

CXTM

With the best from

EQ

4 Line Arrays compared

5 things that kill your mix

- Working in Thailand
- Neil Diamond Live
- Using Jands Vista

REVIEWS:

Tascam FM-1082, Wave Arts Power Suite, Pulsar Chroma Panel, Digital Performer 4.5.2, Native Instruments Battery 2, Blue Robbie Preamp, ETC SmartFade, and 4 more!

Pic by Josh Gum

ISSN 1320-5595

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In the tradition of
Connections

All About
Sinewave
Dimming



FEATURES:

- Shure's patented Audio Reference Companding
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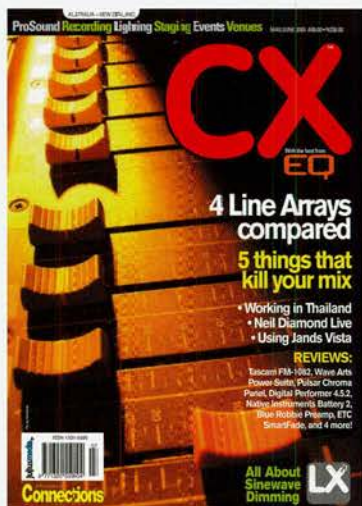
This sexy Italian speaker system is available for rental from the following companies:

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- VIC: ENTERTAINMENT WAREHOUSE- (03) 9315 1255
- WA: MUSIC PARK- (08) 9470 1020
- TAS: FRONTLINE- (03) 6331 4122

For more information & dealer locations, visit the Australian Distributors website: www.cmi.com.au, or phone CMI on (03) 9315 2244

CX

EQ LX



A reader - Josh Gum - sent us this terrific picture, so we have paid him and used it on the cover! Send us your images, you never know. What we use, we pay for. Email hires jpegs to mail@jujusmedia.com

Winner!

Richard Glover from Freemantle has subscribed and wins a training course worth \$2,625. To subscribe, log on to www.jujusmedia.com or call 1-800-635-514

FROM THE PEOPLE WHO
ONCE PUBLISHED
CONNECTIONS MAGAZINE

• CX # 4 MAY/JUNE 2005

This issue is generally organised into four sections. First are NEWS and LETTERS.

We have a good bunch this issue. Our NEWS section takes a good look at the largest trade show of kind, in Germany.

Then comes FEATURES, with a most excellent look at working in Thailand, and why many people have the wrong perception of this beautiful country.

The Best of EQ pages follow, with a bunch of concise reviews and how to stories.

Then our LIGHTING section details what is going on. The pic below is of a LED wall with a difference - in Melbourne. Read on!



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Active. Driven.

EX 12

High definition audio requires a high precision instrument.



Meet the EX12 Active Full Range, 12-inch, Two-Way speaker system. Proud new member of the EX Series family—a new breed engineered from inspiring breakthrough technology designed to shatter conventional passive thinking.

The EX12 is an active, high-precision speaker system that is compact, flexible, portable, easy-to-use, ergonomically designed and extremely powerful.

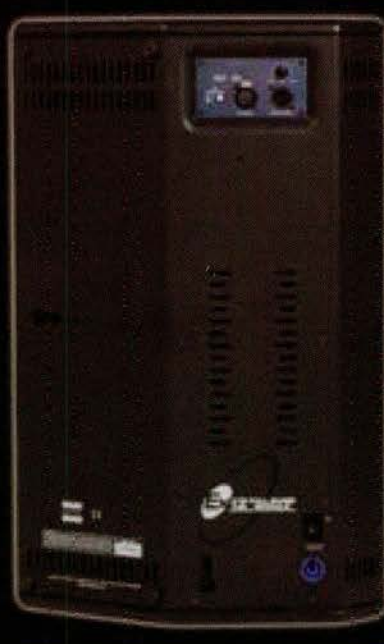
Every component of the EX12 has been meticulously engineered to unlock its full potential. The new large-format 3-inch compression driver features a new treated titanium material used in the dome assembly that has dramatically improved resonance characteristics and improved dampening resulting in lower distortion artifacts and improved frequency response linearity. It provides high-frequency output and definition never believed possible from a compression driver. The driver and the advanced trans coil 12-inch woofer are driven by 500 watts of high-definition amplification developed specifically for the EX12.

Recently, the UK Magazine MI Pro wrote the following after listening to the EX12:

These speakers sound fantastic. Stunning. As crystal as your grandmother's sherry schooners. And they have some punch too....If there is any coloration, it is a hint of warmth and welcome.

We invite you to listen to the EX12 and the rest of our EX and ES Series products. You can find out more by visiting our web site, contacting your local distributor or by simply giving us a call.

At KV2 Audio, we love the gear. We love creating products that turn heads and we're proud of the EX12—a breed of its own that re-defines the 12-inch, two-way category.

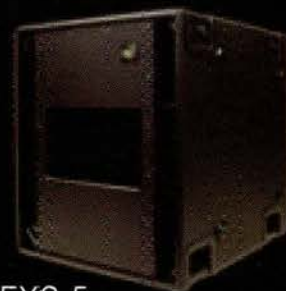


EX2.2 & EX2.5 Active Subwoofers

The EX 2.2 and EX 2.5 each use a version of our proprietary high efficiency, high current amplifiers delivering 1000 and 1600 watts, respectively. The EX 2.2 can be used in stereo or mono configurations with high pass outputs. The EX 2.5 features mono I/O and a higher level of system control. Both provide incredible, high quality, bass performance and total flexibility from a standalone, small footprint cabinet. Use to extend and complete the picture when used with the EX 12, or integrated into any passive or active speaker system.



EX2.2
1000-Watt Dual 12-inch
Active Bass Module



EX2.5
1600-Watt Dual 15-inch
Active Bass Module

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Building a studio

We've come a long way. Several years ago you could rightly think we had inadequate coverage for the studio dudes. Then we cemented the EQ partnership, and our magazine sales took off. Now we are building a recording studio here at Juliusmedia HQ. Not a little one, either. It has decent sized (6m x 5m) control room, and the same again for a studio.

It is the love child of Rob Zimola, who has for the past 20 years or more run his professional studio and audio college in Sydney. For anyone to survive in the shrinking recording market, they need something special. In Rob's case, it is Rob himself. He has an attitude and an honest way that people see and like.

Putting Rob's studio into our HQ helps CX magazine to be closer to our subject matter.

Whoa! Cancel the rider

A mate works at an upmarket convention venue where management have issued a directive to the food and beverage department not to serve alcohol to visiting entertainers. The policy has caused an uproar, especially when a hire (client) books a band who then expect the contents of their rider to be waiting on ice in the dressing room. And it isn't.

The management did a risk analysis and decided if an entertainer stacked their rental car on the way home, and were full of venue booze, then the venue management would get the big penalty from the court. Or worse still, a lawsuit from the record company for lost earnings. I'm not a lawyer, but it sounds like a plausible risk.

I would love to be there when any one of the more infamous bands on the convention circuit turn up to find Diet Coke is all they can get.....

Loving each other (and Tom)

This mag effectively started almost 15 years ago when Jands hired me to publish their Channels newsletter. 2 years later it grew into Connections, made possible with Jands' support by selling the Channels mailing list to me. CX then morphed from the 10th anniversary Connections.

Until recently Sonics magazine was the longest serving journal of note in our industry, it lasted 14 years, 8 of those years with editor Cathy Grey at the wheel.

In my 15 years publishing, and in the 18 years I spent doing sound and lighting before that, I became aware that people like to talk about people. Mainly I am fairly relaxed when I hear half truths and distortions about myself. But I'm not so relaxed when I hear rubbish about other people. Can't we just be kind to each other?

As we are a journal of some note, I regularly get emails and calls from people who have been maligned or defamed by others. Some are hurting, and they call me to ask how I can

help put the record straight. Sometimes its possible, but more often I sympathise and tell them I've not heard any of the idiocy they are worried about.

The moment passes, and life goes on.

On this theme I actually feel a little sorry for Australia's self proclaimed richest audio identity, Dr. Tom Misner. Owner of SAE.

He has been hounded by a former associate who is unable to move on after a bad time he had with The Tom 25 years ago. Whenever any media outlet contemplate a story on Tom, they Google him and eventually stumble over his nemesis, who goes on record to tell the same story, time and time again. It happened 25 years ago, for goodness sakes!

Tom has other critics, but the one guy I am talking about is really over the top. Tom doesn't need me or anyone else to stick up for him. He lives in splendour above Byron Bay, and is listed as having \$60 million in property without any mortgages. His business is incorporated in a Dutch tax haven and his network of 40 studio schools around the world mean that he is fully insulated against pesky regional problems. Like Governments.

His book 'The Misner Factor' was reviewed by CX (check our website, www.juliusmedia.com). It has its own website boasting of the contents. The book is outrageous in places, it lays into everyone who has crossed The Tom, especially former staff. He named people he suspects(!) have stolen from him. It has generated a lot of legal action. But Tom doesn't care!

The book website, (www.doramusic.com) by the way, quotes me several times very selectively and with a few key words changed. Anything for a book sale, huh?

Anyway, Tom is astonishingly resilient. He turned up again in the Weekend Australian recently, on the Wealth page, boasting about his exotic collection of cars.

I quite like the guy, even though I don't agree with his methods. Mainly, selling studio courses without career outcomes. There are no jobs in studios, but don't starve me.....

Readers write for us!

In this issue you'll find a bunch of Reader Contributions. I asked for it last issue, and I got it. Keep them coming, I'm writing a cheque to everyone whose material I use. I'll also pay for photos. Come on ... do it now.

- Julius Grafton



How Rude!

Letters, emails and flames

Keep them rolling, to mail@juliimedia.com

Safety idea

I'm writing in connection with the Bosun's Chair idea mentioned in 'Gravity Takes No Vacations' in the March/April edition.

It's interesting that this doesn't appear to have been widely used to date although I suspect, with the growing concern about compliance, that it might become more popular as an alternative to complex ladder/genie solutions and especially to fall-arrest.

My first awareness of this was in 1969 for a production of 'Man of La Mancha' at the Piccadilly Theatre in London for which the whole stage floor was removed save for a small island floating in a blacked out stage basement.

Each lighting bar had a track alongside, along which ran a cage containing the electrician. The system was designed by Ian Albery whose family then owned the theatre, and was constructed by Hall Stage.

Further information is contained in Strand's venerable 'Tabs' of March 1969.

Interestingly I've just been exploring a version of this in Perth for bars over a complex seating area except in this case the track carries a galleried platform ladder which runs to the appropriate place next to the light and then pulls down like a New York fire-escape ladder.

I think it's important that some lateral thinking like this is done to offset the over-zealous application of some of the working-at-heights guidelines.

-Graham Walne, Perth

Coda has big Milo rig

Just reading your article about Rod Stewart tour and want to raise a specific point. Oceania were able to concurrently do the KD Lang tour as we supplied the Meyer MILO inventory and expertise to make it happen.

FYI we now have an entertainment centre sized MILO system comprising 24 x MILO, 4 x MILO120, 8 x 700HP, with our sizeable M3D inventory able to act in support.

In addition to KD Lang, the system was recently in use at the Hillsong album record (to great

reception), and the New Mardi Gras party (Horden venue).

- Simon Lear, Project manager
Coda Audio Services Pty Ltd

Worship Technology

I just wanted to say what a great thing it is that you are covering the technical side of houses of worship such as Hillsong and Paradise. You are to be congratulated for this article last issue!

It is a large growth area in this industry and far too many people underestimate it.

Thanks for keeping us up to date

- Wayne Crook

Strongly disagree

I strongly disagree with the anonymous writer in your Feedback Letters (CX Mar/Apr).

First up in my opinion it is very shameful for him/her to criticise you while not revealing his/her identity.

Secondly; it is far from "first class idiot" behaviour to run a story such as "Novatech Locked Out".

On the contrary I think it is the duty of CX to continue publishing stories such as this. Furthermore without a publication such as CX these issues would not see the light of day, and none of us would have a forum to voice our views.

Lastly; the closing comment by (Name withheld...) "...within their venues, they are the ONLY production supplier" is just plain wrong! Over many years I have supplied PA systems and/or Lighting to my clients at numerous venues in Melbourne including: Carlton Crest, Crown, Crown Promenade, Hilton On The Park, Le Meridien, Park Hyatt and Stamford Plaza.

In addition to private functions such as weddings, some of these gigs have been concerts, conferences, product launches and office parties.

In each case I have been contracted as I can provide a better value service than the in-house production company.

In each case I have been fortunate in that the relevant client has been smart enough to realise that they had every right

to choose their preferred production company over the in-house production company.

- Mark Barry
B S Sound (Melbourne)

Beatup in Adelaide

Anonymous get it weirdly right in the last issue, according to your website. Very strange.....

- Anonymous the second

Grand Piano correction

In the final paragraph of "The Grand Piano (and the sound engineer)" by Alan Mourant, the reference "Distributed by Steinway" is not true.

Steinway & Sons does not distribute Fazioli or Young Chang pianos. We distribute Steinway & Sons, Boston pianos and Essex pianos only. Thank you for mention of Steinway as one of the most renowned pianos in the world.

- Andrew Rearley, Steinway

AMX -vs- Crestron

The below is a response re: your April article entitled "Crestron Determined to Short Circuit AMX."

AV Technology has been distributing AMX products for 15 straight years, and during this time, Crestron has gone through six different distributors.

AV Technology continues to provide unparalleled and consistent sales, support and service to AMX customers in the region.

We are not phased by the fact that a new Crestron distributor is coming on board because none of the six in the past 15 years have been able to overcome the challenges Crestron has in that region and others worldwide.

AMX has been filling the "holes" Mr. Klein refers to not only in the Australian market, but in many worldwide.

We'd also like to address Mr. Klein's comments on the two companies' revenues and market share.

It is easy for Mr. Klein to quote any revenue and market share number he likes because Crestron is a private company and is not required to disclose their numbers as AMX has had to

do as a public company.

Now that AMX became a private company this month after we were acquired, we could report any numbers as Crestron does, but we prefer to take the high road.

- Rashid Skaf, AMX Executive Vice President, AMX Corporation

Privacy

It's very useful to maybe tell everyone about the Privacy Act.

Regularly I get people wanting Credit Checks on our customers (payment terms, history, amount of sales with us etc) or employees regarding their income etc.

My understanding is that such a request should only be in writing so I get them to fax something over and I then have a document on letterhead etc to check, complete and return.

So a really simple rule of thumb is 'Not in writing, not on'.

- Damon Hartley Norwest Productions Pty Limited



Fake Shure Mics

Just a short note to alert CX readers that there are a few people selling duplicate Shure microphones on Ebay. One such person operates in Melbourne under the nickname of desireaudio.

The mics are duplicate and look very close to the original. One way of picking them is that they do not have a split barrel. The original Shure SM58 has a split barrel that can be unscrewed. This guy has sold many.

Charles Walker, Imperial audio, Melbourne

• Shure say they investigating, ring Jands (Australia) on (02) 9582-0909 if you need advice.



World's largest Light + Sound Expo

Julius Grafton reports from Frankfurt

The Frankfurt music show comes with various names, like Musikmesse and Prolight + Sound 2005. To anyone in the sound, light or music business it's just Frankfurt.

Held every year, this is the largest trade show of its kind in the world. It is also the most confident, having grown every time it is held, which is during the first four months of each year.

How big is big? How about huge. The show is held in the Frankfurt congress centre, itself a series of trade show halls strung in a line so long there is a shuttle bus to get you from Hall 1 to Hall 10.

The size of the show left me reeling the first time I visited, until I realised that different segments or clusters of exhibitors were lumped together into common halls. Pro Light and Sound occupies three halls, there are halls for guitars, halls for pianos, and halls for most everything else.

There were 1,533 exhibitors (!) in the Music side, with a further 717 exhibitors on the Pro Light + Sound side. Together they saw around 101,000 visitors across four days.

For anyone seeking answers, this is the place. Walking the halls you'll wear out your shoe leather and your legs, but in the Pro Light + Sound halls you'll see first hand every important brand in our entertainment

technology world. Plus about 2,000 wanna-be brands, including a growing forest of Asian manufacturers with weird brands.

Ten years ago when I went to a trade show I came home with 40kg of printed literature. These days all I have are some links, as I can research the things I see on the web.

I spent many years going to a lot of shows - in Europe, Asia and the USA. Recently I haven't been to any, and the break did me good. I found everyone I wanted to see at Frankfurt in one day.

Of all German cities, Frankfurt is possibly less than ideal as a tourist destination. We came for the show, and the infrastructure in the city works very well. The taxi ride from the airport is just 20 minutes, at blistering speeds on the autobahn. The congress centre is just two blocks from the main railway station.

Germany has a massive sound and lighting industry, with a population of 82 million.

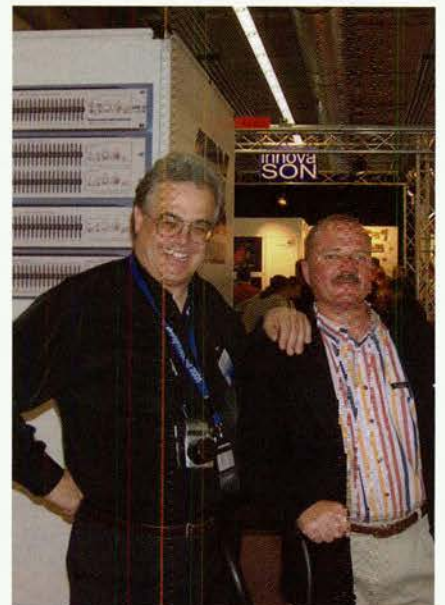
The strong Euro has hurt German manufacturers who export, but you wouldn't know it when you look at German microphone manufacturer Sennheiser. They had banners strung over the main road in Frankfurt; and reported turnover of 237 Euro's (A\$394 million) in 2003. They have 1,600 staff.

Frankfurt is the place to see more exhibits in less time, due to well organised halls. It is also the place to exhibit, if you make things

you want to export. I noted a bunch of manufacturers from down under were present, including Melbourne firms LSC and ARX. ARX regard Frankfurt as their most important show, and always have the same stand location.

ARX Directors Duncan Fry and Geoff Park are pictured below.

(continues)



MusikMesse

(continued)

The almost unbelievable proliferation of asian brands on the world light and sound market continues unabated. One that stopped me in my tracks was Shirit (their typo) or Spirit.

Soundcraft established this brand in 1991, and recently discontinued it. They may have sold it to the Guangdong Soneg Audio Equipments Co, Ltd. Somehow, I think they didn't. I think the good guys at Soneg may have pulled a swiftie.

Mind you, they could have been in line for a process server too. I saw a remarkable event at another dubious exhibit.

A posse of what appeared to be highly paid German lawyers, with at least several uniformed process servers of some kind were laying a writ on a guy who quickly claimed he could not speak any relevant language.

An American bystander, who claimed to be just an American bystander, seemed to have an intimate knowledge of the activities of the exhibitor. To wit, they were, he claimed, copying a trademark or worse. The writ was answerable in a German court.

The exhibitor principle ran off yelling into his mobile at someone, presumably his embassy. Exciting stuff, but I



couldn't get a photo because it was all over too fast.

Other interesting things:

MIDAS had a massive presence but were saying nothing about their widely known digital console.

DIGICO had a large press rollup for their press conference, but many misunderstood the D-Tube product, thinking it was news of a D2 console. Bob Doyle is pictured at right with his German rep.

DIGIDESIGN showed a working version of their new

SHOW console, pictured at bottom left and right.

Studer were also showing their Vista 8 Digital Live Production console. It sells for too much, but you may see some of the technology appear in a Soundcraft console sometime soon.....

- Julius Grafton travelled to Frankfurt as a guest of the German consulate.

LSC Lighting Systems' Alan Graham



A Perfect 10.4

10.4" screen size | 3D graphics | video capability | built-in 2-way audio | modern exterior

The new TPS-4000 touchpanel is the **perfect fit** for your next project featuring the **10.4" mid-size display** screen you've been asking for, the **incredible performance and graphics** you've come to expect from Isys®, a **sleek new look** your clients will love, and a **price point you won't believe**.

TPS-4000 is the ideal interface for presentations, meetings, training, videoconferencing, education and for today's connected homes.



New Look for Isys®

The new TPS-4000 inspired us to give the entire award-winning Isys line a modern, two-tone exterior. Isys is available in 6.4", 12", 15" and now 10.4" display sizes.



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Frankfurt 2005

I scream of Jeannie? Islands in the scream? Scream lover, where are you? Duncan Fry reports.....

See if you find this annoying: at this year's AAAAAAAAAAAGH! Frankfurt show the entertainment on the AAAAAAAAAAAGH! EV/Dynacord stand was a screaming contest where a bunch of AAAAAAAAAAAGH! dipshits would sit at a table AAAAAAAAAAAGH! and scream their heads off at AAAAAAAAAAAGH! each other every half hour AAAAAAAAAAAGH! every bloody day of the show.

If you think that's annoying to read, then think about how much worse it was being on a stand trying to talk business to customers who have come thousands of kilometres to buy from you. We were some distance away and it was bad enough – complaints to the show organisers from the adjacent stands started about 10 seconds after the first AAAAAAAAAAAGH! scream, and rightly so. Levels measured 113dB before being squirted through a PA system, and this in a designated 'quiet' hall. The temptation for people on nearby stands to wander over and see just how loud someone could scream with the microphone jammed down their throat as far as an arm could reach must have been hard to resist.

Proudly presided over by 'Noisy Mama Carola Grey' the loudest (or ugliest) contestant got to answer questions to win a ticket to London for two. Perhaps second prize was a return ticket?

Who on earth thinks up this shit? What marketing genius at EV/Dynacord thinks it's an effective way to market high end pro audio? And more to the point perhaps: who amongst the show organisers allows them to get away with it? Perhaps the EV/Dynacord stand being one of the biggest (and therefore most expensive) in the hall had something to do with it.

Apart from this aberration, the show was a lot of fun, despite the new 9 am start, instead of last year's more civilised 10 am, making it much harder for people working on a stand to get a chance to look around the show before opening.

Maybe it was my imagination, but there seemed to be less speaker

boxes this year...not! Honestly, there were more than I've ever seen before, of all shapes and sizes, but especially the line array. If it was possible to flip a box on its side and bolt it to some others underneath it, then it was touted as a new line array. When I walked up to the cafeteria to get a coffee, I half expected the guy behind the counter to ask if I wanted to see the new line array that he had designed. Enough already.

On a positive note, though, at last there's a compact line array where the rigging/angling/flying equipment doesn't cost more than the cabinet itself – the Meyer MVC-5 all in one mini line array. Basically it's the guts of

five of their M1D cabinets packed into one box, just slightly bigger than a twin reverb flipped on its side. Neato.

The Alto Orient Express was cute, too. Two speaker boxes, mixer and powered sub folded into a small version of a high-speed train locomotive. I wondered if it ran on diesel.

Reflecting the ever-increasing amount of offshore manufacturing, I estimated that the size of the 'Chinatown' component in each hall had doubled in size. More and more OEMers with stands chock full of equipment very similar to the stand next to them. Some high quality, some less so. You pay yer money and takes yer choice, as the fairground barkers used to say.

The Chinglish (Chinese/English) in their brochures was another matter totally. English is a complex language with many shades of meaning, much like Mandarin Chinese. Now, if I was putting together a brochure in Chinese, then I would make every effort to ensure that the translation was as good as humanly possible, and that at least one native Mandarin speaker had vetted the copy for mistakes. Not just

continues)



Omniac JD or Hartle-caster?





