

# The sound of success

Offering a welcome alternative to international loudspeaker lines, Australia's Acoustic Technologies has developed from a clear understanding of its own market's needs

**ACOUSTIC TECHNOLOGIES IS THE** largest manufacturer of pro audio equipment in Australia – and also the longest established, having just clocked up 37 years in business. Specialists in line array loudspeaker systems and speaker enclosures, Acoustic Technologies recently expanded its product range to include dual and multichannel amplifiers with onboard DSP, along with line array modelling and prediction software. With an ever-increasing domestic client list, a growing export operation to Europe and Asia, an Entech Best New Sound Reinforcement award in the trophy cabinet and an expanding product range, this Brisbane manufacturing success story is certainly on the move.

Acoustic Technologies' founding director Harry Lloyd-Williams began the business in 1972 building speakers in his house in Ipswich, a 40-minute drive from Brisbane. Working in a music store at the time, he was inspired by the sound of a valve guitar amplifier manufactured by Brisbane-based Victory Audiophonic Sound Equipment (Vase). 'I was playing guitar in a band and through working at the music store I became aware of a fantastic valve guitar amplifier called Vase,' he recalls. 'It was the amplifier of choice for

all the rock musicians around Australia at the time. I convinced the owner of VASE to sell me just the amplifier head, as I wanted to build my own speaker cabinets. This led me to building speakers for other musicians.'

A couple of years later Mr Lloyd-Williams was joined by Richard Faint, who took on responsibility for the electronics side of the business. Today Mr Faint is a fellow director and design engineer for the company, and controls the research and development activities, while Mr Lloyd-Williams heads up sales, marketing and customer support functions. Keeping a clear focus and having an overwhelming passion for music and sound, they began to attract like-minded people and started building the company team. For Mr Lloyd-Williams it is the long service of all staff that gives the company a competitive advantage.

Apart from Mr Faint's 30-year tenure, Mr Lloyd-Williams cites Ron Delbridge, internal sales coordinator and transducer technician of 26 years standing; Rod Willis, manager and programmer for the cabinet construction department of 25 years; Paul Lister, production manager for speaker systems of 23 years; Darren Grimsby, fibre-glass production and final assembly of 10 years; and Wendy Christy, accounts administrator of seven years and Phil Norfolk, speaker production final assembly of seven years as key personnel.



**Acoustic Technologies' Tina Lim with Charkit and Narudom Therdkiet of Laserwork, a Thai company that has recently purchased a Blackbird system**



**The team – Richard Faint, Pascal Bonnet, Ron Delbridge, Harry Lloyd-Williams and Tina Lim**

'The spirit of Acoustic Technologies is based around the long serving employees' passion for this company,' says Mr Lloyd-Williams. 'All this adds up to a wealth of experience in all aspects of our business. Because we are a tight-knit group that has grown as the industry has evolved, everyone has been called upon to stretch their skills and grow with the company. While this sometimes causes initial apprehension, all involved have benefited greatly and grown through the process. The resulting sense of accomplishment and pride results in the passion and spirit that I mentioned earlier. This has resulted in AT becoming a very efficient and forward thinking company.'

Acoustic Technologies manufacturing facility is situated in Seventeen Mile Rocks, 15km from Brisbane's CBD and occupies two buildings side-by-side. The first houses the production office which contains the computer numerical controlled (CNC) programming area, the R&D area where Mr Faint is located, the final assembly and dispatch area, the cabinet manufacturing area (which also houses the large CNC wood working machines), as well all the ancillary tools to manufacture cabinets. 'Our build quality is as good as you can possibly get,' Mr Lloyd-Williams asserts. 'We use all CNC wood machines to precisely cut all of our

first grade Finnish Birch plywood for our cabinets.'

A separate metal machine shop is attached to the building and contains the guillotines, presses and fabricating equipment that manufacture their internal flying hardware, grills and Architectural Line Array (ALA) products. Further, at the back of the building is their coating shop, where speaker cabinets are painted and coated using a poly-elastomer coating machine, which results in tough, water-resistant cabinets.

The second building houses their main showroom that doubles as a seminar/meeting room, sales offices where Lloyd-Williams resides and their general administration and reception areas. The bulk of the remaining area is for stock warehousing. Additionally, in a separate building at the rear is their fibreglass facility where all their prototypes and moulds are made for their hi-frequency devices.

