design, has anything changed since 1977 when you made your first speakers?

Fundamentally it hasn't. As new technology and materials become available we do different things, but that's often to do more with style and presentation rather than the underlying acoustic engineering. We try to minimise the number of sources, especially. When it comes to the midrange you won't see any speaker that uses multiple drivers, we carry through to the lower mid. Cabinet width is defined by the bass driver size, and I think it's simply fashion that drives the narrow slim trend in speaker design. And cost-effectiveness too, because people use the same chassis across four models sometimes. We've always found you get better results minimising the number of drive units, and you get a much better response. You need to sit a long way away from a multi-drive unit design in order to get a coherent presentation.

Do you pay attention to the apparent demands of the consumer market, or have you tried to plough your own furrow there?

If you're going to have any legs, then you need to have a mind of your own. Other than being aware of the technical developments of other manufacturers, the fashion's not that important really. You can't ignore it, but must be driven first and foremost by a logical and pragmatic engineering approach. Also, taste is hugely different around the world. A lot of the

THE HISTORY OF ATC

The Acoustic Transducer Company was founded by Australian Billy Woodman in England in 1974. As its name suggests, the company started off by making loudspeaker drive units – specifically the 12in PA75-314 bass driver, which was widely recognised for its excellent power handling and efficiency characteristics. ATC then launched its SM 75-150s soft dome midrange driver, and it was this that has become iconic for the company. It was technically advanced and offered excellent dispersion, bandwidth and distortion characteristics. It is still in production to this day – albeit in highly improved form – and forms the centrepiece of the company's domestic and professional loudspeaker range.

By the eighties, ATC had started making what it called 'systems', by which it meant complete loudspeakers with drive units set into cabinets, as opposed to drivers. It's a testament to the company's drive unit manufacturing roots that it still talks in these terms. ATC 'systems' found themselves being bought by the likes of Pink Floyd and Supertramp. Work on active loudspeakers began, and the EC23 Active Crossover was the result. Amplifiers were then built in to the SCM50 and SCM100 speakers, making tri-amped active systems. It's only relatively recently that ATC has focused on the domestic hi-fi market; the nineties saw the company begin to make a name for itself in this sector. Meanwhile the company continues to sell to the pro audio industry, to clients such as Sony Music and Telarc.



These hand-made drive units are about to be fitted into the cabinets in ATC's Cotswolds-based factory



Every part of each product is meticulously produced using carefully chosen components, then manually tested



Billy says the new tweeter (one of a few drive units ATC makes) has exceptionally good dispersion characteristics



The factory has a relaxed atmosphere that even includes furry friends!

emerging economies are fairly conservative. They're quite happy in the Far East, for example, for a rosewood, rectangular box.

So the midrange dome is the absolute cornerstone of the ATC engineering approach, in a three-way system?

You can make loudspeakers very consistently if you only ask them to do a 'decade', 20Hz to 200Hz, 200Hz to 2k, 2k to 20kHz, and in two-way speakers you're always fighting to get that last bit of response out of your bass/mid driver, consistently. That's why three-way systems are mostly the best, will give you the best performance. With a four-way, it's a bad enough problem having two crossovers, let alone three. The more you have, the worse your problem. The ATC fingerprint is a three-way loudspeaker with our own bespoke midrange dome – the properties of that midrange dome, its versatility, means we can build such a wide range of speakers. It's used in the SCM40, a £3,500 loudspeaker with a sensitivity of 85dB, up to the ATC Studio SCM300 which is 94dB efficient and found in huge control rooms. That's achievable with a single midrange part, which is key to achieving a

good phase response and tonal balance in the midrange.

It's effectively an evolutionary process, there has been some changes to the magnet over the years, and the waveguide profile has changed to improve off-axis response, and the adhesive used has changed. But it has been a great mainstay in the professional market because someone can go and mix on a pair of SCM25s and take them back to a studio where they've got SCM300s, and the balance and tonality will be entirely recognisable. Engineers who have used ATC will happily say that they can do a final mix or master on either. That was never the case before, that's why there were always so many small loudspeakers floating around studios. I think you'd be surprised; if you listen to a pair of SCM7s or SCM11s, then listen to SCM50s, you'd have no doubt that they were the same family of loudspeakers.

You talk about 'neutral' fidelity, what do you mean by that?

The aim is to turn an electrical signal into an acoustic signal as precisely as possible. The differences that are produced we make sure are benign, so they don't give a disturbing

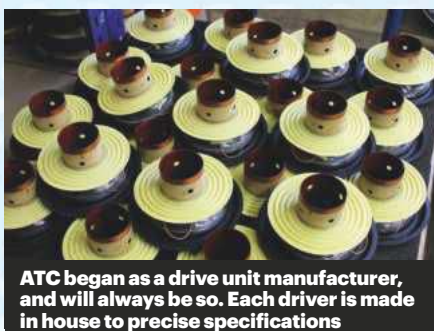
character. All the engineers here keep working on developing new parts, and as we make improvements in materials and methods we incorporate them. We've never been known for making a big song and dance about things unless the change is enormous; usually all these changes are incremental. By the end of a model's production run, all the changes will have been incorporated. We're very confident that if you give an ATC speaker a fair hearing it will represent itself well. I think a hell of a lot of people know us because of our transducers, as much as our speaker systems.

So what would you say is the essence of ATC as a company?

We're one of the only loudspeaker companies left that is truly concerned about transducer design, and the neutral sound that comes from it. That's a mistake that lots of loudspeaker manufacturers make I think, they lack consistency in their product thinking. They make this, then they make a small range of it, and then they go off on a tangent and do something so vastly different that you wonder if it has come out of the same philosophical stall. ATC has a strong idea of how things should be. If a company becomes market driven, you get driven off course, you turn over a lot more money. We're more of an old-fashioned company in the respect that we operate more like a

You must be driven first and foremost by a logical and pragmatic engineering approach

family business than a large corporation, it's a long-term sustainable business. We've never ever been flavour of the month, we've always been floating just under the surface, I'm much happier there actually! We haven't tried to achieve and then force growth artificially. If you're to move large volumes you have no choice but to have an active marketing department, whereas ATC has grown organically. The sales are on the strength of the products. That's why over the years we've sold to Yamaha and we've sold to Pioneer and other people because it's not worth their while to enter it; it's a finite market and we have a healthy share of it ●



ATC began as a drive unit manufacturer, and will always be so. Each driver is made in house to precise specifications



This is how it started. ATC's iconic midrange dome – a powerful yet detailed sound that has become legendary



ATC also makes a range of very high quality electronics; seen here is the P1 Dual Mono Power Amplifier