J-5Ba 5" 2-Way Powered (60+20w)
 J-5BcW 5" 2-Way Powered (60+20w)
 J-5Rc 5" 2-Way Powered (60w)
 J-5B 5" 2-Way Passive
 J-5BW 5" 2-Way Passive
 J-53T 5" 2-Way 100v Passive



J-8Ba 8" 2-Way Powered (150+50w)
 J-8Ra 8" 2-Way Powered (80+20w)
 J-8 8" 2-Way Passive (80+20w)



MaxX2a 10" 2-Way Powered (200+50w)
 MaxX2c 10" 2-Way Passive



J-12Ba 12" 2-Way Powered (250+50w)
 J-12Ra 12" 2-Way Powered (150+50w)
 J-12B 12" 2-Way Passive
 MaxX4a 12" 2-Way Powered (300+100w)
 MaxX4 12" 2-Way Passive



MaxX5a 15" 2-Way Powered (400+100w)
 MaxX5 15" 2-Way Passive
 MaxX6a 15" 2-Way Powered (700+200w)
 MaxX6 15" 2-Way Passive



J-Sub10a 10" Sub Powered (300w)
 J-Sub12a 12" Sub Powered (300w)
 MaxX9Sa 15" Sub Powered (900w)
 MaxX9S 15" Sub Passive
 MaxX10Sa 15" Sub Powered (900w)

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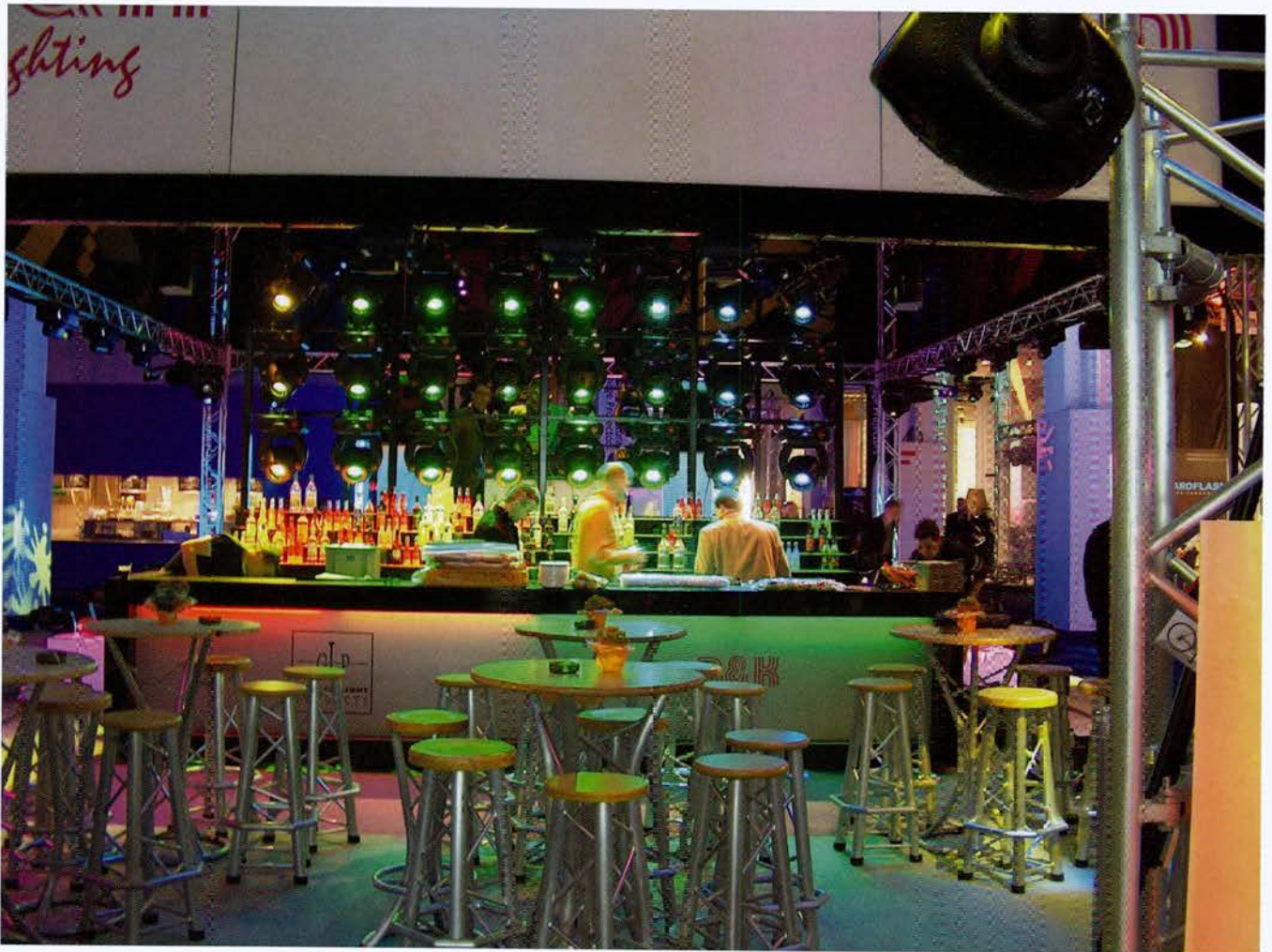
With the **STRENGTH** of 40 years experience and a huge 25 model product line-up FBT probably has the package for you. **TRY ONE.** Whichever you choose you'll find it delivers **CLEAR, POWERFUL, PRECISE AUDIO** with the dynamics and punch to raise a roof or two!

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A most excellent stand where most CX editor meetings were held!

Frankfurt (continued)

obvious clangers, but subtle nuances that might make customers laugh instead of buy.

For a show like Frankfurt, you could use your international brochure (in English, much to the chagrin of the French), and one in German for the local market. If your language is neither of those, then it would be a good idea to do a brochure in one or the other.

But a Brazilian manufacturer of nice looking mixing consoles was happily handing out brochures in Portuguese, a language that maybe 0.01% of show attendees might speak. As my old Dad, champion golfer Dad Grand used to say "If you want people to play on your course, don't put rocks on the green!" (Terry Southern, The Magic Christian)

Of course, no matter how hard manufacturers try, something always sneaks through without being picked up, except by your eagle-eyed columnist. See the attached picture of a new dual channel 15 band EQ from Inter-M. You know, it's a funny thing but I never knew that dual was spelled DULE.

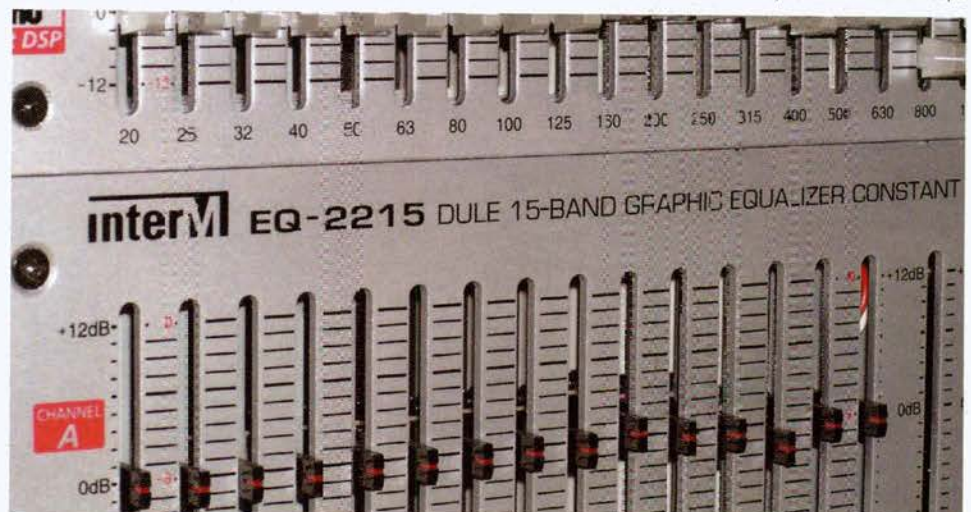
The Daily Frankfurter show magazine had a picture of a new guitar from Peavey - the Omnic JD, instantly nicknamed the Hartleycaster. See the picture and you be the judge. Speaking of Peavey I noticed Hartley Peavey happily wandering the aisles of the show, seemingly without any minders in tow. Not something that you'd see Uli Behringer doing.

The final day of the show was a public day for the M.I. side of the exhibition. Although there was no public day for Pro Audio, in a master-

piece of bizarre mis-planning the main access to Hall 4.0 - guitars and amps - was through our Hall 4.1. Thus we became intimately associated with the contents of Hall 4.0 underneath us. Not from noise - the most hard-core guitarist would have a hard time competing with EV's screaming, but from the steady stream of young teenagers coming through our hall to look for Hall 4.0. I tell you, a plague of locusts has nothing on these kids. They will strip-pire a stand of bags, brochures, CDs and anything not bolted down faster than a fat goose!

While on the subject of M.I., the Meir company proudly introduced a square shaped drum called a Caon. Have a look at the picture: is it just me, or doesn't it just scream out 'cardboard carton' those wacky crummers!

Revolutionary DULE EQ band? Whoops.





At d+b you can have any colour you like - as long as it's orange! (top)

I honestly thought this rack of signal processing on the Amptek stand was a display from a knob manufacturer. But it was real stuff! (right)



There is an enormous choice of restaurants in Frankfurt, but they all have one thing in common; they are boiling hot inside. Step inside out of the brisk night air and you're hit with a wall of stultifying heat that is the last thing you need when you're trying to stay awake. It must be a sign of betterment among the Frankfurt restaurati 'Mein restaurant is so expensive I can heat it to 50C. so zero'. It's hard not to end up asleep in your soup bowl. Although I haven't had it happen to me, I once met a man who had.

One night we went to an Italian restaurant for a change. The service was so slow that if any of us had been able to work out where we actually were, we'd have walked out.

The next morning at the show, I saw some people who'd been a table near us.

"Was that place slow or what?" I asked.

"I'll say it was," one of them replied, "I only got my main course half an hour ago!" •



Alto Orient Express... (left) cute but how well does it pack in the boot?



Cajon - a beautiful rainforest timber cardboard box



Large flat panel NXT speaker, printed up to look like a famous guitar amp cabinet. Think of how much easier a stack of these would pack into the truck.

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NEWS

BOSE PAS

This could be radical - a 10 year research project at Bose has spawned the Personalized Amplification System (pictured). It incorporates Cylindrical Radiator loudspeakers that project sound evenly across the stage and into the audience, maintaining consistent sound levels for both performers and audience members.

Bose assert that the PAS will change everything - it can be used for backline, and for voice. We look forward to testing this at CX!

• www.bose.com.au.



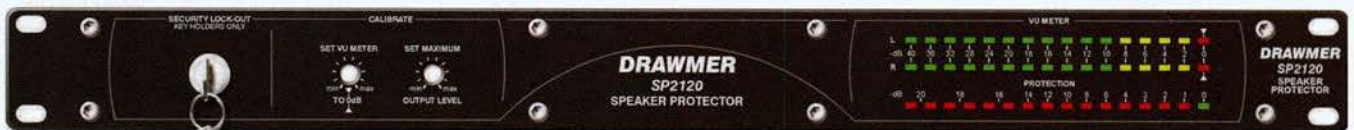
MEYER MINI ARRAY

MEYER's MVC-5 is a self-powered, multiple-driver, curvilinear array with fixed splay angles, housed in a single compact enclosure.

The system is ideally suited for voice reproduction in large spaces with single-level listening areas. Its high SPL capabilities for longer throw applications and the advantages of self-powering make the use of multiple MVC-5 cabinets extremely useful for distributed systems in large spaces.

When suspended in a venue, the MVC-5 loudspeaker can achieve levels useful for speech reinforcement (approximately 90 dB peak on axis) at distances up to 300 feet (90 meters). By distributing and properly delaying enclosures approximately 100 to 200 feet from each other in the on-axis orientation, the system will provide smooth, even coverage throughout a very large single-level listening area.

• www.meyersound.com



SPEAKER PROTECTOR SORTS OUT WALLY FACTOR

Drawmer's new SP2120 Speaker Protector eliminates the possibility of 'unauthorized' excessive sound pressure levels on speaker systems, and gives venues the opportunity to comply with noise restrictions. It is intended for insertion in the sound system immediately prior to the amplifier stage. The front panel of the unit (above) features an integral security lock to ensure that only key holders may make adjustments to the maximum volume levels. In 'unlocked' mode, two front panel pre-

sets are available for adjustment by the installer. The first calibrates the 16-segment Left/Right bar graphs and the second sets the absolute volume level to which the system is allowed to perform.

If the SP2120 receives increased signal levels, a transparent protection circuit is activated which maintains the specified volume level without degradation in sound quality.

• www.arouptechologies.com.au

SOUNDCRAFT GB CONSOLES



Soundcraft GB Series consoles carry the GB30 Mic preamps and EQ, designed by Graham Blyth for the company's 30th anniversary last year.

The GB Series shares the stylish looks of the MH4, MH3 and LX7ii consoles, continuing a strong family look and feel across the range.

There are 2 main types of GB consoles. The GB4 family have 7 bus console with 4 groups, Left, Right and Centre outputs plus 8 Aux sends. Available frame sizes range 12 to 40 channels. Dual-mode topology allows the GB4 to be used in FOH or monitor mode.

The GB8 family have 8 groups, Left, Right and Centre outputs plus 8 Aux sends. They come in frame sizes from 16 to 48 channels, each with four full-function stereo channels and four stereo returns. The GB8 is better suited to larger installations and medium sized touring sound systems.

• www.jands.com.au

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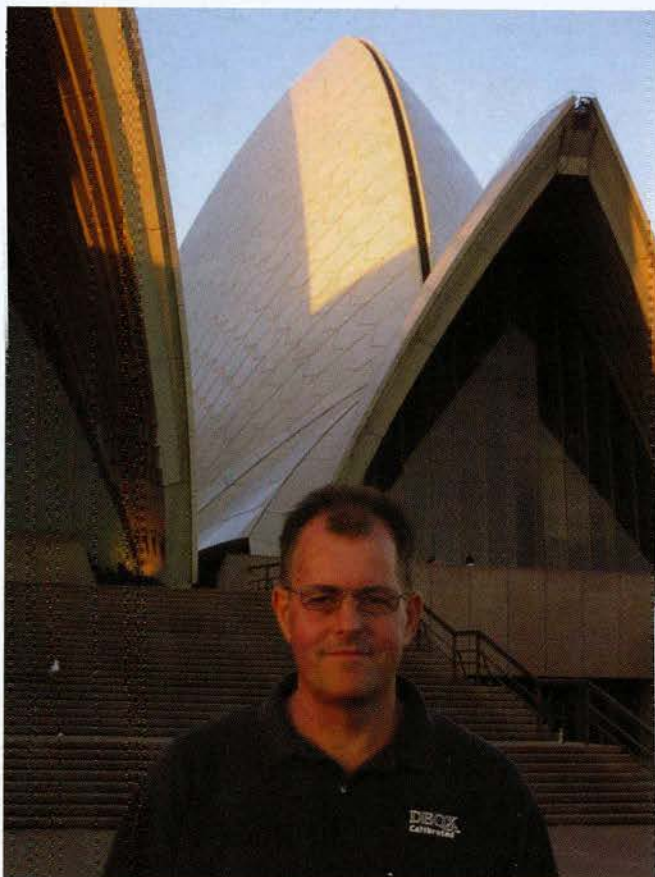

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NEWS



NHT go DEQX

Australian high tech audio maker DEQX's CEO and co-founder is Kim Ryrrie (left). He was a founder of ETI magazine (1970) and Fairlight Instruments (1975).

DEQX make ultra high order crossovers. USA speaker maker NHT is the first of DEQX's OEM customers. NHT's Xd is the first loudspeaker to be designed from the ground up to utilise the DEQX calibrated technology, resulting in a system that reduces distortion and improves on-and-off axis response far beyond any currently available monitor.

We heard the Xd recently. DEQX have an interesting technology.

• www.DEQX.com

UREI returns

Mixing console makers Soundcraft has reintroduced the UREI name on a range of DJ Mixers designed for both the traditional House market and the Turntablist performance sector.

First out of the new stable is an updated version, the limited edition UREI 1620LE. Tempting though it was to totally re-engineer this classic mixer, Soundcraft has remained loyal to the original circuits and traditional components that made the famous UREI sound, while engineering for enhanced reliability.

Only slight modifications to the circuit layout have been made.

• www.jands.com.au

HM Audio rises

Audio hire company HM Audio, based in Shepparton, Victoria, has upgraded their old PA system. Managing Director Chris Tzourtzourkas (below) purchased eight VT4838 cabinets and eight Crown I Tech amplifiers to drive the system.

The JBL VerTec VT4888 microsize line array element is a dual 12", three-way design.

The Crown T 4000 amp delivers 2000 watts per channel whilst other models deliver 3000 and 4000 watts



Holdons

Holdons are one of those products that make you wonder – "Why hasn't anyone thought of this before?" Their simple construction belies the countless applications for these helpful and versatile clips.

Holdons are designed to take the hassle out of hanging or stretching any type of fabric, by providing eyelets wherever you want them in seconds – without tools.

Simply slip a Holdon onto your curtain, cyc or banner, loop some 'trick line' or string through the other end, then tie it off. Their clever patented design means the harder you pull, the tighter they grip, making them extraordinarily strong. In fact, tests show they can support over 100kg

• www.balancedtech.com.au

Grease was the word

John Penhallow of Fitness Audio Distributors (below) is pushing E-GLOOP- formulated to provide protection for surfaces exposed to aggressive saline and acid environments. It defends electronic connections against the corrosive effects of sweat, salt spray and acid rain.

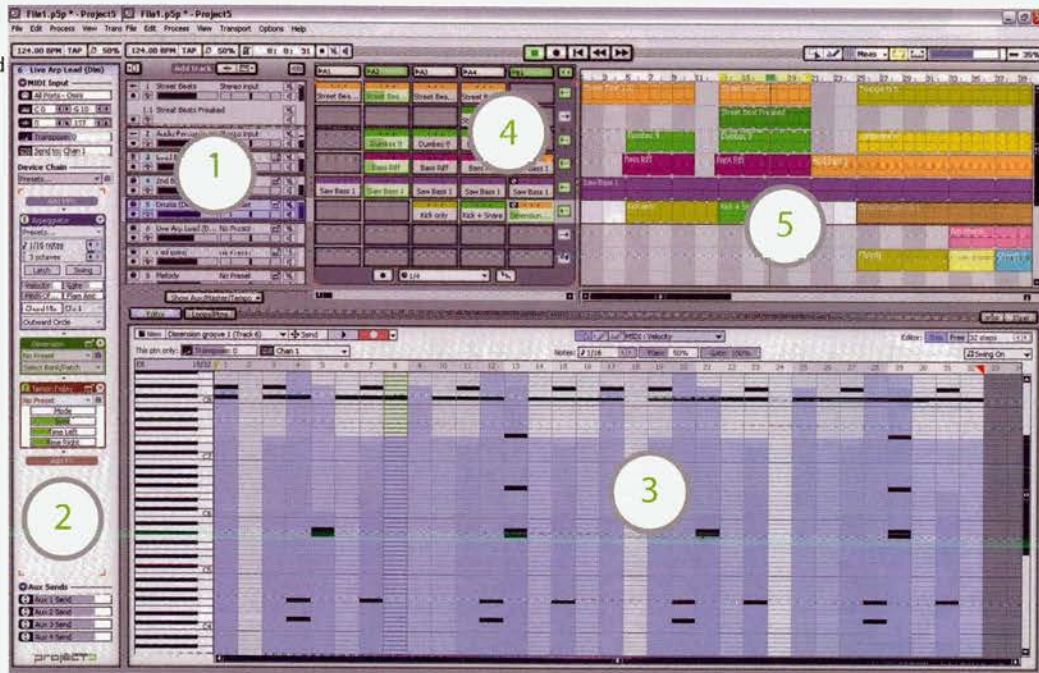
• www.fitnessaudio.com.au



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NEWS



GPRS controls Sony cameras

Channel Nine Brisbane is now able to control remote cameras using the same technology that allows mobile phones to surf the web. A prototype of this technology operates their main news and weather background camera, an upgrade that is allowing increased control and significant cost savings over existing methods. The system uses General Packet Radio Service (GPRS) technology developed in Australia by Sunshine Technologies, part of Brisbane's Cutting Edge group.

The impetus for the change was Channel Nine's desire to add additional remote control to the Sony DXC-D50WSPL cameras for use on their news bulletins. The aim was to bring a fresh, live element to studio productions by using footage transmitted from the cameras.

Nine's existing system was limited by expensive leased line, point-to-point technology and a restricted number of camera controls. Quick thinking by Sony reseller VideoPro, led to a fruitful relationship between Sunshine Technologies and the engineers at Nine QTO.

• www.sunshinetechnologies.com.au

Wireless legislation changes

The Australian Communications Authority (ACA) have implemented an interim measure to cover a regulation gap which has seen most wireless systems for entertainment be illegally used.

The problem was that the standard only allowed systems powered at 3mW or less when using ultra high frequency (UHF) television bands. Most UHF systems generate 100mW of output. There was a risk that the ACA could quite rightly ban the use of wireless systems, or implement individual license fees.

Until the standards can be revised, the ACA has agreed that distributors of systems should apply using a form, paying a token amount. The application will provide the ACA with information about the systems to be distributed.

In turn, systems cannot carry the 'C Tick' of compliance. This is an exception to the standard rule that electrical equipment put on sale must meet compliance for EMR (electro magnetic radiation) and must be marked with the 'C Tick'.

With the ongoing demand for bandwidth and spectrum management, regulators were always going to assess minor users of bandwidth. Entertainment users were always at risk of being displaced in favour of larger or more needy groups.

The new arrangements make good most of the systems in use today, and came at a high cost to a group of importers who hired a technical consultant and lobbyist. You can presume those same importers will self police the system to ensure that all importers comply with the various aspects of this.

Systems that deliver greater than 100mw require individual user licenses.

Congratulations to the importers concerned for saving the bandwidth!

For more, see the ACA website at www.aca.gov.au and search for the SRD, LIPD, EMR Standard and RF55 application.

Rode debut D Power

RØDE's D-PowerPlug (right) is effectively a 'Turbo Charger' for dynamic microphones. It features an instrumentation grade pre-amplifier circuit, and will turn any standard dynamic microphone into a high level electronically balanced output device.

Using conventional microphones with long multi-core cables results in loss of signal strength, and of course sound quality due to cable resistance and capacitance.

Powered by standard 48 volt phantom power, D-PowerPlug can drive cables in excess of 100 m with negligible loss of quality or power.

The D-Power Pre-Amplifier (right, below) is a retro-fit. Just pull out the XLR connector on your mic, solder in D-Power, and you have an active, high level drive, dynamic Stage or Broadcast mic. Why didn't someone think of this before?

Rode are a remarkable success story. The firm is owned by Peter Freedman, and is based in Sydney. It has a world class manufacturing plant where virtually every part of every microphone is made. They have a very large investment in automation. Rode has won numerous awards for export, and for product excellence, worldwide.

• www.rodemic.com



Crestron Wins Convergence Award

Crestron's UPX-2, Universal Presentation Solution, was awarded the 2005 Innovations in Technology Award for Convergence Technology.

The UPX-2 integrates MediaMarker white board annotation, DualTouch Technology, touchpanel control and an embedded Windows Operating Systems with PC application viewers.

UPX-2 also features a seamless video switcher, a multi-window processor, a multi-channel video scaler, a line doubler and deinterlacer to preview and display multiple video sources and computer applications seamlessly and simultaneously. No external PCs or software is required.

• www.crestron.com



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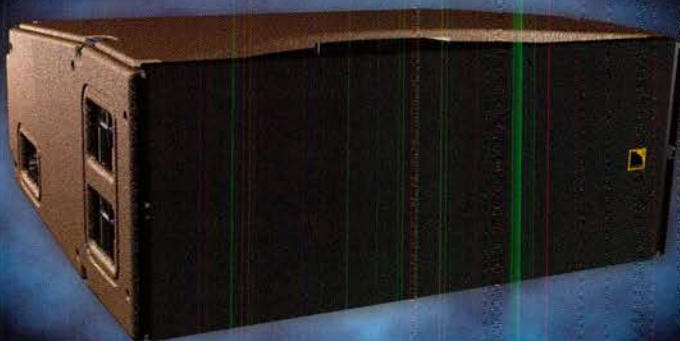


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NEWS

Alcon enters market



Alcon Audio is a new manufacturer of loudspeaker systems and amplifiers, based in the Netherlands. They have a unique ribbon based high frequency device. People we had spoken to felt that a ribbon transducer would not deliver. So we tested it.