Although a loudspeaker manufacturer for more than 30 years, Acoustic Technologies has embraced technology to aid it in design and production and uses design tools from Linearx, including the Loudspeaker Enclosure Analysis Program (Leap) and Loudspeaker Measurement System (LMS) proprietary software, as well as Audio Precision analysis equipment – which, according to Mr Lloyd-Williams, provides data and polar plots to be generated quickly and easily. 'As we did not have computer aided design software and electronic processing equipment available in our early years of production, all of our products were designed and produced using no external processing to tweak them,' he says. 'Our cabinets have a very clear, uncompressed natural sound, and with minimal processing that is available today, we have a world-class speaker system.'

The current product line available is broken down into the Blackbird line array series, loudspeaker enclosures, electronic equipment and software support. The Blackbird line array series consists of the TLA306 that features two high-output 6-inch Neodymium transducers (one dedicated low-frequency unit and the other for mid-frequency) and a 1-inch exit compression driver coupled to an Isophasic Diffraction Aperture (IDA) to handle the high frequencies. The matching TLA306B sub-bass loudspeaker has a proprietary 12-inch LF transducer developed specifically for the TLA series.

The more powerful TLA308 model features 8-inch transducers, and its matched TLA308B sub has two 12-inch sub-bass drivers. The TLA312 system comprises one 12-inch bass driver, two 6-inch mid drivers and IDA system. There is Blackbird sound level prediction software for highly accurate modelling.

According to the company's website, the Blackbird Flying Hardware System allows vertical arrays of up to 24 cabinets to be suspended. Inter-cabinet angles are adjustable in various increments with the pivot point located at the front baffle to maintain the integrity of the HF aperture. The flying system is designed so that all parts are captive to the cabinet frame ensuring no parts are lost in transit. The fly-header bar may also be inverted for ground stack applications. Additionally there is the Firebird composite line array system featuring the CLA 1000 with eight 8-inch low-mid drivers and eight 1-inch IDAs plus the CLA LF2000 sub fitted with two 1-inch sub bass drivers. 'The best thing about our products is that because we are not a gigantic company with large overheads, we have a "no compromise" approach to our products,' says Mr Lloyd-Williams. 'We design all our products from scratch including all the cabinet designs. The high-frequency horn flares are all designed and developed in our facility and all components are from the top transducer makers in the world.'

The loudspeaker enclosure product line consists of many models in all shapes and sizes for different applications. The TH series is lightweight and portable for duos and small bands, while the LG compact series is suitable for boardrooms, small bars and retail outlets. The ALA architectural line is designed for aesthetic use (over 70 décor colours available) as well as sonic and suitable in restaurants, home



**Custom cylindrical speakers manufactured by Acoustic Technologies for the New Zealand Parliamentary Debating Chamber**



**Acoustic Technologies Staple Street HQ**



Production manager Paul Lister checking QC

theatres, retail stores and art galleries. The FR (full range) series loudspeakers are designed for live music venues and dance clubs, while the CS special application cardioid speaker provides a cardioid polar pattern that makes it well suited to paging systems and law court applications. The company also produces monitor wedges (SF series) for live performance, a sub-bass range (BB and SB), and enclosures for audiovisual installations.

The electronic equipment line currently consists of two multichannel amplifiers, the FLA8 and the QDC42. The FLA8 is an eight-channel audio amplifier with integrated DSP to deliver great sound in complex installations. The QDC42 is also an eight-channel amplifier with a PC based graphical user interface (GUI). 'With Richard Faint heading the R&D section, we have had a seamless journey over 30 years of audio design progress,' says Mr Lloyd-Williams. 'Richard has the ability to listen to the clients' needs and deliver a suitable solution.'

And listen they do. Sydney, Melbourne and Adelaide-based ICE Design Australia is a consultancy specialising in audiovisual system design and room acoustic engineering for courtrooms and houses of parliament across the Pacific Rim. Formed three years ago, the company brings together 60 years of experience in the acoustic and audio engineering talents of Glen Leembruggen, Rod Louey-Gung, David Gilfillan and Mark Hanson.