The VR-12 is a box loaded with a 12" woofer and the RBN 601 high frequency driver. It comes in pole mount guise, the assymetric box shape allows use as a stage monitor as well. The high frequency horn can be rotated if using the VR12 on its side in this way. Some first impressions 'out of the box....'

The box is very good, meaning both the packaging and the actual VR12 cabinet - which is finished in Durotect scratch resistant finish. It weighs just 21kg, a lot less than we expected for a high powered entrant of this calibre.

The VR12 presents as a passive cabinet, which it is, meaning it comes with an inbuilt crossover network for the 12" driver and the ribbon. This was once regarded as heresy in the professional product domain, because an internal crossover by its very nature is less efficient than if you fed the product two separate amplifier feeds - one for highs and one for lows.

While the amplifier needs to push a little harder to get power through the internal network, it is still just one channel of amp, as opposed to two. Advances in network design and the massive increase in output power from modern amplifiers now removes the original concerns of passive networks. The only remaining issue is the durability of the internal network, which by its nature must handle a lot of heat and vibration. Time will tell.

It is worth noting that another european manufacturer of note, d+b audiotechnik, also have adopted the internal network approach.

Another parallel with the d+b mindset is that the amp has a 'sense' feedback loop. This is something Meyer sound introduced in the early 1980's, and Renkus Heinz copied. It is also a most excellent remedy for protecting the loudspeaker, since the actual operating parameters of the speaker are detected. This takes into account messy items like impedance - which varies according to whether you 'double up', by hanging two boxes off one side of an amplifier; and according to the resistance of the speaker cables.

Alcon use two of the four poles on the Neutrik speaker connector to return the signal to the amplifier, which has a card that is specific to the speaker, loaded through a front panel slot. If no card is present, the amplifier defaults to dumb amplifier mode.

When the ALC 2 amplifier is loaded with the complementary card for the VL 12, the ensemble becomes quite something to hear.

We were most curious about the ribbon high frequency device. It sounded excellent, and appeared to throw reasonably far, certainly the perception we garnered is that it is at least on par with a traditional round diaphragm compression driver in terms of throw. Limited to a subjective test in our sound room, we found the VL12 to be very pleasant.

• www.loudandclear.com.au



Turbosound reaffirm non linearray lives on

Turbosound's long awaited new ASPECT touring system (which replaces Flash light and Floodlight) is just starting to ship

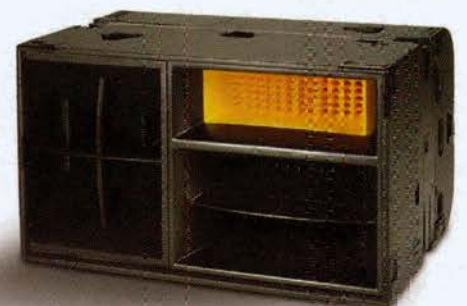
Aspect is the only touring system released in the last few years (that we know of) that is not a line array. Turbosound believe that a scaleable, point and shoot system like Aspect certainly has it's place and is actually more useful to many production companies when compared to fixed dispersion line arrays

A demo ASPECT system is just about to arrive down under.

Above is a 3x3 cluster, and below is an image of one of the mid-high in horizontal format (rotatable mid-high section).

Note the Polyhorn. It is a new approach to high frequency distribution. Turbo say it has a very sharp cut off at the edges of the dispersion pattern, which all but eliminates comb filtering, otherwise known as interference caused by overlapping high frequency devices.

• www.audiotalex.com.au



Note the pull out 'personality' card that makes the amplifier specific to the VR12. With no card fitted, the amp is just an amp - a dumb brute.



Stereo amp, 2 x separate boxes. Passive network in the VR12 means less amplifier channels required.

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DV-RA1000 is a professional solution for recording high-definition audio at up to 192kHz/24bit to inexpensive CD or DVD+RW media. It also features Sony's DSD format, the basis for the audiophile Super Audio CD (SACD) and DVD Audio, as an available recording format.

\$2,299.00 rrp

* CD recording is at 44.1 kHz/16-bit (Red Book spec) only. The use of fatuous witticisms in our fine print has been temporarily suspended due to the Seriousness of these products. ©2005 TASCAM. All Rights Reserved. All specifications are subject to change without notice. All trademarks herein are the property of their respective holders.



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NEWS



KUDO has big debut

L-ACOUSTICS KUDO System has arrived in a big way, with opening orders for Norwest Productions (Sydney, Melbourne, Brisbane) and Novatech Productions (Adelaide).

KUDO is the L-Acoustics system that you can buy, the V-Dosc system which was the first commercially successful line array when launched is on limited distribution to geographically spread audio production firms.

KUDO is a new generation medium format 'line source array' and marks a significant evolution in L-ACOUSTICS Wavefront Sculpture Technology (WST).

Incorporating two patented DOSC waveguides KUDO combines the functions of a variable-curvature vertical line source array and a constant-curvature horizontal line source array. Mechanically-adjustable K-Louvres provide directivity control for the mid/high section and allow KUDO to be reconfigured with four different coverage pattern settings to accurately match the venue and audience geometry.

Directivity setting choices are 50° (symmetric), 110° (symmetric), 25°x55° (asymmetric) or the other way: 55°x25° (asymmetric).

You can use KUDO in vertical (left) or horizontal mode (below).



Mechanically-adjustable K-Louvres (above). This is the view looking directly up the array from underneath. You can see how the dispersion can be 'pointed' or 'trimmed'.

NOVATECH AND KUDO

Adelaide production supplier Novatech Productions has ordered a Kudo system made up of 12 x KUDO elements, along with various subwoofers, amplifiers, and other L-Acoustics products. They have optioned a wide array of flying hardware, allowing them to rig their Kudo in various configurations.

Novatech have a broad client base, they do concert work one day, then corporate or dance party work the next.

The firm launched their Kudo purchase with a well attended function and demo in Adelaide. Random Audio engineer Wyn Milson attended, as did most Adelaide production identities.



NORWEST AND KUDO

After recent evaluation and listening tests held at the MCG in Melbourne, Norwest Productions has decided to purchase KUDO. The system will comprise of (48) KUDO speaker elements and associated rigging hardware.

Norwest Productions have a well earned reputation for providing quality audio equipment and technical services for high profile events such as the 2000 / 2004 Olympic Games Opening & Closing Ceremonies, Rugby World Cup 2003 and recently the Edinburgh Military Tattoo.

Speaking about the purchase Chris Kennedy, owner of Norwest Productions, said: "Even before it's official release at AES in San Francisco last year we had been very interested in KUDO and since listening to the system perform in real world conditions in Melbourne we're convinced that KUDC is the right choice for Norwest's applications. With the addition of KUDO to our rental inventory we now have a very flexible system that can be used one day in a corporate application such as a hotel ballroom or the next day at a major outdoor event such as the Olympic Games".

• www.randomaudio.com.au





Big Car Gig in Bangkok

CX's Thai diary

Captain Thom made this welcome announcement as the Thai Airways 747 taxied to the terminal after a flawless (and early) landing in Bangkok.

"Ladies and gentlemen, this has been the last landing in my beloved 32 year career. Tonight I am retiring". The passengers applauded.

Say "Bangkok" and most people can't help but think about sin. Bangkok had a well earned reputation as a place where almost anything goes.

Thankfully the reality today is very different.

Bangkok is often misunderstood or thought of as only a tourist destination. The country has 60 million people and is a powerhouse of agriculture and manufacturing.

Several years ago the Thai government moved to clean up the seedy side of Bangkok. The three notorious bar areas - Patpong Road; Soi Cowboy and Nana Plaza, were overhauled.

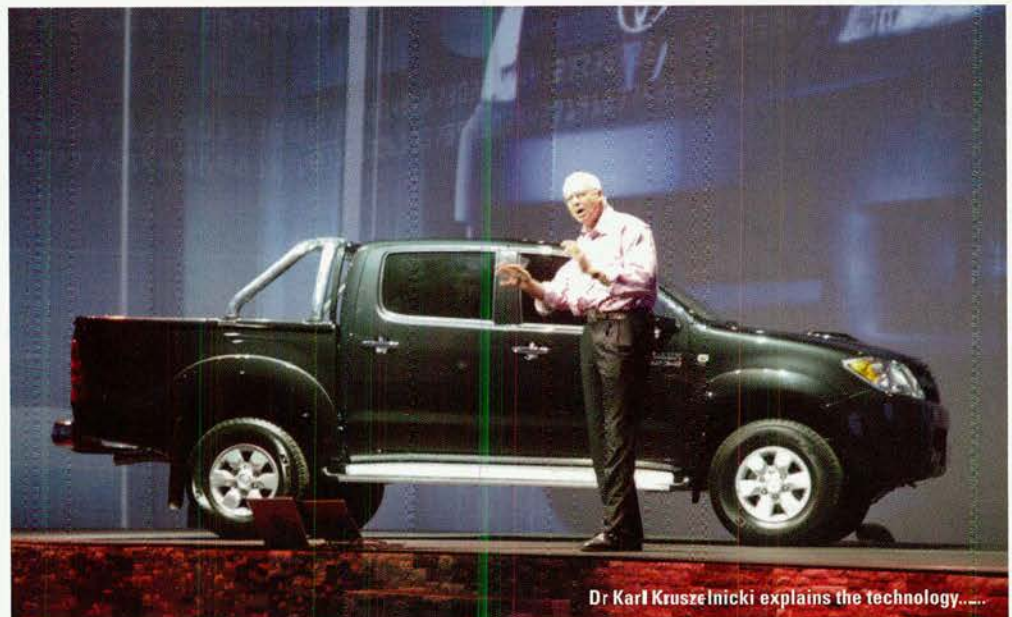
They are still grubby and loud. The bars still have 'working girls' and (shock) 'lady-boys'. But the

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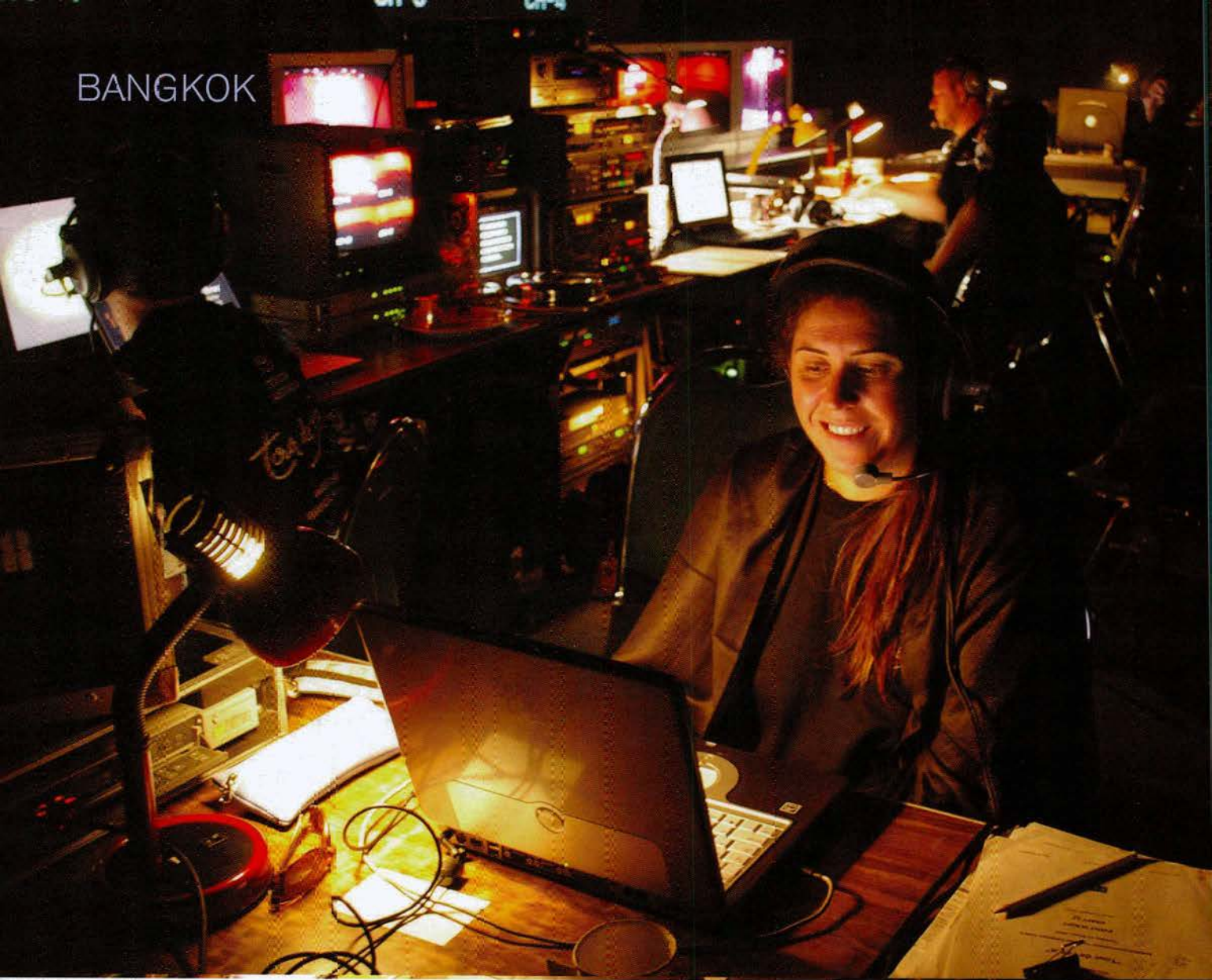
Toyota Motor Corporation of Australia are probably the top spending marketer in the car business down under.

They do things BIG and they do things BOLD.

To launch the new big and bold new Hilux (above), they took their dealers to Bangkok. The launch event was produced by Peter Fix - the publicity shy supremo of Australian events and entertainment who recently sold his business to The George P. Johnson Company. It was a large event. Anything can go wrong. The Producer's job is to make sure it doesn't. **Julius Grafton** reports:



Dr Karl Kruszelnicki explains the technology.....



Michelle Robinson at the autocue station in the control zone

Thai diary

infamous sex shows have been driven underground. The girls and boys are not naked anymore.

Child prostitution is a state crime. Perpetrators are hunted down, and rot in vile jail cells.

Drugs? Fancy a firing squad?

Elsewhere in this massive city of 6 million it is all go, with tourists drawn to the sights, the smells, shopping and food.

CX went to the Australian Embassy on South Satorn Road to find out more about the entertainment industry in Thailand. The building is a high security zone. The taxi dropped me at the gate as two Chubb security guys tore cover to move us along. Through the blast gate, a security post took my bag after checking who I was. I then walked a kind of inspection pathway along the drive, past the tilt up berm that lowers to let cars in.

(continued on next page)

The idea of the zig was to show the car, which is built in Thailand, along with the factory. Plus build even more confidence into the dealer network.

The event was branded 'Tour De Force'. The new Hilux is otherwise known as the Vigo pickup truck in other markets. This is the new multinational pickup truck for Toyota.

Part of the reason Toyota chose Thailand as a launch venue is because the new Hilux is made there.

Around 400 people attended what was also the Australian National Dealer Meeting.

The dealers arrived in Bangkok and checked in to the Shangri-La Hotel. Several other Bangkok Hotels - Peninsula and Oriental amongst them - are also extremely, very, glamorously good. Try them sometime, preferably when someone else is paying.

On Sunday night the dealer flock and their spouses attended a welcome cocktail party at The Navy Hall - which is on the river. The river itself is the centrepiece of Bangkok, a mesmerising thoroughfare of a 1000 things nautical.

Monday morning was a Global Business Meeting, facilitated by Toyota Japan held in the Ballroom of the Shangri-La.

After lunch they toured the new Hilux factory, followed by a series of dinners at different

restaurants in the Shangri-La complex.

Tuesday morning they went to BITEC - the international trade and exhibition centre. This was where the dealer meeting was held, including the launch and reveal of the new Hilux. Sales and marketing presentations and technical presentation by Dr. Karl Kruszelnicki. He links weird scientist facts together with the specifications of the vehicle.

Lunch was followed by a two wheel drive and a four wheel drive program, on a custom built course, supervised by rally champion Rick Bates. That night a closing dinner was held in the ballroom, involving some local entertainment and Australian band Mental as Anything.

PUTTING IT TOGETHER

Toyota Australia commissioned Peter Rix Management, which is now a George P. Johnson company, to produce the event.

David Comer from Staging Rentals (Sydney) was retained as the production manager, a role he fulfills for all of PRM's Toyota related events. Tony McFfat was appointed initially as audio director, and later as technical director.

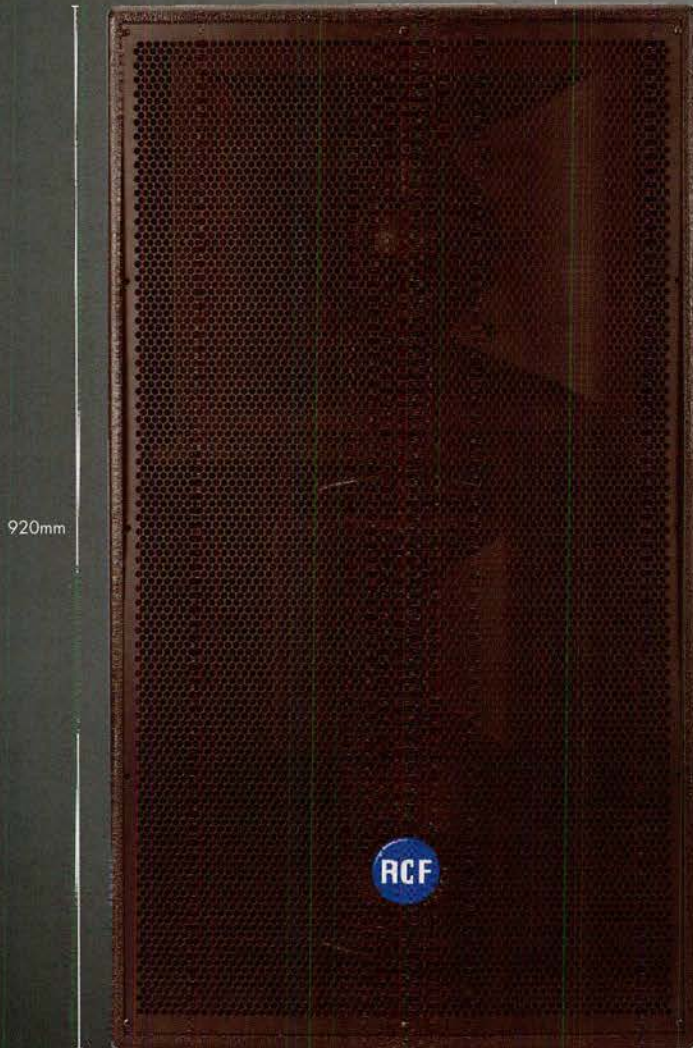
The entire event was broken up into a series of modules.

The Navy Hall provided production for opening

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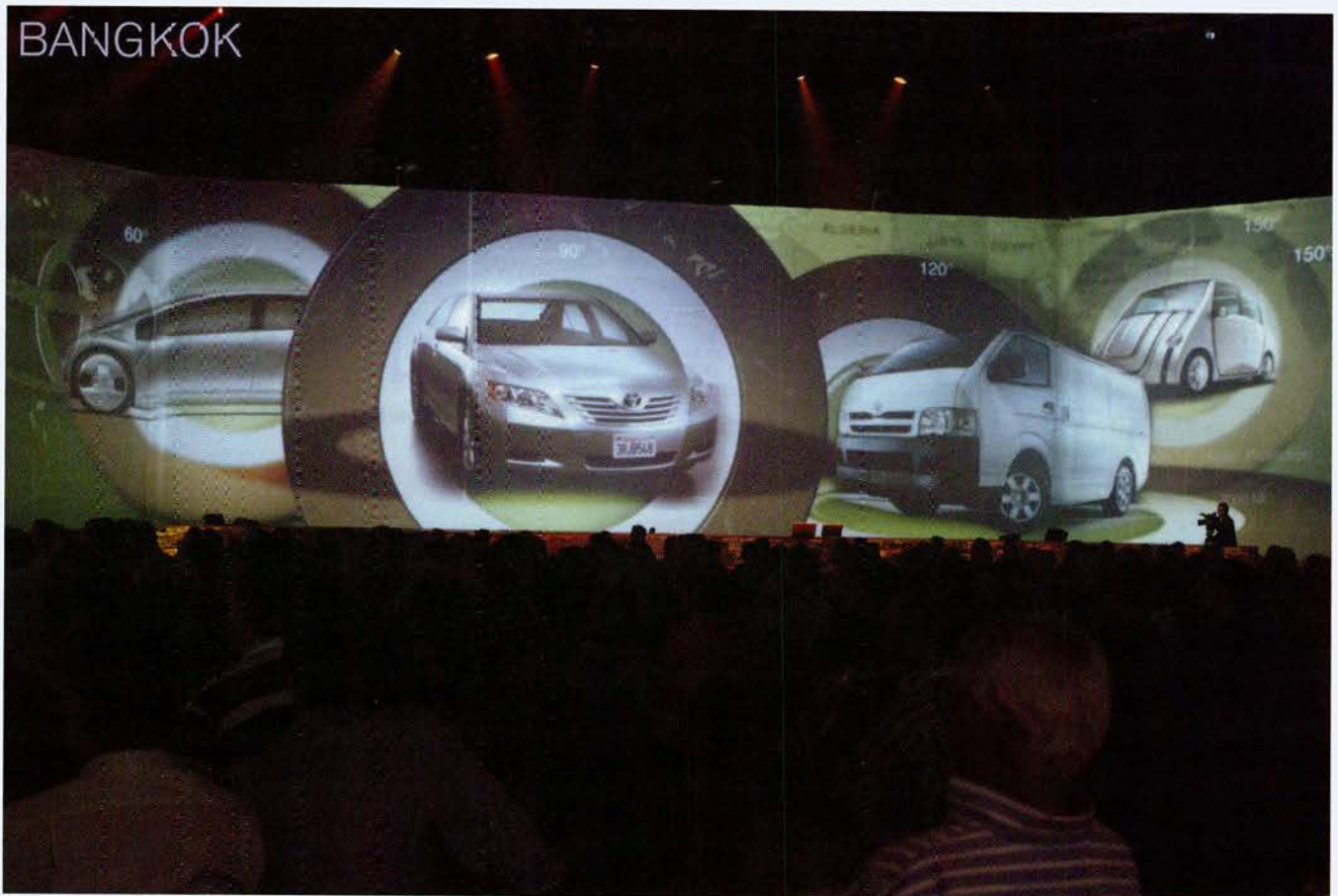
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cocktail party, with entertainment from Melinda Schneider, overseer by Jason Moffat for PFM.

At the Global Business Meeting at the Shangri-la Hotel, production was coordinated by a local company called Show Works. They used local suppliers Mr Team for Audio; Media Vision for Video; and Light Works for lighting and rigging. This venue was also being used for the closing dinner, so a level of production was installed to suit both events. Peter Rix directed this event. It had a cricket theme.

The National Dealer meeting at Bitec was directed by Andrew Poole. This was the main event, it had the Hilux reveal

Andrew is the Australian director for the stage show We Will Rock You. The Toyota relationship came about last year when Toyota did a National Dealer Meeting on the stage at We Will Rock You, using the cast of the show.

(An interesting side note: in London, the Dominion Theatre where We Will Rock You is playing is sublet to Hillsong Church for their Sunday worship. Which is the day the show is dark. Shows how a venue and a production can fully utilise downtime.)

The set was designed by well known Australian show designer Eamon D'arcy, and constructed by local supplier X-Con.

Thai diary

Through blast proof doors, a very miserable Chubb guard took my mobile phone and sent me through a metal detector. With that cleared, I went into a glass airlock, and when the outside door has locked, the mean looking guard released the inner door so I could enter the lobby. Presumably if they don't like the look of you, they just gas the airlock?

My trade contact politely briefed me for half an hour about entertainment in Thailand. It appears there are several dominant publicly listed companies which have fingers in many pies.

Thai culture is warm and welcoming, and Thai entrepreneurs build crazy things that tourists don't see elsewhere.

One of these is a unique dinner venue called Sirrocco which is on the roof of the State Building, 66 floors up.

This bold concept promises fine dining, and has a sky bar perched on a corner with glass walls which are about chest height.

Over the edge is the street, far below. In a half hearted attempt to protect the wandering population from airborne mai-tai glasses pitched over the edge by drunken

Chaotic street wiring, Thai style



(continued on next page)

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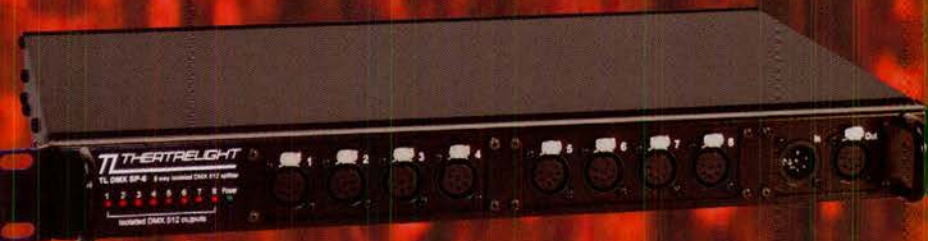
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Head rigger and safety guru Tiny Good with Joe from Lightworks

Thai diary

tourists, there is a token glass ledge. Which is less than a metre wide. Whole lotta good that'd do...

If the bar isn't dangerous enough, then the table service needs to be considered.

After a ridiculous charade involving misunderstanding my name which was plainly typed as **GRAFTON** on the reservation sheet, we were escorted to the wrong table where more dithering and confusion about the name went on for some minutes. Maybe Grafton means something weird in Thai? The name thing got my goat, because they'd insisted I phone them a few hours before, to re-reconfirm my booking.

Finally seated in semi darkness, the lights of Bangkok 66 floors down enticingly drew our gaze.

(continued on next page)

The show was done in the round in reverse, with the audience in the centre of an octagonal shaped room, seated on swivel chairs. There were four designated stage areas, for all intents and purposes in the north, south, east and west quadrants of the room. All stages were load rated for vehicles. Action took place on these stages, and vehicles were driven around the room.

One stage was a large hill, covered in railway sleepers, to simulate off road action.

Two of the stages had revolves built in. The wall of the venue created with four custom made eight metre high cyc clothes, 36 metres long. Entrance doors for the audience and the vehicles were cut into the cyc at appropriate places.

VISUAL

All scenery aside from the stages was projected. 8 Pigi projectors were provided by Electric Canvas of Sydney, overseen by Peter Milne and Gael Picquet from Pigi France.

The visual design was created by Spinifex, with input from Paul Haines and Peter Milne. It comprised a variety of elements, for example when the

Hilux drove along, two layers of film ran backwards the other way, so the vehicle appeared to be driving faster against the scenery.

Other vision was projected by Barco R-12's onto virtual screen areas located on the various walls flanking the stages with the opposite wall projectors providing auto cue for the presenters. Further autocue was provided in front of the stages via Plasma screens.

The Barco's and the Pigi's were all mounted on a central pod structure that was flown above the centre of the room.

The video system was controlled from an Extron router that allowed sources to be independently routed to the four projection screens and the three sets of Plasma's. As the show turned around, the images needed to follow.

Master input was from a Extron seamless switcher, with sources from Mac G4 notebooks running Keynote software, Betacam SP, DVD. Dr. Karl arrived with his own computers which he controlled himself. Camera's were input from a separate switching system.

The output of the seamless switcher, together

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*Prices are for the console only and do not include optional components. Model shown DM2000 V2.

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BANGKOK



No harness required! Lighting director Ziggy Zeigler (right)

with Autocue were sent to the inputs of the router, to then be distributed as required. This system was operated by Hai Tran from Spinifex – who also created a lot of the visuals. Keynote was operated and created by Michelle Fobinson, also of Spinifex.

LIGHTING

Designed by Ziggy Zeigler from Sydney, the lighting rig was run from a Whole Hog II and featured analogue and moving lights. Lightworks purchased new Mac 2000's for the show. There were four truss mounted followspots (note follow spot chair pic!).

Due to limited programming time available, the lighting rig was pre-plotted in Hog PC

AUDIO

Tony Moffat designed audio, vision, communications and the control room. The sound system comprised four central clusters of Nexo cab nets with associated delay speakers located on the Pigi Pod. There was further front fill, and low level stage

monitoring.

The system was controlled by a mixture of Allen and Heath and Symetrix digital system controllers, and mixed on a Yamaha DM 2000 console. Presenters wore headset radio mics, apart from the Toyota president, who chose to present from a lectern.

The show was mixed in surround, with some video soundtracks run off a Mackie SDR 24 track recorder, premixed in Australia and other playback from CD and video. All the walkup stings and other music were played off a Sony notebook in Vegas in surround.

THE REST

Communications involved multiple loops and a mix of hardware and radio. The hub was at stage manager Ray O Sullivan's position. Ray called the show.

Tiny Good oversaw all the rigging; and operated and supervised the vehicle entry.

Because of the 360 degree nature of the event staging it was not possible to have a traditional front

Thai diary

The candle in the jar was lit and promptly got blown out by the force five gale that you always get at the top of a skyscraper.

To read the menu it got relit, no fewer than nine times. It was dark up there, after all. The circling bats were OK, they have radar.

Many of these attempts, with a cigarette lighter, appeared to singe the fingers of the waitress, who feined no pain. A kitchenhand ran up with a toy flame thrower. The wind blew it out.

A nice cool wind it was too. We noted the lack of cover and pondered those tropical clouds - not that much higher - that seemed to pulse with lightning all night.

(continued on next page)



Remote control room

of house in the actual room. Therefore a 'command central' was created, located outside the event area. Here two large rear projection video screens were assembled, with quad split images, together with specific video monitors for the lighting director and the stage manager.

A series of 6 surveillance cameras were mounted in the lighting truss, to allow all operators views of the four stages together with vehicle and audience entrance.

DINNER

Meanwhile, after the Global Business meeting over at the Shangri-La Hotel Ballroom, the room was turned around, with traditional Thai décor and the stage taken over by red hot local band Hot Chill for dancing. They were preceded by Mental as Anything. Throughout the night there were performances of traditional Thai dancing.

TIMELINE

Most of the crew arrived late on Tuesday night. Bump in was first thing Wednesday morning. Some rigging points were already in.

- Rehearsals took place Sunday morning.
- Monday was the dress rehearsal
- Tuesday morning was show day.

• Photos courtesy Toyota Motor Corporation Australia, Tony Moffat, Josh Moffat, and Ziggy Ziegler.



Fulsome praise for local crew. Although things were done differently (such as all lighting truss coming wrapped in felt packaging) the Thai crew greatly impressed the Australians. Here is translator and lighting assistant, Nina

Eamon D'Arcy's set needed to withstand some serious action. This fake indoor hill copped a pounding.



Credits

- Executive Producers: Matthew Callachor (TMCA), Peter Webster (TMCA), Scott Thompson (TMCA)
- Producers: Peter Rix (PRM), Brad Larkham (PRM)
- Associate Producers: Adrienne Comer, Sally Goodman, Sarah Cattell
- Project Director: Dave Comer
- Production Director: Tony Moffat
- Technical Director: Eamon D'Arcy
- Designer: Natalie Berk
- Production Co-Ordinator: Andrew Pole
- Project Director: Dave Comer
- Production Manager: Tony Moffat
- Technical Director/Designer: Eamon D'Arcy
- Designer: Ziggy Ziegler
- Lighting Director: Tony Moffat
- Audio Director: Kevin Brumpton
- Script Director: Ray O'Sullivan
- Stage Manager: Hai Tran
- A/V Operator/Director: Michael Cunningham
- Keynote Director/Operator: Peter Milre
- Projection Directors - PIGI: Gael Picquet, Paul Haines, Michelle Robinson
- Speaker Support: Tiny Good
- Auto Cue: Scott Polkinghorne
- Rigger/Tech Stage Manager: Rick Bates
- Drive Program Manager: Andrew King
- Drive Program Director: Josh Moffat
- Safety Officer/Guest Liaison: Benjawan and Ole
- Technical Assistance: X-Con
- Local Production Co-Ordination: Mr Team
- Showworks: Media Vision
- Local Set Construction: Lightworks
- Local Audio Supply: Peter Rix
- Local Lighting Supply: Chad Higgins
- Local Lighting Supply: Josh Moffat
- Shangri-La: Brett Cooper
- Show Director: Josh Moffat
- Production Co-ordinator: Showworks/Josh Moffat
- Technical Co-Ordinator: Tony Moffat/Mr Team
- A/V Operator: Tony Moffat/Media Vision
- Lighting/Audio Operator: Eamon D'Arcy/Showworks
- Lighting Design: Showworks
- Audio Design: Showworks
- A/V Design: Showworks
- Set Design: Showworks
- Set: Showworks

Thai diary

Where do we go if it rains? Umbrella? Not in this typhoon

With the food ordered, we set back to observe the jazz band and the diva battling away up on the balcony (pictured, above). Snatches of music swirled around us, as the table cloth whipped at my kitten. She valiantly pretended nothing was wrong, as her lovely long hair was blown around her head several times one way, then the other. She looked like Cousin It from the Adams Family. I pondered less practical girls and their coiffured hairdos. Least I think she was OK, I couldn't really hear much over the buffeting noise.

That was buffeting, not buffet. This was al-a-carte. The wind was like a hurricane.

The gale skithed through the formal setting on the next table, smashing a wine glass.

I marvelled at the sheer drop, just 2 metres from my seat, with just a little border of tiny shrubs and a fake marble balustrade between me and oblivion.

I wasn't thinking of ending it all. Far from it. The food when it arrived was too good for that. But I pondered the prospects.

Imagine you decide to take the fast track to Hell. What better way than a five course meal with excellent wine and then, before the stupendously expensive bill arrives, you just top over the edge?

I'm not at all serious, but the safety aspects of this restaurant are ridiculous. Not to mention that it is after all, outdoors and there is no possibility of any kind of cover if it rains.

Great ideas often come unstuck in the execution. This was one of them.



Line Array Comparison

Four midsized line arrays lined up

The line array has moved out of the concert stadium into venues and auditoriums seating anything from a few hundred people. The real action area in PA installations right now is club auditoriums and churches. This is where you'll find smaller line arrays, provided the venue has enough ceiling height.

The hot dollar is a line array of around six boxes, which will give the vertical coverage you need where there is raked seating.

We attended a test of four systems, chosen by Hillsong Church, who are conducting research towards future needs. The Church has various possible projects being planned and investigated. Their new large auditorium (seating around 4,000) at Baulkham Hills was the venue for the test. Hillsong has two other auditoriums in Sydney, and own additional property. They have a range of extension churches and affiliations elsewhere, including a church in London, and in Kiev – the capital of Ukraine.

This test covered four products. More products will

be tested later, indeed this church is a semi regular venue for tests like this. It is the largest church in Australia, the auditorium is well suited to testing as it has easy flying and access, and the charismatic church market is the fastest growing. Churches talk to each other. Hillsong influence others.

Because of the turbulent and sometimes emotional competition to sell these kind of products, it's important to understand the context of this comparison. Hillsong wanted to test a small array, obviously used where there isn't a great deal of ceiling height. This ruled out some systems.

We don't need the permission of a manufacturer to attend and report on a comparison! If a manufacturer (or more typically in Australia: a manufacturer's distributor or agent) agrees to participate, then they have satisfied themselves that the people running it know what they are doing.

This comparison was run as professionally as any we've seen, anywhere worldwide. In charge of the test was Scott Willsafer, wunderkind sound designer

Some of the audio sales guys were in a ridiculous flap about this comparison! Whenever there is an attempt to compare products, political manoeuvring begins. CX got some weird flack from a few audio sales people about this article - before anyone had even read it.

By Julius Grafton

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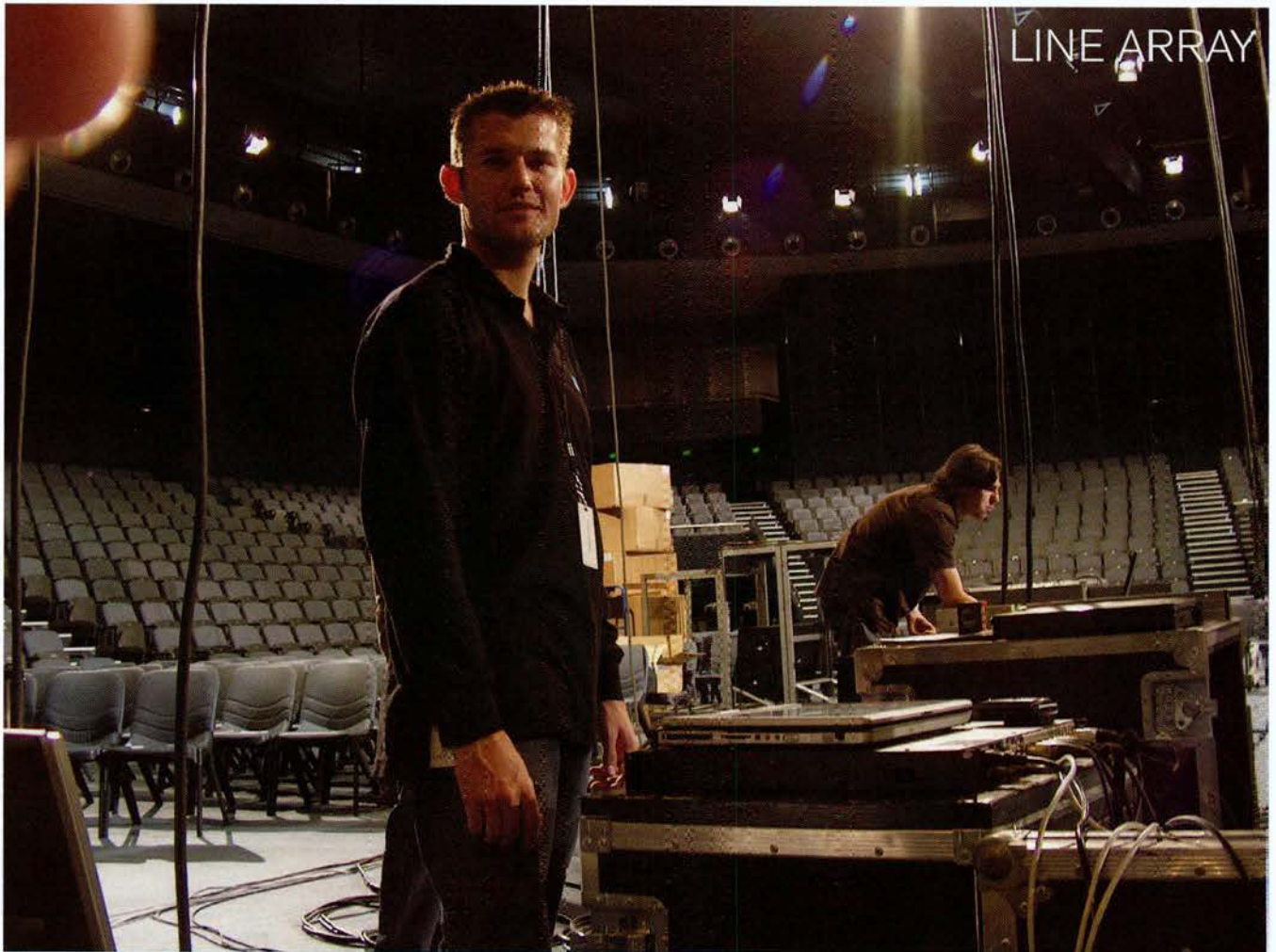
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LINE ARRAY

for the Athens Olympics, and consultant at large. He is Sydney based, and his company is called Auditoria Pty Ltd.

Scott is Hillsong's consultant for an auditorium upgrade and the comparison is part of his job; as is selecting and designing each system option. The task includes writing and releasing a specification, assisting in the selection of the successful tenderer and of course supervision during the installation and the final commissioning and compliance testing.

At 0830am four systems were delivered, all accompanied by representatives, who usually like to attend to be helpful and to see for themselves how their brand is being measured. The rollup of 'identities' was in itself interesting. Some we could characterize as audio professionals, meaning they live and breathe pro audio and understand most of the processes that Scott was undertaking. Others we would characterize as salesmen.

If this had been done in the USA, or even Europe, then most of these guys would have been running around getting Scott coffee and breakfast finger food. Being Australia it was all very casual.

Scott had assistance from Michael Cuthbertson, Ian Anderson and David Watson from Hillsong.

THE SYSTEMS

Hillsong and Scott decided to test four systems, after establishing some others were not available for testing on the day. The four systems that flew that day were from d&b audiotechnik, EAW, L-Acoustics and Nexo.

d+b Audiotechnik offered a system of 5 x Q1 boxes

and a Q10 downfill.

EAW likewise supplied 6 x KF730.

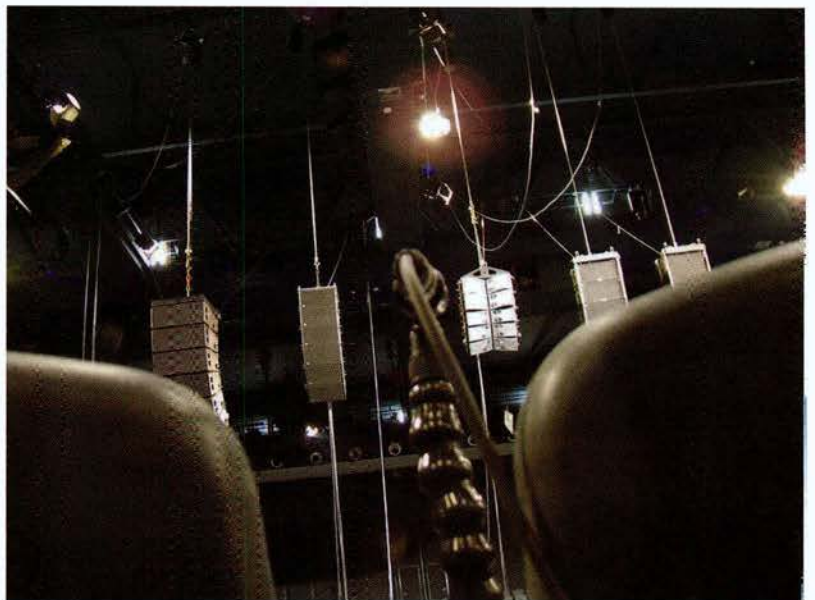
L-Acoustics supplied 6 x Kudo (which were slightly oversized for the application, according to Scott)

Nexo sent 5 x GeoT, 5 being the number needed to get the vertical coverage. These were a mix of nearfill and long throw boxes.

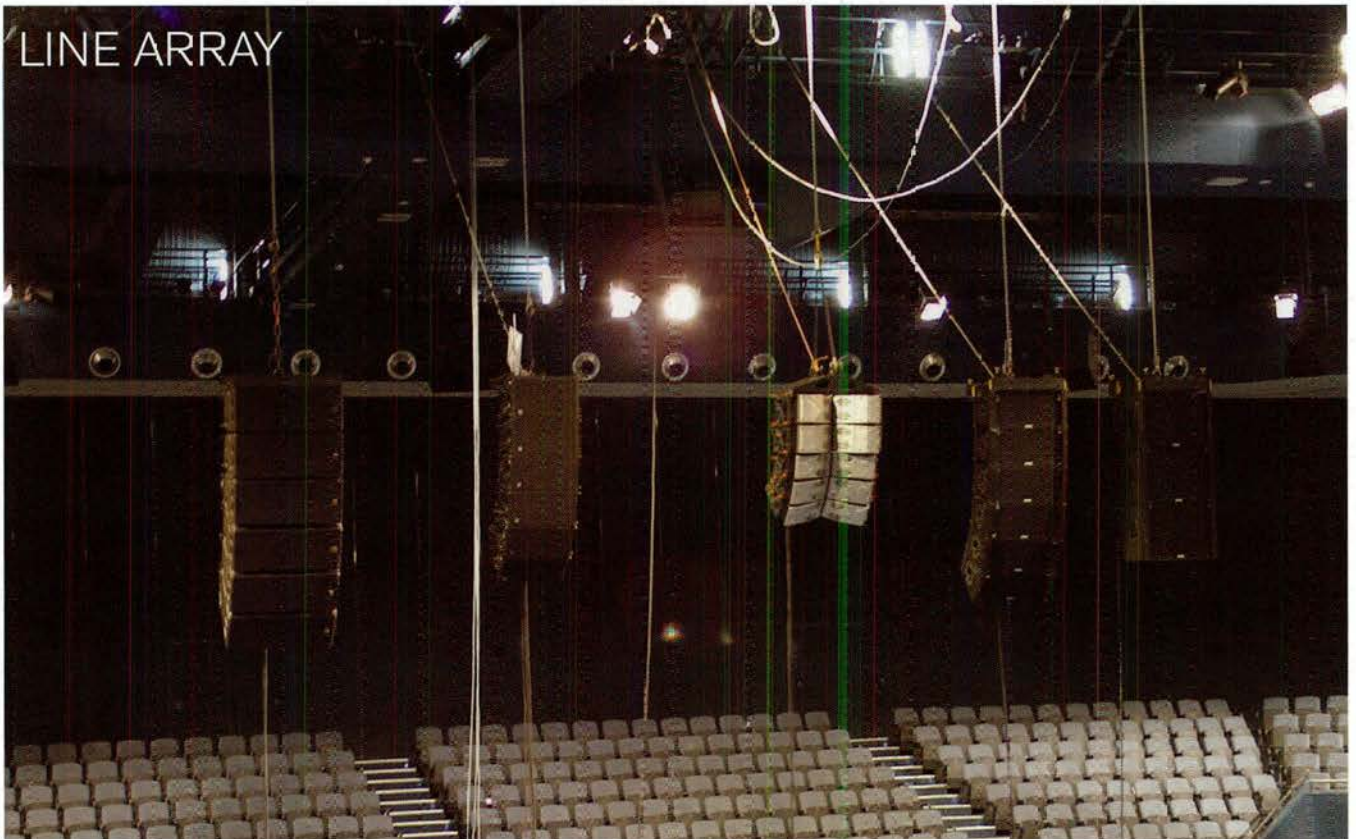
Each vendor was responsible for processing and amplification for their systems, so various racks of amplifiers and system processors were on hand.

Scott Willsallera waiting for an audio rep to buy him a coffee...

Measurement microphone (below) was moved around when each system was measured.



LINE ARRAY



THE LINE UP: Kudo, Q, Geo-T, KF 730. Some EAW subs are also flown at far right.

THE METHOD OF TESTING

Scott designated an area of the arena which was to represent the physical throw and scale of the application. By this I mean he flew the arrays to a given height and then pointed them at a bank of seats which were at a distance that exactly matched the seating area and loudspeaker placement for the City Auditorium once the refurbishment works are complete.

Within the target seating area, measurements were taken in ten places using a calibrated microphone, and WinMLS 2004 – a software product Scott compares to SAI-Smaart software on steroids. It's the current measurement program of choice for people who know what they are doing. There are probably less than ten people of this caliber in Australia. If we name them, the eleventh person will sue.

The measurements represented a grid, with the mic positioned at the edge of coverage, on axis, and half way between. A reading was also taken underneath the array, to read spill on stage. We have heard of some interesting installations where the predictions for the audience were OK, but weird stuff had manifested right where the vocal microphone lives – on stage. This final measurement was to check what each array did outside of the coverage area.

The software generated a swept sine wave, four were produced for each measurement, and then averaged. These 40 impulse response measurements produce what Scott calls the 'DNA' for each system.

Each system was gain matched, so that when the sine wave was run through each system it produced the same dBSPL, or sound pressure level.

THE TEST CRITERIA FOR THESE SYSTEMS

"The main reason for the evaluation is that the proposed venue is a reasonably small one, with the need for quite high level reinforcement. We need to find a system that meets certain demands – it must be as small as possible, it needs to fulfill the vertical coverage requirement without blocking the sightlines to the projection screens. We want to see which system can maintain a coherent response given a short line length."

"Then there's the physical – what it looks like, what the size is, the weight and the appearance."

"Keep in mind in all these discussions there can never be one winner," Scott cautioned.