The Cabinet spray booth

'The desire to innovate has been one of the key elements to our successful collaboration,' says Mr Louey-Gung. 'The loudspeakers we have developed with Acoustic Technologies are unique in the world market, providing Australia and the region access to specialised product at a price point that cannot be met by larger international manufacturers. Within the project constraints, they have always strived to ensure on-time delivery and provide excellent product support.'

A recent project was the New Zealand Parliament in Wellington where six bespoke KWT1 and KWT2 loudspeaker arrays designed by Mr Leembruggen and Mr Gilfillan were hung in the debating chamber. 'The results in this project were excellent and reflected the interplay of many factors,' Mr Leembruggen offers. 'Among those factors were the skill and accuracy of our design work and

the quality and value of the products supplied by Acoustic Technologies.'

The Queens Square Law Courts in Sydney was another recent project using ALA07C beam-steered tapered line-arrays – again designed by the Leembruggen-Gilfillan team – installed in each courtroom along with FLA8 processor/amplifiers. The ACT Law Courts in Canberra had CS6 cardioid loudspeakers installed along with QDC4.2 amplifiers that provide beam steering to shape the cardioid pattern. 'Acoustic Technologies is one of the few manufacturers in the audio industry in Australia prepared to provide development support for bespoke audio systems,' says Mr Gilfillan.

'They are interested in developing new ideas and exploring how to make audio systems perform at their best. The CS6 models installed across 23 platforms at Sydney's Central Station and various court rooms around the country, provide an inexpensive, effective solution for reverberant areas by providing excellent pattern control.'

As Australia's largest supplier of professional audio rental systems, Norwest Productions has been involved in many high-profile events including the ceremonies for the Sydney and Athens Olympic Games, the Rugby World Cup and World Youth Day. Norwest also specialise in large-scale event audio as well as music festivals, touring and corporate audio. Norwest general manager in Queensland, Graeme Whitehouse, is pleased to work with 'a company that listens': 'Acoustic Technologies listened to what we – the live audio industry – needed out of our speaker systems and produced products to suit those needs,' he reports. 'The end result is speaker systems that perform the way we want, rig the way we want and above all, are made in Australia which is a huge bonus for us, both financially and on a service level.'

Mr Whitehouse explains that Norwest owns many different Acoustic Technologies products with favourites being the Blackbird TLA312 line array system ('it's always busy, be it flown 16 deep for an orchestra in the park or stacked four-high in a ballroom'), the large amount of SS24 speakers in their national inventory ('they're our favourite 12-inch + 2-inch box ever, incredible performance but quite light given their design') and SFM09 wedges ('which was a product the company developed with some input from us specifically for the live television and corporate audio market'). 'Acoustic Technologies is a hands-on company actively involved in developing products to suit the needs of its client base,' says Mr Whitehouse. 'Norwest's inventory is a collection of the world's best audio brands, and Acoustic Technologies fits right in.'

For Brisbane-based Pro Audio director Steve Pannan, a long-time user of Acoustic Technologies products, it comes down to the quality of sound and minimal need for equalisation: 'Acoustic Technologies build boxes that you can connect a microphone to a mixer and then into a power amp and have a wonderfully flat sound with no bumps or hollows,' he says. 'I've used very little to no EQ with all Acoustic Technologies boxes stretching back to when I used the FRO1 model for the first time. I

was blown away when we set up a PA for a band and I switched off the FOH EQ.'

For Mr Lloyd-Williams, the growth of Acoustic Technologies has resulted in running out of space at their existing premises and a plan for expansion for the future: 'The next step is to build a new high-tech manufacturing facility which will incorporate an R&D department and an audio research centre with an anechoic chamber,' he says. 'We are close to releasing our high-end powered network controlled speaker systems which will include state-of-the-art DSP, and we are also developing new technologies based around compact steerable line array systems, cardioid speakers and heard but not seen (HBNS) compact systems producing hi definition information.'

There is one final exciting piece of news for Mr Lloyd-Williams. Inspired by the Vase valve guitar amplifier that led to building speakers part-time in his Ipswich house all those years ago, he was disappointed to see the company disappear in the early 1980s when the original owner died: 'We are now in the final stages of bringing back to life this fantastic brand. I guess I've come full circle.'

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