Details of each Array	KF730	Q-Series	Geo-T	KUDO
Qty of Elements	6	6	5	6
Horizontal Coverage	110°	75°-110°	90°-120°	50°-110°
Vertical Coverage (approx)	38°	42°	43°	45°
Array Weight	216 kg	132 kg	191 kg	522 kg
Array Width	730 mm	580 mm	750 mm	876 mm
Array Length	2205 mm	1610 mm	1100 mm	2240 mm
Array Max SPL (approx)	136 dB @1m	140 dB @1m	145 dB @1m	141 dB @1m
Array Bandwidth (approx)	80Hz - 20kHz	70Hz - 17kHz	75Hz - 19kHz	50Hz - 18kHz
Bandwidth with Sub-bass	33Hz - 20kHz	32Hz - 17kHz	32Hz - 19kHz	28Hz - 18kHz



c+b D12 amps, internal processing

Final system configurations (below). This is the combination of equipment resulting from each comparison, which Scott has put forward as possible configurations for the proposed auditorium sound system design. The spec includes subs and extra fill cabinets, along with proposed amplifier and processor combinations.

WHAT'S IN THESE SYSTEMS?

d+b Audiotechnik's Q1 boxes are loaded with two 10" low frequency drivers mechanically time aligned with the 1.3" exit HF driver. The Q1 HF driver is fitted with a toroidal wave shaping device which has a 75° x 15° (H x V) dispersion pattern.

Like all d+b product, and indeed like some other new breaking brands in Europe, the box features an internal crossover network. It simply requires full bandwidth audio, but is designed to be fed by a proprietary amplifier with inbuilt processing.

The Q1 is a compact, handsome cabinet, finished so it will sit innocently and look inoffensive.

Dispersion for each cabinet is 14° vertical by 75° horizontal – the narrowest in width of the group.

EAW's KF730 is somewhat more complex in appearance than the Q1. It is loaded with 2x 10" woofers loaded on the sides of the cabinet.



Kudo rack, LA48A amplifiers, Lake Contour (in rack) and Lake MESA EC (top)

There are 2 x 7" horn-loaded mid speakers, and 2 x 1" exit high frequency drivers. The mid and the high drivers have an internal, passive crossover. The KF 730 thus requires 2 amplifier channels. Interestingly EAW have wired the box so each part offers 16 ohms of resistance. This means up to 8 boxes may be powered from one ultra high powered amp, if it can deliver 2 ohms.

The KF730, also known as the SLAM, has 12° vertical x 110° horizontal dispersion.

L-Acoustics supplied 6 x Kudo boxes. Kudo is an active 3-way enclosure loaded with 2 x 12" low drivers, 4 x 5" mid drivers and 2 x 1" exit high frequency devices. Most interestingly it has an adjustable polar pattern: 50° or 110° symmetric (25°/75° or 55°/25° asymmetric). In other words, the high frequency dispersion can be adjusted to suit. This is new, and for sure it will be copied, probably by the time you read this.

It means you can actually alter the dispersion of the array by having

System Elements	KF730	Q-Series	Geo-T	KUDO
Left Array	6	5 x Q1	2 x T48C5	6
Left Down Fill	-	1 x Q10	3 x T2815	-
Right Array	6	5 x Q1	2 x T48C5	6
Right Down Fill	-	1 x Q10	3 x T2815	-
Centre Fill	1 x JFX200	1 x C690	1 x PS15	1 x MTD112
PA Left Fill	1 x JFX260	1 x C690	1 x PS15	1 x 115XT HiQ
PA Right Fill	1 x JFX260	1 x C690	-	1 x 115XT HiQ
PA Right Side Fill	1 x JFX260	1 x C690	1 x PS15	1 x 115XT HiQ
Subs	4 x SB1000	3 x B2	2 x CD13	4 x SE218
Amplifiers A	4 x iTech 6000	6 x D12	7 x Camco V3	8 x iTech 6000
Amplifiers B	4 x iTech 4000	-	-	4 x iTech 4000
Processor A	Lake Contour	Lake MESA EQ	3 x NX1242	Lake Contour
Processor B	Lake MESA EQ	Lake MESA EQ	1 x TD15	Lake MESA EQ
Processor C	Lake MESA EQ	-	Lake MESA EQ	Lake MESA EQ



Lab Gruppen fp6400 amplifiers on hand to power the EAW KF-730's (and subs)

the lower boxes set wider than the top boxes. You can also 'shutter' the high frequency dispersion away from a side wall. There are vertical 'vanes' in the front of the box that you can unlock and move from under and above. This needs to be done before the boxes are flown. Not a problem with software that allows you to pre-cite the system performance.

Dispersion is 10° vertical, and almost whatever you like in the horizontal, courtesy of the variable vane feature.

Nexo sent 5 x Geo T, as a mix of two models. It is surely the most wicked (flash) looking speaker system yet invented. It is sci-fi, funky and very 'look at me'. The Geo T 4805 offers 5° vertical dispersion and is loaded with 4 x 8" Neodymium LF Drivers (two forward-facing LF/MF, and two rear-facing for LF with one 3" voice coil 1.4" Throat HF Driver).

The second box was the T 2805, with greater vertical dispersion: 15°. Geo T is a three way active system, like all four systems it benefits from an additional subwoofer. None of these arrays have enough bottom end for common amplified music. You would say the KUDO is the only product tested that would deliver full range music without subs.

Geo T offers two elements for array building; 5° vertical by 90° horizontal or 15° vertical by 120° horizontal.

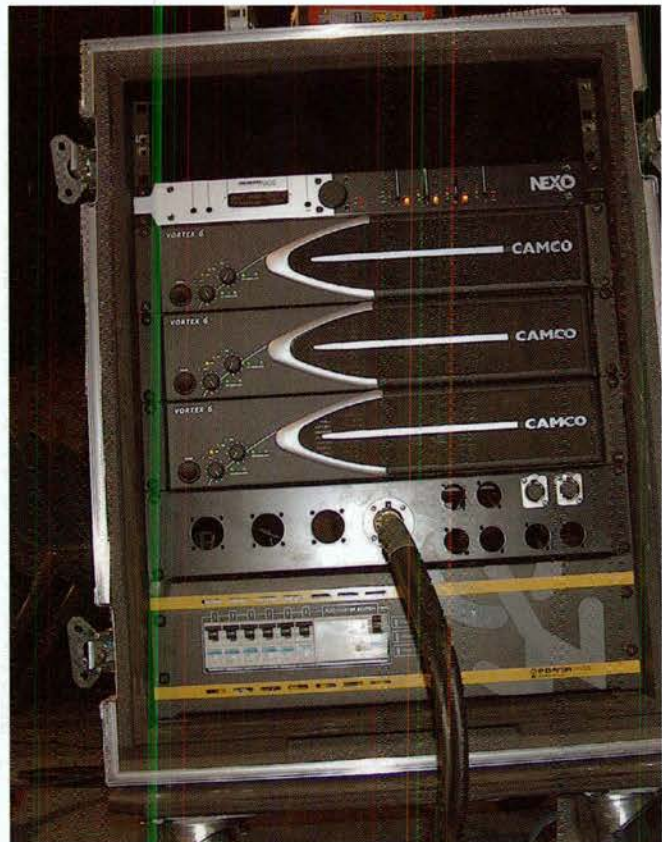
PHYSICAL

d+b looked 'very tidy' according to Scott. It was the lightest array and appeared well proportioned.

EAW's KF 730 sat longer in length (height) than d+b and Geo-T similar to the Kudo. The width was OK, and it looked fine. The flown weight was a little over 200kg.

Kudo is the heavyweight of this comparison, and the cabinets are somewhat deeper. This is underscored by the loading, plus LA-coustic use ceramic element woofers as opposed to neodymium. They assert that in testing they found lighter weight woofer magnets were prone to power compression or 'sagging' after continual useage - whereas the heavier woofers they selected are more robust.

Scott says the Kudo looks 'lovely', but it weighs in at around 500kg flown.



Camco Vortex 6 amplifiers and Nexo processor for the Geo-T array

Geo-T is the smallest array, but doesn't have the appropriate appearance for a church, according to Scott. The rigging is enormously high tech, and very suitable for touring. "It's maybe the most precise rigging system on the market". Weight was low.

SUBJECTIVE PERFORMANCE

These were some comments Scott made just afterwards.

d+b: "Very pleasant, real nice top end, very 'signature' response. It is "quite capable" in terms of output level."

EAW: "Sounds good, "it took a little more tuning to flatten it out, but it is a whole bunch cheaper to buy".

Kudo: "Sounds really, really good - remarkable, even. It has its own flavour. The top end is lovely, with real warmth. It is an enveloping sounding system".

Geo-T: "The vocal reproduction is remarkable, it has a very near-field sound."

PRICE LADDER

Expect to pay between 150 and 250 thou. for a pair of arrays like these, with amplifiers, cables, rigging and processors. It went EAW, d+b, Nexo then Kudo from least to most expensive.

MEASURED PERFORMANCE

This commentary is best coming from Scott in exactly his words. We at CX think this outcome shows why professional audio does require a considered approach. None of these systems are the kind of product you would buy based on specification alone.

First, Scott presents this disclaimer:

"This comparison is relevant only in the context of the arrays configurations that were evaluated and not general comparisons between products. A comparison between the same products in a different configuration could yield a very different result. This comparison is a complex discussion that is sensitive to the very specific needs of Hillsong Church. The conclusions of the evaluation are discussed below."

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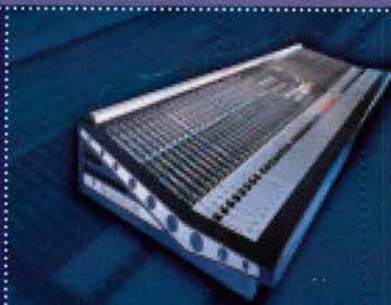
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LINE ARRAY

"The main goal here is consistency of response within the given coverage area", Scott continues. "Each of the systems evaluated can be made to sound excellent at a given position in the room. The challenge for the arrays is which of them provides the same or the most similar response at any location within the coverage area."

"The clear winner here is Geo-T. Whilst it did not have the most pleasing sound, it was by far the most consistent. This does not mean that Geo-T arrays provide the most consistent coverage in any situation; it does mean that given the array designs that we used for this evaluation the Geo-T was the best performer and, pending the next round of evaluations, has been selected for the installation."

If Geo-T is installed, the church will hide it behind cloth.

"The KUDO system sounded and measured superbly in many locations throughout the listening area, however the response from the system was inconsistent especially near the array. This is probably due to the front of the listening area being within the manufacturer's recommendations of how close the nearest listener should be. Given a greater roof height the KUDO system would be an excellent choice."

"The d&b Q-Series is an excellent product, however it suffered from a similar problem to the KUDO system in that it lacked consistency near to the array. The system surprised and impressed with its sound level capabilities given its size. The d&b cardioid bass arraying technique was evaluated with the Q-series single 18" sub-bass cabinets. The system comprises of two forward firing and one rear firing cabinets with d&b's proprietary amplification and processing. Whilst the system was not loud enough for this application, the cardioid steering provided a nu at the rear of the array of approximately 12 dB."

"The KF730 did not measure as consistently or as flat as any of the other systems, however after several filters were added the system sound good and measured well. The KF730 was by far the least expensive system and performed well given it is only 65% of the cost of the most expensive system. Given Hillsong's requirements for high

sound pressure level and consistent frequency response the KF730 system would require more elements to keep up with the others and therefore the array would become too large and impede on sightlines."

As discussed earlier the final round of system evaluations will be conducted shortly and will include Next Geo-T, JBL VRX700, EV XLD and L'Acoustics dVDO SC. The Geo-T is required at the next round to provide a point of reference for the other systems to be compared.

CONCLUSION

Scott has had his subjective and measured commentary; CX would add that any of these four arrays would be fine hanging in any of our hypothetical spaces provided that they fit; and that we can afford the cost.

In this case, Geo-T won the round, despite the Church needing to hide it behind some fabric if it is, in fact, the eventual winner!

Maybe unlike the motor trade, this is a truism of at least these systems: you get what you pay for.



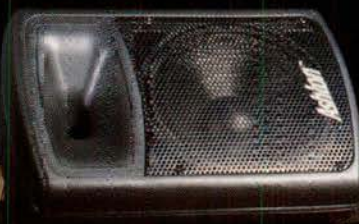
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Evolution

HOW TO KEEP YOUR BUSINESS HEALTHY

By Richard Autenzio, Owner: Show Biz Sound Hire. Brisbane.

Among the thousands of books written on the subject of running a business very few relate directly to our industry. Most of the rules are the same in most businesses but many are often disguised in a different industry language and this can make it difficult to relate them to our own business.

My parents always owned a business that we lived above or behind. Five of them to be exact. I worked with them into my early twenties and then spent seven years working for the very old original Palings Music Store in Brisbane. In the mid seventies I opened up my own small Hi Fi shop of sorts. This was the era of the Compact Cassette developed by Philips. The Cassette became the new way of listening and recording music. For the next eighteen years this little business and what it evolved into was my way of life.

Three years into this period I became the Calculator Shop because as calculators became more popular and that's what was selling well in one of my shops. I followed the market and what my customers wanted. I also owned The Battery Shop and The Styli Shop. After eighteen years I sold the whole business and became an entertainer's manager.

This was one of the shortest business periods in my life but it did lead me into the sound hire business, which I have endured for almost nine years. So what have I learnt about business over the years and much more, how does it all relate to this present business?

First question: Who was I dealing with and who were my future customers?

Second: Price structure and Profit margin: I had discounted everything in my shop down to a price with a profit margin I knew I could safely survive on and every customer who came into my shop and wanted to barter, I would say. "All my prices are discounted down to as low as I can go and you may be able to find it cheaper elsewhere if you look around long enough, but no one will be buying it cheaper than you from me"

The most valuable thing I have learnt in business and it is the one thing that will keep me in any business for a long time and that is, "Look after your industry and eventually it will look after you." "Screw your industry and it will eventually screw you"

Screwing only works if you're in and out quickly. It takes love and lots of care and attention to stay around for a long time and have a good successful relationship.

The trouble with small profit margin business is that they need to turn over far too much more business dollars to achieve the same as a regular fair margin business. They then also have to face the extra costs of staff and other running expenses to achieve that extra turn over. Far too many times I have seen business trying to make this transgression and just get themselves into financial trouble as they are fooled by all the extra money coming in. They somehow don't calculate their out goings expenses correctly as they are far too focused on expanding. They will often over commit before they realize that their expenses are much greater than they can manage and or expected. Business does not always work out the successful way we want it to, even if you have the best of plans. This is why so many great businesses go bust.

Talk to anyone who has just gone broke and the first thing they would like to say or put into words is: "I could have been more successful if I had not been so busy trying to be so successful"

There is a saying which I made up myself and I analyze this saying



Pic by Josh Gum

regularly as it is my reference and my guide line to keep me on track in this industry.

"I admire those who do it well and I aspire to them, but I also admire those who do it bad and make a lot of money" This saying is pretty crude but it sums up most of what I am saying and it makes me ask "which way do I turn to stay in the industry for the long term?" You must find your own place (Niche) and do the right thing for everyone.

How do I visualize and run my present business?.

"I am not the dearest and I am not the cheapest"

"I am not the biggest and certainly not the smallest"

"I am not the best and I am not the worst"

"I get my share, others get more, others get less, but as long as there is a pie, there is a share for us all"

"The size of my business is not the measure of my success"

"The jobs I do the cheapest are most likely to be the ones that give me the most trouble".

I never go out of my way to under cut anyone.

If an inquiring customer informs me that a sound hire company is charging them \$2,500 or more for a job that I would probably be able to quote around \$2,000 I will say "That sounds fairly fair to me. That sounds about right" I have even responded to the really high priced

jobs with: "Gee that's a good price" I never try to under cut or give the impression that the customer is paying too much.

I believe it is very hard to run a sound hire production business like a supermarket unless you are only in drive through hire. Even then this part of the industry can not withstand high level discounts because there is not the turnover available. It's simply not an every day consumable product and

needs to be protected by the players in the industry.

Last year in Brisbane, a very successful Audiovisual Business went to the wall. I watched this business grow very fast with such low priced quotes. If I saw them bidding for a job I would not even quote on that job, even if I could compete.

Now, when the big businesses over-compete and take on work at very cheap prices just to keep their guys working, then they are doing the industry a disservice, including themselves. To sum up.

"Look after your industry or you may not have a business left to look after your customers with"

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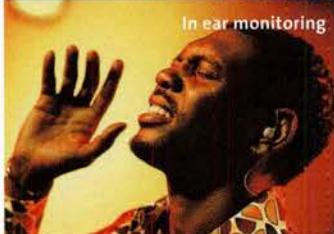
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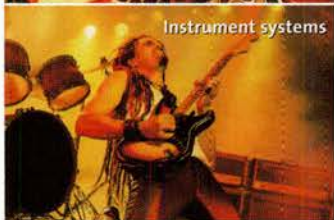
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TECHNOLOGY IS AGAINST ME

By Greg Kean, director, Lots of Watts, Sydney

Technology is against me. Anyone who knows me well will know of my love of technology and English cars. Many may scorn and suggest the two do not go together and if we had the time I would argue otherwise.

My problem is that I believe we, as a race, have evolved incorrectly. Yes we have evolved into slaves of technology! Try writing something in your computer without it telling you how to spell or correcting your grammar. Does colour have a "u" or not?

Why when I change settings to English- Australian does Microsoft insist on American spelling for some words? It is interesting that spell check underlines 'Microsoft's' and is telling me the correct spelling is Microfossil's!

I have owned many video cameras over the years only to have each one completely out dated inside a couple of years. From having separate back packs which boasted "only 14kgs" to units now so small that my fingers cannot operate the controls. And there is the point! Why are things designed to fight against the user?

My current mobile is an all singing, all dancing Nokia 7250. It takes photos, stores unbelievable amounts of information about me, can play Handdel's Messiah but I cannot operate the power button with my finger. I have to stick a pen up its backside to turn it on or off. Which Space Cadet thought that one up? Or am I meant to just leave it on all the time?

Thus, it controls me not the other way around.

This is my real point not the other one. (About not being able to physically push buttons because they are too small.)

My current car, a Discovery 2, has this great feature called ACE or Active Cornering Enhancement. A sensor in the roof and a sensor in the floor compare the G forces each is subject to and this controls hydraulic rams at the front and back of the car. These act like adjustable stabiliser bars, adjusting to the speed of the corner, controlling body roll. When off road the system relaxes and allows the suspension to do its job unlike conventional stabilisers that work against the suspension. And it really works! You can drive identical Discos with and without ACE and prove it to yourself. But I don't need to do anything to make it work. It just does its job. And this is my point and, if you remember, I did have a point. To me this is technology working for me not against me. I don't have to have any input it just works. This is technology I like.

I hear you say this is nothing new and you are correct. So why am I on my soapbox? Well it started because I went on holidays. A long overseas holiday which included a visit to that place which manufactures all the cars I so fondly read about in my youth. Yes London was calling.

So I needed to keep in touch with work via e-mail but was not always going to be at places that had access. But with a laptop, mobile and global roaming I can be anywhere and have access - or that's the theory. The first thing I did upon arriving in Britain was purchase local sim cards so that calls over there between our group (6 of us) were cheap.

It also gave me a number that I could give to people while in the UK without them calling via Aus. So far so good. Next step was to connect my phone to my computer and get a pay-as-you-go local service internet connection. As you are only charged for internet service when used for sending and retrieving e-mails there is no cost except the phone call, a very short local call! But one small issue: the Nokia disc that had all the required software to let the phone talk to the computer



did not come with internet access data. You have to get that off the internet, which of course you can't if you don't have the internet connected which is what you are trying to do in the first place. So after getting internet access at a B&B - surprise, surprise it all worked! Until a side trip to France. Then the connection stopped.

After checking and rechecking all settings, changing country codes etc still nothing worked. Then the phone told me I had run out of credit. Normally, when the sim ran out of credit I was connected directly to an automated system, which enabled a top up using a credit card. Simple. Except it wasn't doing that. In fact it connected me straight to a lovely girl who told me exactly what to do...in French.

It has been a long time since I studied French at school and I told her this but unfortunately recorded messages can never be interrupted. Remember when technology couldn't replace people it just assisted them? Swapping to my Aus sim card allowed me an expensive call to the UK to a service centre who could tell me the auto system couldn't be accessed outside of the UK, she also couldn't put me through to accounts so I could pay but, however, I could make a payment over the internet.....

What has any of this got to do with audio or lighting? As technology races ahead it seems everything is getting worse or at least, less human friendly. I noticed recently, at some gigs where I was a punter, that failure of or a miss match of software creates the need to upgrade the console on the spot.

I am sure some of you know what I am referring to.

Version 4.5 will not work in hot climates with moving buckets that are Vs3.2. That's because channel 3 turns the globe off at 50%, 1% greater than the strobe at its fastest speed. But that is OK because if you hold these three keys down when you turn the power on and go into the menu, in the help section if you type 'where's Wally' you will find a secret recipe of 11 herbs and spices. It won't help you at all but it makes chicken taste good!

Technology is great when it helps us but sometimes it is so clever it stops user access and hinders us. Back at one of the gigs the operator had a bright idea..."If we connect the console to the internet we can go to the manufacturer's web site and....."

Greg has earned
\$200 for this story!

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Worship Technology

Hillsong Conference runs Monday July 4 to Friday July 8 at Sydney's Homebush Bay Olympics site. There are many topics, with hundreds of sessions and lessons held in various places scattered all over the site. Huge rallies are held in the Superdome and the State Sports Centre. It is the largest single conference and convention event held in Australia, judged by the number of visitors.

Every year the Hillsong Production Team hold valuable sessions which specialise in technical production issues affecting Houses of Worship. Headed by Hillsong Production Manager, David Watson, these sessions are always popular.

• To book: www.hillsongconference.com

Tuesday

12.15 – 1pm. Phil's PA 101.

The intro intro session.

How to get The Word Heard, utilising professional audio techniques. Or, how to have your Pastor better heard, without embarrassing yourself.

Join Phil Webb for a light and bright introduction to the concepts and equipment that make up a small, medium or a large sound system.

12.15 – 1pm. **Recording.**

What goes into recording a Hillsong album, before and after the day. How the planning involves the team, how the project is actually captured, edited, and produced. With Andrew Crawford, Pete Wallis.

Afternoon: combined session.

Wednesday

12.15 – 1pm. **Choosing the right audio equipment.**

Join consultant and live sound engineer Scott Willsallen for a concise discussion on making the right choices. How do you know what to ask the elders for? What are the informed arguments you need to make? Do you need a consultant? When is too much audio just right, and not enough a plain embarrassment?

12.15 – 1pm. **Getting the right angle.**

Lighting looks plain, lighting is not bright enough, lighting distracts from the proceedings. Join Ian Anderson as he details what the fundamental principles of lighting in church actually are. How to position lights for depth of perception, to flatter, to draw interest, and for video. These are not all compatible concepts.

2pm – 3pm. **Special effects – when can they be used?**

Greg Yates and Dave Watson discuss the notion of the effect, how it can be used, when it shouldn't be used, and what the implications of use actually are. Some reasonably simple things

can be done at little expense, and some very expensive things can look fairly average.

2pm – 3pm. **Designing and plotting a lighting rig.**

Extending from the morning session (Getting the right angle), Ian Anderson talks about positioning your whole rig, how you access it, record a design, and enact a plot. If you plan properly, you can save a lot of time later on.

Thursday

12.15 – 1pm. **Microphones**

So many to choose from. Join Julius Grafton as he details what goes into a microphone, and what you should expect to come out. There are more than 1,500 microphones on the market to choose from. What are some mistakes people make?

Thurs 12.15 – 1pm. Room 2

In Ear Monitors.

Let us whisper in your ear! Dave Watson details a sensible approach to making an in-ear mix, and gives some cost saving shortcuts for those on a more restricted budget.

Afternoon: combined session.

Friday

12.15 – 1pm. **Meet the production team!**

With Dave Watson, Andrew Crawford, Mike Cuthbertson, Kevin Watts and Ian Anderson.

2pm – 3pm

Moving Lights.

What are the choices, and how do they work? What do they cost? When to use Movers, and when not to. With Ian Anderson.

2pm – 3pm

Advances in audio technology.

Where is audio taking us? How close is a quantum leap forward? What should we buy now, what should we wait for? What is the next big thing? With Scott Willsallen, Mike Cuthbertson, and Julius Grafton.

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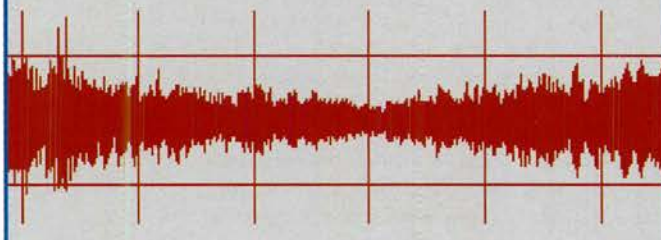
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WHEN THE LIGHTS GO OUT

By a production person who needs to remain anon

I work freelance as a production technician, and it was about a year ago that I took on a gig at an educational institution. It was a small set-up with basic lights, a humble PA, and some video projection. There was no reason for it to fail.

We were set up an hour earlier than expected, which left plenty of time to duck out and get some junk food before show call. I arrived back from my dinner with plenty of time to show the client around the venue and explain the proceedings. As I walked the client towards the control room, about 15 minutes before front of house opened, suddenly the emergency lights switched on and a matter of seconds later, the entire floor of the building was without power.

Ten minutes of hunting and searching, calling electricians, and attempts to run extension cords from the floor above were all hopeless – it seemed that the show was about to go ahead on emergency lighting and a battery powered PA that we dug up from back-stage.

At this point everyone had seemed to have given up – the event coordinator had sent someone out to buy candles to put in the foyer – they would probably have even pulled off the mood lighting – but that didn't help the fact that a week's worth of pre-production video work was about to go down the drain because we couldn't find enough power for a PC and a projector – so I started to dig.



It turned out that 2 weeks before the event, the venue manager had installed some cupboards along the underside of the control room desk to hide away all the "messy cables" – clearly they hadn't worked in many control rooms before if they thought they would be able to hide all the cables away! What made it worse was these cupboards were locked to stop anyone from unplugging stuff!

So I forced one of the cupboards open and onto my arm fell the end of an IEC cable. As I pulled my arm away, the end of the cable came with it – but it turned out to be just the end; the cable had been sliced in half when the cupboard doors were closed onto it!

I carefully reached in and flicked the power point off, and as I was hitting the switch, I made due note of the fact that the death-trap cable was not bearing a test tag.

As I stuck my head under the desk I noticed that only two of the venue's appliances were tagged – with 12 monthly tags that had expired half way through 2003.

According to this venue, apparently it's more of a priority to make a control room look neat and tidy than to worry about the fact that taking the simple precaution of inspecting, testing, and tagging the leads and appliances regularly could have prevented this entire incident.

Had I grabbed the other half of the cable I might not be here to write this article.

MEDICAL PROBLEMS ON THE JOB

By Dr. John Anderson. He sent some really ghastly photos too, but we chose not to use them. Only read if comfortable about problems associated with the dark recesses of your

There are a range of common afflictions which my friends in the entertainment biz complain to me about. They usually seek me out in private and never come to my practice. They don't pay me for my advice either, but that's what friends are for.

Number one on the list is chaffing. It's just like diaper rash. True! But really, it is tinea pedis. A rash that forms in places like between the toes, in a baby's diaper, and between the clefts of your butt.

Ewwwww, too much info?

This is a very common ailment for people working on their feet, doing a lot of manual stuff, or even playing guitar while wearing lycra or fake leather. Matter of fact I got it wearing real leather pants and a chrome cod-piece, but that's another story.

Prevent it by using a little baby powder or moisturiser down there after the shower. Treat it by visiting the pharmacist and telling them what you have. Get a non prescription antifungal cream.

I know a roadie who had such a bad rash, he was continually putting moisturiser, vaseline, and various stray ointments in there. It was very ugly, and went on for a long time. Two applications of a proper anti-

fungal cream and problem gone - real fast!

A distant relative of this problem is the Hemorrhoid, an unexpected anal protuberance that absolutely no-one except women who have been through child birth ever talk about. These things are a common pain in the

Do not be ashamed. They affect 89% of all people. Roadies get them more often, like labourers, because of lifting strain. There are a lot of treatments. I need to tell you what to do to minimise risk and pain until you get proper treatment.

If the Hemorrhoid is not treated straight up, it may bleed. If this happens, quit work and visit your MD or hospital straight away.

Most do not bleed early on, you first know you have the thing due to discomfort and itching down there. Act straight away..... forget about treatments you see on the shelf at the drug store.

To ease the discomfort, and to stabilise the thing so it doesn't get more irritated and inflated, get

some Vaseline Petroleum Jelly. This stuff is used to ease burns too. I can't recommend it highly enough. Always carry some with you.

Smear a big glob around the problem. Instant relief! Then see an MD.

Annon has earned \$150 for this story!

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The Doc has earned A\$100 for this story!

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Geoff Dugmore
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Sidh Solanki
'... in the studio we usually have the pick of the crop when it comes to microphones but I keep coming back to my Gemini - I use it for almost everything from recording bass cabs and kick drums to acoustic guitar and vocals - knockout detail and luscious warmth - plus the two valves glowing in the back... simply beautiful.'



Outkast

Steve Levine
'The Gemini studio tube microphone is a very unusual microphone as it combines both the traditional warmth, expected of a high quality studio tube condenser microphone, along with an exceptional transparent high end, normally only available with solid state designs.'



Culture Club, The Creatures, The Beach Boys, Westworld

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Paul Borg
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Busted, Mc Solaar, James Brown, Gangstar, Urban Species, Sugababes

Z5600A

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Sae - London
'I tried the new mics from SE Electronics and the Gemini was brilliant. It had a clean, warm representation of the vocals I recorded. You could hear every breath of sound coming off the vocal chords...just amazing.'



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AMPLIFIERS (AND ME)

By a Paul Matthews, owner, P.A. Matthews Audio, Sydney

For this 3rd grade audio engineer there could be no bigger holy grail than owning your own amplifier. A magical, amazing box that made tiny little quiet things sound huge. An Amplifier has everything. Knobs, switches AND even the occasional blinking light. Some of them had little glowing bottles inside. Plugs, sockets, terminals.... wow. While all the other kids were wasting their time with bikes and balls all I wanted was amplification. It's a small wonder when I grew up gazing at those magical Dynacord things that lit up and glowed all over in my dad 's early '70s RSL covers band. Right in the middle was an ice cool needle thing that moved back and forth with the sound. Oooh I just HAD to have one of those.

And so it was one Christmas that a 3 watt mini kit in a black plastic box was mine. Complete with back lit VU meter. I think it lasted about 4 weeks. But ooh what a heavenly month it was!

THE OVEREEM

Around 1974 (when I was still scribbling drawings of power poles in infants school) Dad took delivery of his work's latest toy. Going there to get it was like going to the Wizards' Lair with benches, oscilloscopes and electronics everywhere. The prize? A Hans Overeem designed and manufactured twin 100 watt transistorised amplifier – designed at the time to compliment Dad's new job of demonstrating ARP music synthesizers. That jet black case.. that unique Overeem Extruded Aluminium look.. it was enough to make me want my nappy back.

This was in an era when the Crown DC300 was only just becoming known and with the import duty must have cost more than a car to own one. Everybody used poxy little 30 watt mixer amps and column speakers in their bands. Disco was unheard of. To compliment this jewel Mr Overeem had also fabricated two glorious 12" quad boxes which stood twice my height and only just fit in Dad's HQ wagon.

First stop? Sydney Barracks, where Sydney Symphony was arriving in droves for their rendition of the 1812 Overture. One Quad Box per side, the amplifier and ARP 2600 Synthesizer with daddy held right up the back soon waiting for "the moment". The Armed Forces cannons stood ready also.

Boom Boom! So huge was the sound that most of the Orchestra actually stopped playing – genuinely believing that something had gone wrong with the cannons and there had been an explosion. THE AMPLIFIER had arrived. The world would never be the same again. Most people simply didn't believe how loud and good it sounded. For a short time it stood as the highest powered amplifier manufactured in Australia – surpassed only by the aforementioned imported DC300s then becoming common amongst the early Rock & Roll PA operators of the time.

THE AMPLIFIER went on to live a glorious and colourful life. Whilst the Quad Boxes soon met their fate (they were simply too big to move around) they were replaced by a set of Bose 901's which still seemed to have no trouble doing THE AMPLIFIER justice in just about anything we could throw at it. It went on to perform thousands of shows all over the state and worked like a charm until 1984 when it finally went DC on a

job and took one of the 901's with it.

But alas not all was lost. With the original circuitry removed and with Yours Truly now much older (and supposedly wiser) the power supplies were retained and added to a set of 170 watt kit mosfet output boards which after a lot of mucking about eventually resulted in an excellent studio reference quality monitor unit. It met it's final end in 2004 when Barnabas Studios perished in the Canberra Bushfires. A sad and sorry tale of molten aluminium buried beneath a classic Tascam analog desk.

Vale the Overeem Twin 100.. You rocked Sydney like none beforehand.. and you were the first.

THE HAWK

At the other end of the scale was the HAWK. A range of "cheap" instrument amplifiers imported from Britain by Boosey and Hawkes in the '70s, I doubt many of them survived much beyond the year they were purchased. They had a habit of redistributing their output capacitors over the inside of the box. And so it was that one of these "returns" made it home to this (by now) primary school aged audio engineer. Soldering iron in hand, the offending capacitor was diligently replaced with another from a trashed TV set and.. amazingly.. it worked!

"The Hawk" lived on to serve an amazing five years. It's moment of fame arrived in 1976 when on a tiny trolley, Yours Truly wheeled it and a small tape player all the way to school and took it; on the bus to a nearby high school hall along with my 4th grade class. Declaring the house system "useless"; it fell to Yours Truly to deliver a mix of Pink Floyd's "Dark side of the moon" to the audience as my class

danced meaningful moves – kind of like the very first Rock Eisteddfod. With everything ready the play button was diligently engaged and the room filled with a glorious 5 watts of sound

Needless to say we won the first prize. It seemed that ours was the only act that anyone could actually hear and that wasn't distorted beyond all oblivion. I can still remember dozens of people lining up to ask me where they could buy one!

The Hawk met it's end a little later in my first year of high school. With the chipboard guitar amp box now almost totally destroyed a friend

offered to take it home and build the amplifier into it's own separate box – which would easily allow me to use it with a separate speaker box just like daddy's.

Alas it never made it back home. With the job completed and looking really nice the plugging in ceremony was a dash of hopes as the "hawk" exploded into a frenzy of flame and smoke. Seems my friend had carefully and mindlessly swapped the 240v power input and speaker plugs on the circuit board. Thing is – this bloke went on become an Electrical Engineer with a famous and very large telecommunications company.

Hmm. Electrical Engineers.

That's another story.



Old 'CORD' amps, circa 1972. Image from the Juliusmedia History of Australian Sound and Lighting collection.

Paul has earned
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Neil Diamond : behind the tour

- By Julius Grafton

Ten years ago legacy rock was subject to some ridicule. By the time the Rolling Stones toured Australia in early 2003, the sentiment had shifted. Hard. Shows by people who have released at least 3 successful albums in a row, and who have a platinum 'best of' release, are bankable for promoters. If they have 20 albums 'in the bank', the tour is almost a lay down misere. Or in Australia, a dead cert.

Most bankable of all is Mr. Neil Diamond, who is a gold plated investment for concert goers. He returns with quality. That's the lesson learned a long time ago by the likes of John Farnham. It's also the lesson forgotten last time Cliff Richard came down under and performed with abysmally stripped back production, no video, and not enough lights to even spot his dancers.

Aside from an exceptional back catalogue and a world class band, Mr. D has possibly the highest production values of any legacy act on tour today.

This results in a show which is seamless and completely fulfilling, even if you don't necessarily like the music. So what are extremely high production values?

Thanks for asking.....

When you take your seat for a show at the new N.D. world tour there is just a stage with some pretty projections onto the surface. There is one guitar, and one mic stand. The back and sides are open, the show is not technically 'in the round', but there are audience seated back there. Obviously there is no backdrop or cycrama.

They don't want the thing photographed, as the rest of the world is yet to see this tour - which will run for as long as two years.

At the front of house position there are no risers, the control equipment is at audience level, with people seated right around it. At this point anyone not accustomed to looking up at the black stuff flown above the stage might be a little disappointed.

Either side, up very high, are some projection screens. Atop the stage is the mother of all lighting rigs, a design of Marilyn Lowey who is also a long time collaborator of Mr. D. The trusses meet at a circular pod in the centre, and two arms reach right out over the audience making a 'V'. The lighting rig is loaded with an impossible number of moving head fixtures, and a line of moving mirror Cyberlights is underhung along the back.

Right away you notice that there is a long line array plus a flown sub array AND a smaller centre cluster. Then you notice the side arrays are in stereo - there are TWO of them, each side. I had never seen this many line array boxes flown anywhere indoors before.

Neil's sound engineer Stanley Miller announces the show is about to start. No one will be admitted and seated during the first number. The doors are closed as the house lights dim.

A keyboard starts, as the keyboard player, Alan Lindgren rises into view, followed by Tom Hensley on the 2nd keyboard rig. The stage covers have been zipped off in the blink of an eye, exposing pits from which each player rises. The whole band rise into view, and suddenly the stage is full. Less than a minute ago, it was devoid of anything, with no apparent possibility of a band.

Neil Diamond : behind the tour

Neil Diamond appears as if by magic at the top of a lift at the rear of the stage, which is a curved ramp slightly above the drummer and percussionist. The show is off and running.

The sound is fat and full, with all elements where they need to be, and plenty in reserve.

Up high the screens show the action for those further back, essential for any arena show these days, and when missing (Cliff Richard please note) the audience really do notice.

The lighting rig has totally come alive, it is so monstrous that there will not be any two looks alike during this show.

Most impressively, the band are slick and tight and also funky. Drummer Ron Tutt is hitting hard like a 25 year old, bass player Reinie Press and percussionist King Errisson are looking like guys in their thirties. They are double that age, but are playing with assured confidence and not trying to look young.

Stage left is a diva trio, stage right a quartet of brass. Two keyboard players are stage centre, either side of a central ramp. Two guitarists round out the lineup. Incredibly most of this band have performed with Neil Diamond for 30 years or more. They all are enjoying themselves.

So that is the definition of high production values. In short, spend what is required to garner the best sound, lighting, vision and staging. Invest in excellent musicians. Rehearse them for 3.5 months before your world tour. Involve and engage all your production people with the rehearsal process. Then tour the world with confidence and keep the ticket prices realistic.

Sovereign territory

This part of the story begs some controversy, because not one Australian sound, light or staging company really had anything to do with the Neil Diamond tour. They shipped everything – every nut and bolt – into Australia and New Zealand. The local component was labour for crewing and rigging, plus vision.

After the three point five months of rehearsals in Los Angeles, the production was packed into 14 shipping containers and sent to Wellington. Two shows were held in Christchurch, where another show could have been viable – but the schedule was the schedule. The production was trucked to Christchurch airport, and the semantics of converting cubic feet (it is a USA tour after all) into cubic shipping containers began, a race against the clock.

When the 747 freighter powered down on the cargo ramp at Christchurch, the crew already knew they had too much equipment for the 100 tonne capacity airplane. Not that weight was the issue, just volume. Technical production equipment usually is cubic, not heavy, in the weight verses bulk calculation of freighting. Some of the gear would go in under belly shipments on scheduled flights that next 24 hours.

Going backstage at a Neil Diamond show, you enter a world that is almost sovereign territory of the United States of America. It's not as awesome as some bands, who have catering staff and therapy on the road – this band make do with locals for all that. But it is a very confident, professional and heck, I said it, mature environment. The crew and the band are there to do a job, and to do it they need consistency.

The promoter needs to supply a local interface, and there

The Production Team

Stanley R. Miller has been with Mr. D for longer than anyone can recall. It is a very famous pairing! "He puts up with me, and I put up

with him", Stanley comments.

"He tells me what he wants, and I say 'Yessir!' "Neil values production and believes in giving people their money's worth", Stan says.

A Neil Diamond tour ALWAYS has the leading edge in audio technology, and this one is no exception. It has the previously mentioned left - centre - right JBL Vertec PA system, with stereo side arrays. All this is driven by Crown amplifiers, and processed by Lake Contour processors and Messa EQ's.

Everything audio is run off the stage and converted straight into digital using a bunch of Yamaha digital mixing engines. Then digital outputs from these DME's are fed off to the Yamaha PM5D consoles - one for stage monitors, one for front of house. The consoles are fed AES-EBU inputs, one for every two channels of audio. So there is a multicore of kinds, and it feeds into optional AES-EBU cards on the back of the PM5D consoles.

For this reason, the consoles are the base models, not the more common RH models. RH stands for recallable head amp, in this case the inputs are all digital so the audio crew do not need the recall feature which simply remembers the previous input gain setting. These touring



Monitor desk (PM5D) with a bunch of Aviom units and a Yamaha submixer underneath.

Mix legend Stanley R. Miller pictured during a previous tour. He has always used the latest technology, and is a fan of Yamaha's digital mixing product line.



PM5D consoles are distinguished by having a standard rotary gain control for each input, along the top strip nearest the back. They actually look better for it!

With everything already digital, making a ProTools recording is easy too. Monitor engineer (and complete gentleman) Bernie Becker runs each show into his PT rig, and spends hours in the hotel room archiving the show onto various hard drive caddies.

The monitor rig is cutting edge too, with a bunch of little Aviom personal monitor systems. Originally these were all on stage, but several were removed, including the backup singer units. Mr. D wanted an uncluttered stage, so something needed to go.....

The crew remarked that at the first full production rehearsal in L.A., Mr. D walked in and said it looked like someone had backed a dump truck up to the stage. Some backline equipment was quickly hidden....

In keeping with the smart thinking, the show uses just 16 wireless channels! That includes in-ear monitors, which everyone is using. The crew reasoned that many players were static, so they could be connected using cables. Less wireless equals less chance of things going wrong.

- CX wish to thank Stanley R. Miller and Bernie Becker for spending valuable time showing our college students around and talking with them.



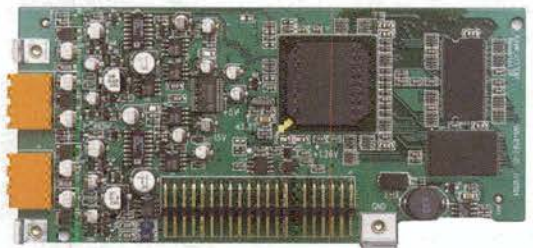
Wireless rack, and Aviom units (above).

Monitor desk position, showing ProTools rig on right.



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One of the first customers to test the new AEC2w cards, Sharon Harrod of United Technologies, commented:

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By Alan Maurant

Split Signals

(and the sound engineer)

The concert stage is the same everywhere. The fundamentals are the same. A microphone or D.I sends signal down a microphone cable to a stage input box connected via a multicore to the front of house (FOH) console.

This is a simplified account I know but from the microphone to the audience the signal has gone through a complexity of electronics and signal paths to arrive at the audiences' ear, with integrity - we hope.

In a concert environment there are usually two sound engineers - one at the FOH console and one at the Monitor console. The FOH engineer will mix the bands' sound to the audience, and the Monitor engineer will mix the stage sound to the band only. On a much smaller scale it is common for the FOH engineer to do both, however it is rare at large concert events. Because a discrete mix to stage is needed for stage sound, it is necessary to have an additional mix from the main input. To provide for, this a microphone splitter, either passive or active, is used.

A passive split can be just a parallel wiring configuration from the plus, minus and ground pins of the input connector to two or three other cables. The problem here however is that the consoles are joined together electronically at the inputs and older consoles in particular may adversely interact with each other. Liken it to a big 'Y' split, so check to make sure the consoles don't affect each other when phantom power or gain trim is applied.

The input impedances of these consoles provide additional paths for the electrical current and actually increases the overall load presented to the microphone signal, thus limiting how many times it can be split before affecting the sound quality. Usually three is the limit although I would certainly always avoid using this type of split in favour of a 'transformer isolated' split. This is a transformer used between the input and each corresponding output, employing a 1:1 turns ratio and its output side is connected to the second or 'Isolated' split output. Two or more secondaries are used to achieve more than one isolated split.

Not necessarily all the outputs of a passive split are isolated and one or more will be directly linked to the input. The transformer will pass the microphone's AC audio signal but will block DC voltage in either direction including 48V phantom power so one of the consoles has to be connected directly to the input before the transformers. In most cases, the FOH console will provide phantom power.

Some manufacturers make splits with provision for multipins, with inputs from stage cores, and FOH and MON outputs that are multipinned to 'tails'. Male and female 'XLR tails' can be used at each determined end - male 'tails' will have pins and the female 'tails' will have sockets. There are also multipin systems that are considered 'asexual' in that they have no gender (each connector contains both

pins and sockets) so depending on the system you are using be sure you have the right end when you run out the multicores. Where split racks have multipins, dedicated cores are required although it is possible to patch directly into the inputs with a single microphone cable or dropbox.

More common in concert sound is the 'Active' splitter where the input signal is applied to an amplifier circuit, much like a mic preamplifier input of a mixing console. They are electronic and designed

to provide a wide and flat frequency response with constant impedance at the microphone.

Phantom power and 'ground lift' can also be provided for at the splitter - but beware of splits that deactivate the phantom power when the 'ground lift' is activated.

Try not to use the active splitter as a gain stage. Read the manual. The split should be strictly used as a split. Find the default setting that will allow signal in and out with no level difference presented and set each input as such. Because the split might be used for high level feeds you might have to select 'Line Level', which is generally -20dB from mic level.

Generally active splitters will have both electronic and transformer isolated outputs as balanced splits - usually two and two - and sometimes a fifth dedicated parallel 'Link' output. The 'Link' output may be used to provide a direct, non active feed, and can be used to daisy chain adjacent channels to provide more output feeds from a single microphone, acting as a media split for TV and press conferences.

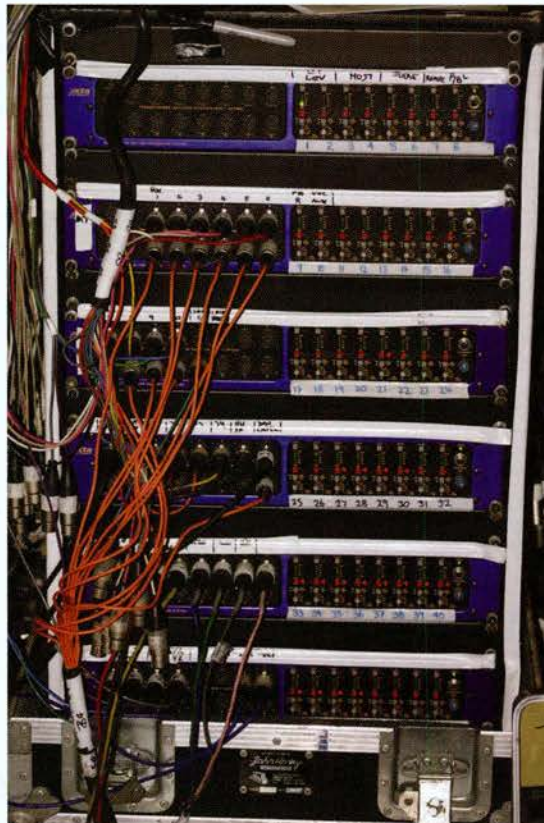
The inputs are usually at the rear and outputs at the front, however there are some with parallel inputs and outputs, duplicated front and back. This is done for convenience sake and you should never use

the same input or output twice. More than likely the split will have XLR outputs so use female 'tails' on a multicore and likewise for the inputs. With the splits clearly marked, it is usually broadcast that takes the ISO splits.

At festivals or multiple artist events, it is common for each band to have an alternate stage input plate. Using the same core to the splitter, as each act is changed over the multi-pin connector is removed from one plate and inserted into next. Each bands' instruments will come up on a set of generic inputs at the splitter, on stage boxes, at FOH and Monitors and anything esoteric or uncommon throughout the day is added to the input or an existing unused channel is used.

As one band is playing down stage the next band is being preset upstage on rolling stage risers - low risers on wheels for back line gear may be employed for easy changeovers, in which case the microphones may be preset with an input plate on each of the, say two, backline risers. Microphones are preset and line checked on the alternate monitor and FOH consoles.

Commonly the drum riser will have its own stage plate. The backline gear, usually guitar amps and keyboard rig, are easily accommodated on one 20 input stage plate. Two stage plates, connected together - in and



out via multipin and going to the same set of inputs, are placed each side of stage or on risers. Make use of whichever input you need but be sure to avoid the using same input twice. Drop boxes are small input boxes, usually up to 12 channels and useful to 'drop' downstage to pick up inputs – eg. front line vocals, acoustic guitar, keyboards, cocktail drum sets going to the split rack

In the case of one monitor console for multiple bands on one stage, line checks would happen once the act is changed over and stage plates have been swapped. Only then can you check each input, usually concurrently at FOH and Monitors. More than likely the festival organisers have planned for the event to be recorded for prosperity, so expect a visit from the broadcast van to check the patch. They should follow the line checks with FOH and Monitors.

They will take an ISO split from the split rack and they should follow the generic input list used. The standard input list would start with drums, then bass, guitars, keys, ... vocals etc. however each console can be patched in any order as long as the kick drum comes up on the kick drum channel and the snare in the snare channel! Remember, each core and stage box should be labeled. The split and each stage plate should have the input description, or at least the generic input marked.

Whilst the FOH console takes all channels, it is common at times to drop channels to monitors due to limited channel inputs. A mix return from FOH may have a drum 'toms' mix or for that matter anything else. Depending on the event, some channel inputs may bypass the split altogether, only to return to the split as a mix return for FOH and Monitors. This scenario is more prevalent in broadcast events. For instance, you might have ten SM58 microphones on 20 members of a choir backing up a band. The choir is mixed in the 'Broadcast' van and the mix returned to the venue via the split on a stereo return. Also television events require audience microphones aplenty and since they are not required at the FOH or Monitor consoles they will bypass the split.

Another scenario you might encounter is a touring act with their FOH and Monitor consoles that need to be patched into the existing system. Some acts will tour with a FOH and Monitor rig requiring an independent multicore to their FOH and Monitor consoles. Hopefully in this situation they will supply suitable connections to patch, avoiding a manual re-patch.

When there is one stage, multiple acts, two or more alternating monitor and FOH consoles with two split racks using common foldback, FOH and amplifiers it gets complicated. If you are involved in this kind of setup but not part of the Sound Crew who designed and set it up you should accept that it works and just mix the band. If you are part of the changeover crew you will probably have sound people on the stage to look after the microphones and patching. Having the artists' stage plots and channel input lists in advance can help you plan the changeovers and how you patch the plates and drop boxes.

Always stick to the input list and expect the unexpected.

EXPERIENCE WILL OUT

Book reviews by Graham Walne

I've always thought it unfair to criticise people for their lack of experience because it's not their fault they were born when they were. The most one can say, it seems to me, is that someone has not made the most of their time on the planet.

Such a criticism cannot be applied to the two authors of the books reviewed here. Both production manager Joe Aveline and lighting designer Francis Reid have amassed a considerable archive of work and it is to their credit that they share it with us in such a readable manner.

At this point, I should declare an interest in writing this item because both men are well known to me. Francis Reid seduced me into lighting design (away from set design) when I was a student at London's RADA: apart from making it accessible he also made it fun. Much later Joe Aveline and I worked on a national training body in the UK where the breadth of his experience was invaluable in writing qualifications; Joe's humour softened many difficult negotiations.

The wit of these two men is apparent in both books and it is clear from their many experiences that survival in the theatre relies heavily on being able to maintain a perspective. Both men have achieved the state of remaining stage-struck but able to view their own work with perspective and distill the essence of their craft.

The chapters in Joe's book cover specific aspects of production management – such as roles and relationships with designers, crew and contractors and including budgets and critical path analysis. Whilst the text contains many examples, specific anecdotes are highlighted separately in boxes at regular intervals. I know anecdotes are often criticized but anecdotal explanations make the issues easier to remember. Mr. Aveline's patois comes clearly off each page, it's the next best thing to having him talk to you in person. Francis's book covers his 50 years in theatre and, whilst inevitably touching on chronological and biographical details, its chapters relate to specific types of work, operatics, plays and musicals, west end, Strand, and educating. Anecdotes are rare but smoothly incorporated into the text to illustrate specific points.

In asking for these books to review (both have been out for some time), I was concerned that the long UK experience of both men (although both have also worked

extensively out of the UK) would mean little to Australasian readers. There are two points here, whilst the books can provide an insight into UK venues, companies and people, in any case these details are not essential to the understanding of the points being made. Production Management and Lighting Design is much the same the world over.

Francis's book records the pleasure that both he and his colleagues gained through experimenting with light, initially at a time when lighting design as we know it was a relatively young art. It is instructive to read of the degree to which a lighting designer also benefits from a knowledge of set and costume design and of music.

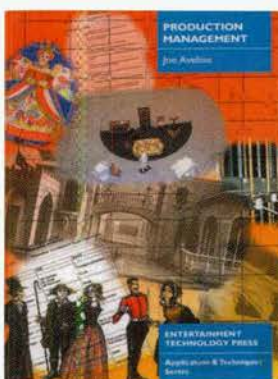
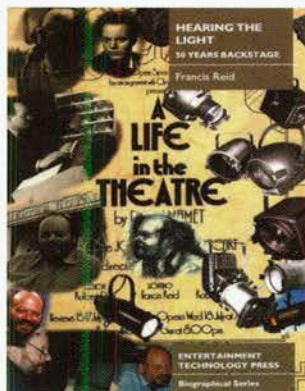
Similarly, in Joe's case what becomes clear is that production management is not simply a combination of skills and knowledge about the technical elements which go to make up a production, other skills are required too, including the ability to manage people and to be pro-active about planning rather than reactive to incidents. Mr. Aveline also records several examples of the value of

lateral thinking in what is mostly a linear process.

Both books contain illustrations but what impressed me was that Francis's book contains a large number of colour illustrations, not inserted separately and on glossy paper, but coordinated with the text and printed on the same paper. Sadly, Francis's book contains no photographs of his lighting. However, it must be said that this is perhaps a generational characteristic; whilst I am younger than Mr Reid, we both grew up in times when there were very few photographers who could (reasonably) accurately record a lighting picture.

Biographical works such as these are rare and therefore interesting in their own right. Whilst there is an astonishing and, continuing, proliferation of books about lighting there aren't many books written by lighting designers about their own work, therefore, Mr. Reid's work should be required reading. Equally, Mr. Aveline's too, especially for those who write courses about production management.

- PRODUCTION MANAGEMENT
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MIXING IN A PLUG-IN WORLD

To your CPU, mixing is the ultimate power trip

by Craig Anderton

You've got to love plug-ins, but...well, no *but's* really...they've undeniably changed the rules of mixing. So while the issue back in the hardware days was always whether you had enough hardware to deal with all your tracks, now that you can insert the same plug-in into multiple tracks, the question is: Can your processor handle all of them?

Well here's another question: Does it matter?

After all, mixing is about music, balance, and emotional impact not processing. Yeah,

yeah, but it's also about fidelity, because you want good sound. And that's right where Mr. Practical gets into a fight with Mr. Power.

THE PLUG-IN PROBLEM

Plug-ins need power. CPU power. But, CPUs can't supply infinite amounts of power. Get the picture? Run too many plug-ins, and your CPU will act like an overdrawn bank account. And you'll hear the results: Audio gapping, stuttering, and maybe even a complete

audio engine nervous breakdown.

And in a cruel twist of irony and fate, the best-sounding plug-ins often drain the most CPU power. This isn't an ironclad rule by any stretch, though. Some poorly written plug-ins are so inefficient that they draw huge amounts of power, while some designers have developed ultra-efficient algorithms that sound great and don't place too many demands on your CPU. But, *in general*, it holds true.

Bottom line: If you need to use processing in your mix, you want as much available power as possible. Here are the Top Ten tips on how to get it.

1. UPGRADE YOUR CPU

Let's get the most expensive option out of the way first. Because plug-ins eat CPU cycles, the faster your processor can execute commands, the more plug-ins it can handle. Although there are a few other variables, as a rule of thumb, *higher clock speeds = more power for plug-ins*. Still running in the sub-GigaHertz range? Time for an upgrade. **Cool bonus:** Any kind of "rendering" (applying effects, format conversion, and so on) will happen faster, too.

2. INCREASE LATENCY

And in the spirit of equal time, here's the least expensive option: Increase your system latency. When you're recording, especially if you're doing real-time processing (e.g., playing guitar through a guitar amp simulator plug-in) or playing soft synths via keyboard, low latency is essential so that there's minimal delay between playing a note and hearing it. However, that forces your CPU to work a lot harder. Mixing is a different deal: You'll never really notice 10 or even 25ms of latency. The higher the latency, the more plug-ins you'll be able to run. Some



Fig. 1: Ableton Live's Reverb has been inserted into the A Send 1 bus, thus saving considerable CPU power over inserting several instances into multiple tracks.



Fig. 2: When mixing, 20 or 30ms of latency will let you run more plug-ins, with a negligible tradeoff in performance.



Fig. 3: Even running a reverb, heavy-duty guitar amp simulator, and limiter, the UAD-1 is using only 35% of its onboard CPU's capacity.

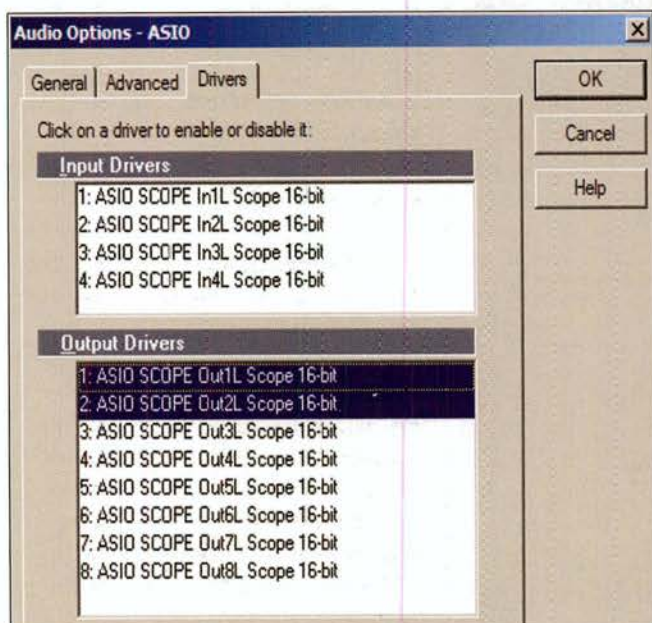
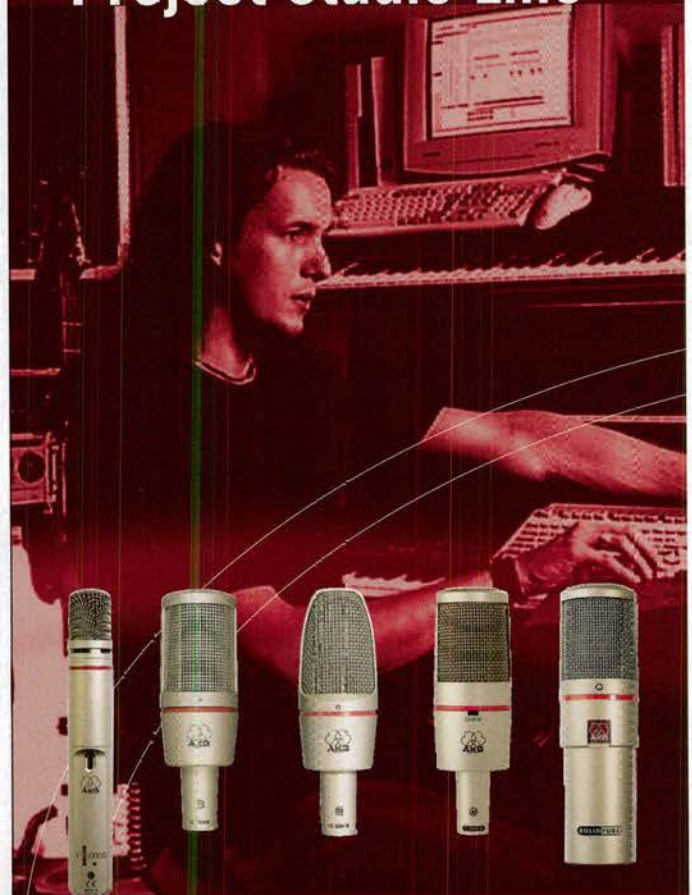


Fig. 4: When it's mixdown time with Sonar, I disable all the inputs and all outputs, except those needed to carry the stereo mix.

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MIXING IN A PLUG-IN WORLD

apps let you adjust latency from a slider, found under something like "Preferences." Or, you may need to adjust it in an applet that comes with your sound card (Figure 1).

3. USE HARDWARE-BASED PLUG-INS

The August 2004 issue went into this subject in great detail, so we'll just recap here. Several companies make high-performance audio DSP cards — TC Electronic PowerCore, Universal Audio UAD-1 (Figure 2), Creamware SCOPE and Pulsar, Digidesign DSP Farm, and so on. These either insert into your computer, or connect to it via a fast interface, like FireWire. The cards run their own proprietary plug-ins (although they often enjoy third-party support), so the plugs don't load down the host CPU — the boards handle the heavy lifting. Although these boards will eventually say *no mas!* as well, one advantage compared to CPU-based processing is you have a finite, known amount of power so you can "red-line" the DSP without fear. With your CPU, sometimes running too close to the edge will cause a meltdown when the CPU has to perform that one extra function. **Cool bonus:** Hardware-based plug-ins are often platform-independent.

But, you say,
there will be
some latency
going through the
reverb. Think of
it as free
pre-delay.

4. AUX BUS BEATS INSERTS

Inserting one effect in an aux bus is much more efficient than inserting multiple instances of an effect in multiple tracks (Figure 3). Of course, there are some cases where an effect must be limited to a single track. But for something like reverb, which tends to draw a lot of juice, see if it isn't possible to do the aux bus option instead. Sometimes, even EQ can work as a bus effect. For example, suppose you miked a bunch of acoustic percussion, and feel all

the percussion tracks need to be brightened up a bit. Send them to a stereo bus, and insert a single EQ into that bus.

5. TURN OFF STUFF THAT'S NOT NEEDED

Anything that's active is making demands on your CPU. Using only one band of a four-band EQ? See if you can turn off the others. Even input and output drivers drain your CPU. When you're mixing, you probably don't need *any* of your sound card's input drivers to be active (with an exception we'll cover next) — go ahead and disable them (Figure 4).

6. GET HARDWARE INTO THE ACT

Reverb is one of the most CPU-intensive effects, period. A native reverb that sounds good will show no mercy to your CPU, which is why some of the best reverbs come from hardware-based plug-ins. But you can also use an external hardware processor. Dedicate one of your sound card output buses to feeding the reverb, and bring it back into an input. But, you say, there will be some latency going through the reverb. Well, you're right. Think of it as free pre-delay, or record the reverb to a track and shift it ahead in time if you're really picky. **Cool bonus:** Cubase SX3 makes using external hardware pretty painless (Figure 5), and compensates for any latency (although this is a manual, not automatic, process).

7. SEND "STEMS" TO A MIXER

A digital mixer remains an important part of my setup, not only because it's useful while tracking, but because I really like the EQ in my particular model (Panasonic DA7). If I need more high-quality EQ than the computer can handle, I'll send out individual tracks or premixes to my mixer via the Creamware interface's light pipe. Then it's time to use the mixer EQ. Either I'll return the mixer out back to the host, or with some projects, do my mixing in the DA7 itself, using that old school "move the faders" technique. **Cool bonus:** The outboard mixer's aux bus is an ideal place for putting a reverb. And, you get to mix with real faders.

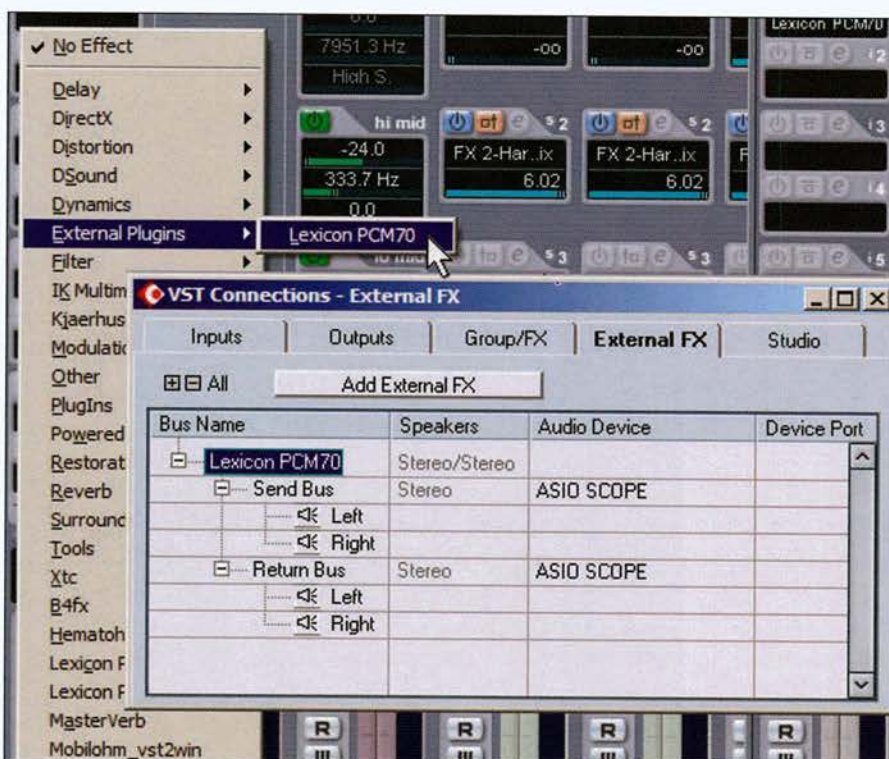
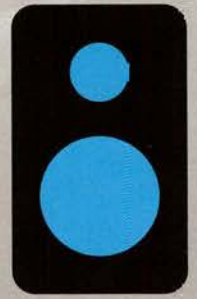


Fig. 5: With Cubase SX3, you can dedicate some of your audio interface's I/O to external effects, and they show up under a track's insert — just like any other plug-in.

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MIXING IN A PLUG-IN WORLD

8. FREEZE YOUR TRACKS

Soft synths, especially ones that sound good, suck power like there's no tomorrow. "Mastering quality" signal processing plug-ins also like to drink at the CPU power bar. So, use your host's "freeze" function to convert tracks that use realtime plug-ins into hard disk tracks, which are far more efficient. For more details on the freeze process, as well as how to freeze tracks with hosts that don't have a dedicated freeze function, see last month's article "Meet Mr. Freeze."

9. USE SNAPSHOT AUTOMATION

Plug-ins aren't the only things that stress out your CPU: Complex, realtime automation also chews down on CPU cycles. So, simplifying your automation curves will leave more power available for the CPU to run plugs. Your host may have a "thinning" algorithm; use it, as you

generally don't need that much automation data to do the job (particularly if you did realtime automation with fader moves). But the ultimate CPU saver is using snapshot automation (which in many cases is all you really need anyway) instead of continuous curves.

10. CHECK YOUR PLUG-IN'S AUTOMATION PROTOCOL

Our last tip doesn't relate to saving CPU power, but to preserving sound quality. Many plug-ins and soft synths offer multiple ways to automate: By recording the motion of on-screen controls, driving with MIDI controller data, using host automation (like VST or DXi), and so on. However, not all automation methods are created equal. For example, moving panel controls may give higher internal resolution than driving via MIDI, which may be quantized into 128 steps. Bottom

line: Using the right automation will make for smoother filter sweeps, less stair-stepping, and other benefits.

Okay . . . there are your Top Ten tips, but here's a bonus one: Any time you go to insert a plug-in, ask yourself if you really *need* to use it. A lot of people start their mix a track at a time, and optimize the sound for that track by adding EQ, reverb, and whatever else. Then they bring in other tracks and optimize those. Eventually, you end up with an over-processed, overdone sound that's just plain annoying.

Instead, try setting up a mix first with your instruments more or less "naked." Only then, start analyzing where any problems might be, then go about fixing them. Often, tracks that may not sound that great in isolation mesh well when played together. EQ

Review

by Craig Anderton

Price: A\$518 (est)

Contact: Matrox,
www.matrox.com/mga

Strengths:

- Supports three analog monitors, two digital monitors, or two monitors + TV out
- Fanless operation
- AGP 8X card

Limitations:

- Max 1280x1024 resolution per monitor in TripleHead mode
- Poor 3D performance

Matrox Millennium P650+ TripleHead Upgrade

If Star Trek was about music software, a typical conversation might go like this:
"Scotty, I need more power!"
"But I can't give ya any more power, Captain!"
(Pause) "Well then, can you at least give me a *much bigger monitor?*"
I use a Matrox Millennium G450 DualHead graphics card, but sometimes a *third* monitor

would be nice . . . especially when a bunch of soft synths are open. The Matrox Millennium P750 (\$235, for Win2000/XP/NT4 or Linux) with cooling fan can drive three monitors, but studios will likely prefer the DualHead Millennium P650 with TripleHead upgrade (\$259 total), as it uses a large heatsink instead of a fan. 3D game performance for either is uninspiring, but they deliver the goods for 2D DAW apps.

There are two DVI (digital) outs with independent refresh, color depth, and up to 1600x1200 resolution. Cable adapters allow using up to three analog CRTs/LCDs. However, max resolution with three monitors is 1280x1024 per monitor, which also must run at

the same refresh rate and color depth. The only time this might be an issue is if you're mixing LCD flat panels (which often run at 60Hz) with a CRT, as the CRT must then run at 60Hz as well.

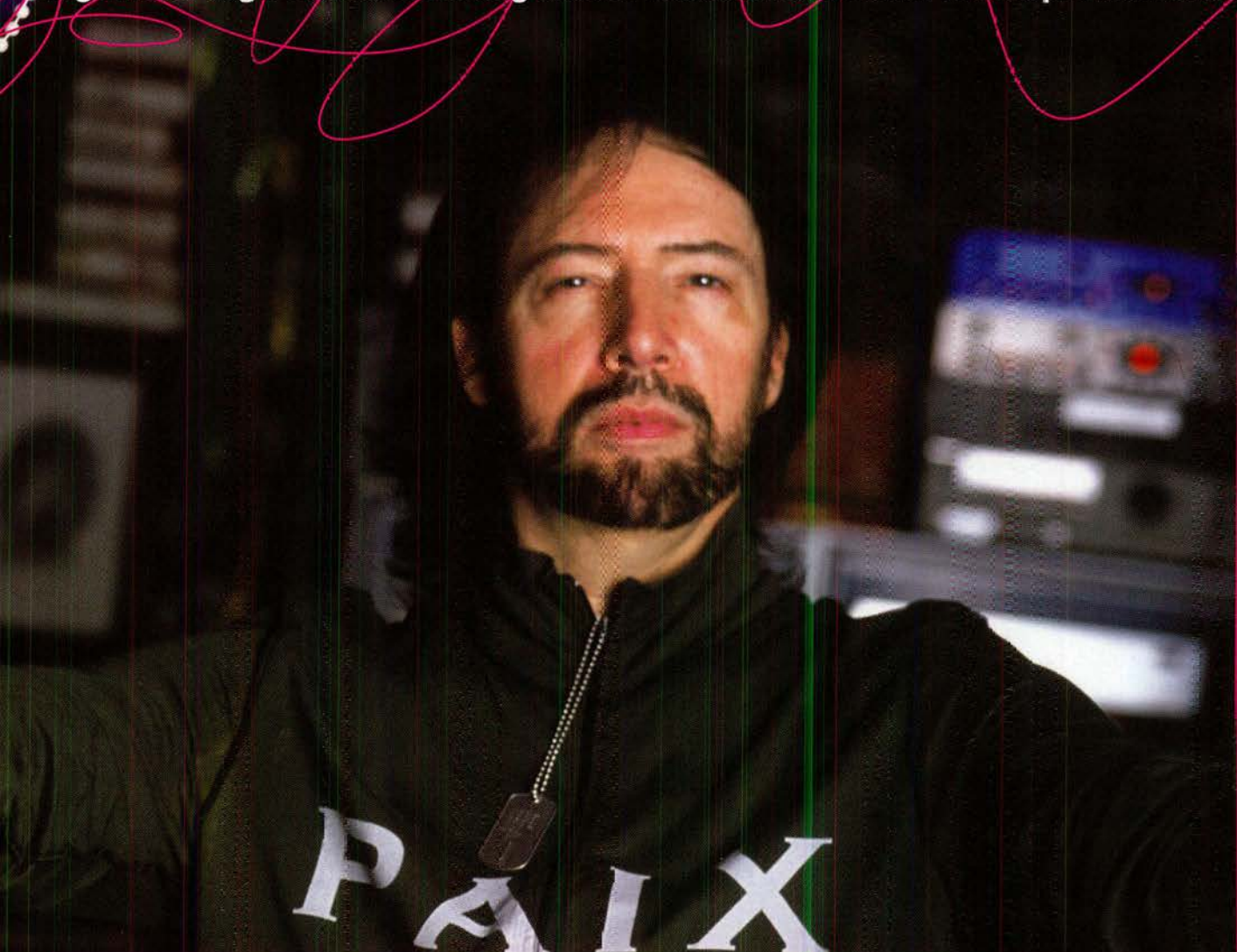
You can also run one DVI as the center monitor with two analogs, but the same three-monitor limits still hold. Or, run two standard RGB monitors up to 1920x1440, one display up to 2048x1536, or two analog monitors (or one digital/one analog) along with S-video or composite TV — excellent for checking audio-for-video edits over a real-world delivery medium.

When you're looking for the "Desktop of the Gods," a triple-monitor setup based on the Millennium P650+ upgrade is relatively inexpensive, and has enough performance prowess to handle anything your DAW can throw at it. Good stuff. EQ



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Well people in hell want ice water.

But for the rest of us there's four-time Grammy-nominated mixing and producing icon Jack Joseph Puig and his continuing insistence that *getting* The Ultimate Mix isn't about making the snare drum, guitar, or bass sound stellar. Nope. Getting a great mix, he insists, is more about understanding the very fabric of what the song is about—what the person is trying to make you feel. And that's centered on sonically communicating the content of the lyrics across the entire mix by making the vocal—the voice—sound “engaging, honest, real, believable and credible.”

No matter whether it's a hair band, or it's ska, pop, punk, country or trance ambient, Puig insists that, “You really have to empower the song to make the vocals great.”

And having mixed award-winning and platinum-selling tracks for vocally intense artists like John Mayer, Green Day, The Goo Goo Dolls, No Doubt, 311, Ra Riot and others, Puig definitely knows how to finesse the mojo when it comes to mixing vocal tracks. You see when it comes to getting the ultimate vocal mix, Puig none-too-slowly cites four essential components: the way the voice is equalized, the way it's compressed, how the perspective (reverbs and delays) is deployed, and how the overall balance of these sonic elements is achieved.

Believe it you better, grasshopper.

BY STEPH JORGL

Photo by Gabriella Marks

PUIG.

THE FOUR SISTERS: HANDMAIDENS OF HIT-MAKING WONDER

Once when Puig mixed a record for No Doubt, Gwen Stefani came to him and asked him how they could create a vocal sound she heard in her head. "I sat and I listened to her talk about it and I imagined how I would get it," says Puig. "And it ended up being that I got it using a Joe Meek compressor I had, which has a function called 'Enhance' that creates this very, very hyper top end that — for the most part — is pretty useless, but lots of times can also be great. It's almost an apex built into a compressor.

"When she went through the description about the vocal sound, I thought, 'Maybe if I take the Joe Meek and actually use it wrong and way enhance the track in a way that you'd never want to use, then add it in as a side chain to the voice, then maybe I'll get this top end presence thing she hears in her head,'" he says. "So then I did it, and it was *great*. Since then, it's lived on my console, and on my console it says, 'The Gwen Sound.'"

Moreover, to put a finer point on it...

Equalization and Compression

The most important part of equalizing vocals, to Puig, is getting at the mid-range detail. "The mid-range is where the attitude and the soul is," he says. "It's not at 15K and it's not at 20Hz. In that mid-range area, you'll find the very core of a person's voice. And when you EQ, you really want to go for finding the passion and the attitude in their voice the mood — that's what you want to get."

Compression is also important and sometimes Puig, using two or three compressors on a track, blends the best of both worlds by combining one that's really fast with one that's really slow. "Compression is important for making sure that you get the nuances of what the voice is doing," says Puig. "Sometimes there are little nuances that, if you get them up in the right perspective, you can *feel* what the person is emoting. You know, the feeling that you get when you're standing right next to them? *That's* what compression is supposed to do for you."

Balance and Perspective

Another part of the mix puzzle, for Puig, is making sure that the track and the perspective are well met. "The perspective has to match the song," he says. And then there's

the balance of all of these aspects — equalization, compression, perspective that needs to bring together the mix.

"There's balance between equalization, there's balance between left or right perspective, or panning, and there's balance between the perspective of the depth generally created by delays and reverbs and modulation," explains Puig. "But balance is extremely complicated because you have to factor all of those different elements in when you're thinking about the balance.

"So maybe you can have a mix where the snare drum is too bright and you'll think the mix is really bright when in actual fact the mix is really dull," he says. "But if you took the top end off of the snare drum, all of a sudden you'd realize that the other elements are not that bright. So that's why you need to balance the frequencies *and* the levels."

THE GEAR GRABBAG

Gear, gear everywhere and not a break to think. No prob. Puig's studio at Ocean way is not only a cinematic collection of antiques and other collectibles, back-lit and positioned to emulate the movie-set like atmosphere of another world, but also conveniently offers an immense collection of both analog and digital gear...all slaved to their master's dictates.

Different Trix for Different Tones

Regularly working with all kinds of equalizers and compressors from different manufacturers, from SSL to Neve, to Trident, to EMI, to API, to Helios, Puig says, "I like using them all because they *all* do certain things really great."

Puig prefers using Neves for his lead vocal track mixes, while he uses Avalons for the background vocals. But when he gets a vocal track that's soft, he'll quickly turn to the SSL. "With the SSL, I can really go in and get that mid-range detail," says Puig. "When vocals are too soft sometimes it's tough to make them sound convincing. But with the SSL, I can *make* them convincing."

Of all of his mixes, Puig is particularly proud of the sound that he got out of John Mayer's voice on the "Daughters" track. "I love the Neve for recording vocals," he says. "One of my practices is to have the Pro Tools track automatically feed straight through a 1073. From there, it goes to my console. That way, I can pick up the sound of the Neve initially, before it even gets to the console.

"On that track, I also used the LA3 combined with the Fairchild," he adds. "The LA3 and the Fairchild's ballistics together create that smooth vocal sound that John Mayer has on 'Daughters.' I'm really happy about how that came out because I can *hear him* I can hear his heart and his *soul*."

THE WHO'S

Green Day

311

Ash

Fiona Apple

Guided By Voices

Hole

John Mayer

No Doubt

Rancid

Robbie Williams

Rolling Stones

Stone Temple Pilots

Tricky

Vanessa Carlton

Vines

Weezer

And, all the Crows:

Sheryl, Black,

and Counting

Pro Tools and Waves In The Mix

Puig also deploys several powerful software compressors and EQs within his mixes. "I really enjoy mixing with Pro Tools HD because of the amount of creative choices that exist — being able to change EQ at a given moment, frequency level, reverb, and so on, has allowed me to do many things I've always wanted to do effortlessly," attests Puig. "I love Pro Tools automation, and I'm excited about seeing where they go with the digital consoles in the future."

"I absolutely love analog equipment like everyone else on the planet," he says. "But the digital compressors are amazing. I love the Renaissance package of EQs from Waves. And the Waves De-esser might be one of the best de-essers that I've ever used."

Multiple Mix Monitors and Subwoofing It

When it comes to monitoring his mixes Puig relies on several types of monitors. "I use NS-10s, some Genelecs and the mains here at Ocean Way," he says. "Then I've got two different ghetto blasters, the car, some

Tannoy in the other rooms, and a couple of JBLs that I like to listen through.

"A lot of people get fooled by the listening environment that they're in," says Puig. "They think they have X... but they truly have Z. You really need to put yourself in a listening environment that you can relate to. Not one that fits your style, but one that fits your ears. That's important."

Problems in a mixing environment can also result from excesses or deficits in room reflection, or in the power-level of the monitors you're using for your mix. Further, massive-powered subwoofer systems can also distort your perception on what your final mixes will really sound like.

"To use too much of a subwoofer can be dangerous, because it can cause juicy stereo — a three-point perspective that really isn't real," says Puig. "And it can give you a false sense of how big your record

is or what the bottom end is like. So a subwoofer should be used very carefully."

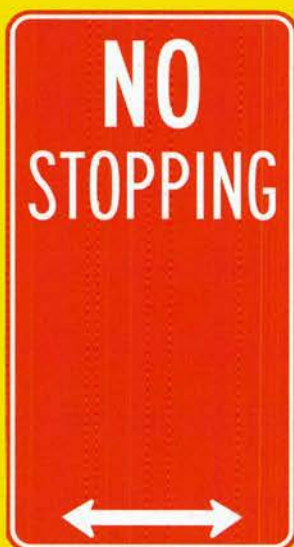
ULTIMATE MIX TIP-MANIA

Puig essentials for getting the most out of your mix? Outside of two air-cooled Black & Deckers? Try the Big Three: finding your own mixing style, creating cool systems and figuring out what's the best level to mix at. Got it? Not yet you don't...

Learning to Mix

If you're just getting into mixing or producing, Puig suggests that you pick out a couple of people that you like, listen to their work and then set out to emulate it. "As a kid growing up, you emulate your parents," says Puig. "Then a therapist comes along and helps you undo the things that weren't good and helps you see the things that were great. And I think that's the kind of state you have to go through when you're learning to mix. You have to listen to those records and go, 'How did they do that?' and 'I'm going to try to copy that.' And then gradually you start to do your own thing and you end up with your own style."

Puig also suggests that you decide what area you want to work in — whether you're going to be an artist, mixer, producer or engineer and then go for it. "That's very important," he says. "And so is being honest with yourself about what you're good at and what works for you."



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Tuesday
June 7th

9pm
Wednesday
June 8th

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PUIG.

Creating Your Own System

Another thing Puig recommends for a better mixing environment is to create systems. "For me, my drums always start at 33 and will go all the way as high as 46, my voice always comes down 32, my bass always comes down 25 and 26, my guitars always come down 30 and 31, and my backing voices always come down 17 and 18.

"The reason why is that when you have a system like that, the technical part of your brain isn't engaged, only the creative side is because your hands automatically go to those places," explains Puig. "So you stay in that euphoric creative place, which also starts to become something instinctual. You know where you're going and you're listening, you're moving and creating as opposed to stopping and going, 'What channel is the bass on?'

"So the more you let go of the technical acrobatics, the more you can allow your brain to function creatively," he adds. He also recommends creating similar systems for your reverb sends, delay sends and other effects returns.

Keeping It On the DL

When it comes to monitoring mixes, The Puig advises: listening at lower volume levels is a much better strategy than cranking it up. "I find it very useful to listen at a very low level for the very extreme sensitive balancing," he says. "At a very low level you can hear pitch, time, feel and balance much better than you can at a very loud level even at 96spl.

"The louder you turn it up, the more the other factors begin to become involved—the power amp, the speakers, the acoustics of the room—and all of a sudden there are all these things working that are not real," says Puig. "If you don't have it pumping and sounding great at a low level, you probably don't have it." **EQ**

So you stay in that euphoric creative place, which also starts to become something ginstinctual.

Review

by Craig Anderton

Alienware MJ-12m 5500 Laptop

Price: Configuration-dependent, starts at mid-\$4K (est)

Contact: Alienware, www.alienware.com

Strengths:

- Very powerful
- Non-proprietary parts
- Audio/video optimized
- Great industrial design
- High-resolution, widescreen display

Limitations:

- Limited battery life
- Some fan noise



Generally, we don't review computers. But an exceptional computer rates an exception.

You don't buy an Alienware laptop; you visit their web site, configure it from various options (at various prices), and they build it. Want max hard disk track count? Spec a 7200 RPM drive instead of 5400 RPM. Just be aware you're getting a "desktop replacement" machine, which trades off battery life, size, and

cost in return for no-apologies raw power.

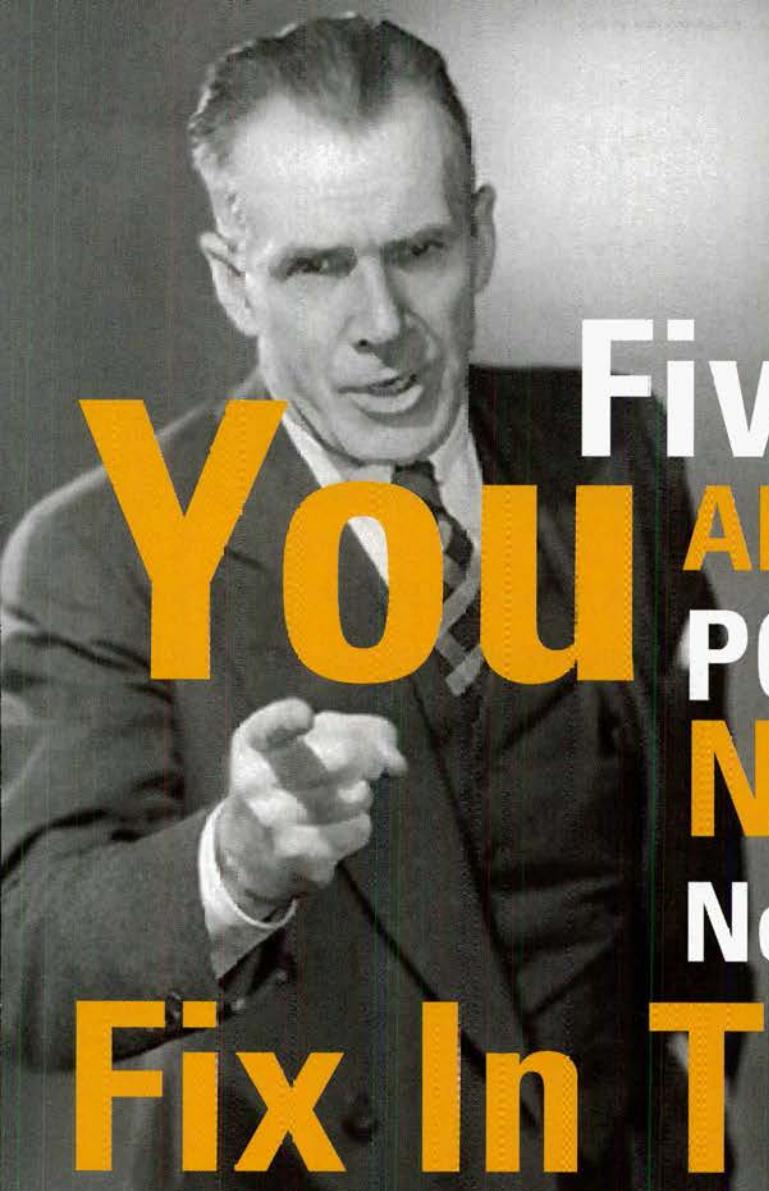
Every aspect of this computer overachieves. The wide-screen TFT display handles 1680x1050 pixels (as

close as you'll get to a dual-monitor laptop display) and has a wide viewing angle. The onboard sound is decent, thanks to four speakers: two at the screen's base, two in the case front. The Intel 3.2GHz Pentium 4 Hyperthreading processor is not a lite version for portable use, and you can support it with up to two gigs of memory. The review model shipped with a DVD-RW drive and nVidia GeForce FX Go5700 graphics accelerator, which delivered stunning graphics. Of course, there are USB 2 and FireWire ports, but there's also S/PDIF out, a built-in mic at the top of the screen (away from noise sources), and an IR remote for controlling several aspects of the

computer. Software-wise, you get a system restoration CD, Windows XP Pro, DVD playback programs, and an OEM version of Nero.

The chassis doesn't flex, the screen feels solid, and thermally, the unit runs surprisingly cool (the tradeoff is some fan noise). I wasn't about to "drop test" a \$3,000+ computer I don't own, but I feel it would survive better than most. I like the keyboard feel, although I'm not a fan of Synaptics touch pads — happily, a mouse comes with the package.

Sure, this price range offers many choices for powerful laptops. But for audio and video editing, Alienware's audio/video powerhouse is, well, out of this world. **EQ**



YOU Absolutely, POSITIVELY, No Way Will Not Be Able To Fix In The Mix

Oh, they'll tell you it can, you'll want to believe that it can, and suffering from Superman complexes some people may think it can...if only they could.

BUT THEY CAN'T. FIX IT IN THE MIX, THAT IS.

Don't believe us? Well, maybe you'll believe... *ta-da:*

Tal Herzberg. He lives in, oooo, LA. He's produced, programmed, or engineered damned near everybody from the Black Eyed Peas to Christina Aguilera. He's gotten four Grammy nominations for stuff and is nominated this year for even more stuff. **So, yes, he might indeed know.**

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supplied thanks
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Productions

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Adelaide 5 DAY COURSE hosted by Dean
Lewis. Mon 11-Fri 15 July. 9.30- 5pm.

LIVE SOUND BASICS

Nightschool. 5 weeks, Mon/Wed 6.30-
9.30pm. Starts 18 July, ends 17 August.



MELBOURNE AFFILIATES:

Tiny and Robyn
Good, ShowTech
Australia,
Braeside (near
Mordialloc)

LIGHTING BASICS

• Includes Stage OH&S course on Mon 27 June
Melbourne 5 DAY COURSE hosted by Rohan
Thornton. Mon 27 June - Fri 1 July. 9.30 - 5pm.

LIVE SOUND BASICS

Melbourne 5 DAY COURSE hosted by Duncan Fry.
Mon 4 - Fri 8 July. 9.30 - 5pm daily.



BRISBANE AFFILIATE:

Steve Beck.
Facilities sup-
plied thanks to
Brisbane Sound

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Brisbane 5 DAY COURSE
hosted by Steve Beck.
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July 9.30 - 5pm.

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Tal's Top 5

All types of audio productions end with a summing procedure, a mixing stage, an audio signals bottleneck, where all streams of audible events, spaced and stacked on a timeline, are being conditioned with final relative presence (volume), spectral location (pan), dynamic behavior (compression, automation), overall sonic character (EQ), and final "coloring" (effects). The mixing stage is THE moment of truth, where all creative and technical production elements are finally glued together, turning our work into a final, standalone, reproducible asset, a MASTER.

But in our never ending quest for the perfect master there are many creative and technical traps, which sometimes almost anyone, even the best, can fall into. Although modern day DAW's and additional hardware and software tools can help us salvage almost any sonic disaster, there are still some elements that are extremely hard to fix-in-the-mix, if at all. Like....



Fix In The Mix

Every single electronic component that's involved in sound generating, capturing, and processing, introduces a certain amount of noise to the final signal (hiss, hum). Dozens of such components can be found inside any recording chain, and the overall effect is cumulative. The audible relationship between the amount of signal relative to the amount of noise that's being captured is called signal-to-noise Ratio. The rule of thumb is to always have much more signal captured than noise. Having too little signal in this cocktail will result in significantly louder noise level when turning the signal up in the final mix (adding gain). If there is close to the same amount of signal and noise in the source,

turning the source twice as loud will also turn the noise twice as loud, and so forth.

Analog tape produces a lot of noise on top of the noise already introduced by the recording chain, therefore one has to be constantly aware of recording levels to overcome this issue. Digital audio does not suffer from this issue as much, but involves another factor – the sampling level. The "hotter" a signal is being sampled the greater the binary resolution it generates, and ends up sounding better as a digital source. Always stop short of clipping the Analog-to-Digital converters, due to the nasty nature of digital distortion (unless desired as an effect).

Regardless of analog or digital capturing, try maintaining the lowest possible amount of noise in your recordings, mainly because the process that's involved with trying to get rid of noise in the mix ends up hurting the recording's quality quite a bit, especially when dealing

Distortion



Photos © Bettmann/CORBIS

Both mic and DI signals have to be electronically amplified prior to being sent to a recorder. Overloading an amplifier's electronic circuit will cause it to generate squared envelope signals, which usually sound unpleasantly "fuzzy" or "fried". Although certain styles of music and types of sound effects can take advantage of this phenomenon, distortion is for the

most part a non-desirable, often non cure-able problem, one that's hard to ignore and hard to hide. More importantly, it can always be added later on, so while recording, try being as observant as possible to this issue, and adjust the pre amp's gain controls accordingly. An occasional over-saturated passage might not be bad, especially if it helps to emphasize a strong dynamic moment, but always reserve the option of having both clean and dirty signals. And remember that long, distorted passages eventually end up causing ear fatigue that turns any listening experience to an unpleasant one.

Noise



with vocal tracks, quiet acoustic instruments, and other sources. There are several software and hardware tools available to deal with noisy sources (Digidesign DINR, Waves X-Noise, Cedar products), but the results can vary dramatically, based on the severity of the initial problem. The same conditions apply when having to deal with sources recorded with loud pops and clicks, created by bad drop-ins (punches), digital clocking problems, or unclear edits (no cross fades).

Mixing is an act of exposure, a sort of sonic and musical voyeurism. It shouldn't be an act of hiding stuff because it sucks. Because if it sucks, it shouldn't have been recorded to begin with. Because of the track count limitations, pre-blending certain elements prior to the mixing stage is a normal thing to do. If 20 vocal tracks create a background stack, or three pairs of drum room microphones create the ambience sound, the session may become too heavy



to play and monitor. It is then possible to take a pause in the production process, create premixes of these elements, and sum them down to a stereo mix, committing to a specific printed blend. While doing this is fine, losing the original individual

Premixes



components, or not including those components in further editing that takes place, will result in an inability to re-blend those elements during the mixing stage. Adding EQ and compression during the mix always changes the inner balances of any committed pre blend, and

not having the source tracks for re-blending (now taking into account the current stage the production and mix are at) can cause a major problem. Try to always keep and include pre-blended source tracks as an integral part of the session, and make them available for the mixer to re-blend upon need.

While out-of-tune monophonic signals like vocals, trumpet, and bass can be successfully re-pitched (using software tools like Antares Auto Tune), out-of-tune polyphonic signals like guitar, piano, and orchestra, cannot be re-pitched. There is no known cure for this illness, and it will irritate almost any listener. Keep a tuner ▶



Tuning

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LOGIES

www.tdc.com.au

by Mitch Gallagher

BLUE Robbie

Take a break from black box mania with this new BLUE preamp

Type: Class-A discrete tube preamp
Price: A \$2,589 (est)
Contact: www.bluemic.com

Controls: Gain, Polarity, Pad, Mic/Inst, Phantom

Inputs: 1/4" instrument (front), XLR mic (rear)

Outputs: XLR line

Minimum gain: 8dB

Maximum gain: 68dB

Frequency response: 10Hz to 100kHz, ± 2 dB

Noise: -131 dB (60dB gain, 10Hz to 30kHz, 50 ohm source)

Mic input impedance: 5k-ohm (20Hz to 20kHz)

Instrument input impedance: 1M-ohm

Why is so much studio gear constrained to the black box motif? We're creative people, yes? Pursuing a creative endeavor, right? You'd think we'd want our gear to reflect our personalities more, looks-wise. Yes, yes, I understand that black boxes seem "professional," and I'll also admit the obvious: they stack nicely in a rack. But it's still a relief to see something come along now and then that breaks the black box mold.

BLUE has never been a company to follow the "me-too" appearance policy to which many gear manufacturers adhere. Their mics look different, so it's only natural that their other hardware looks different, too. And Robbie, the company's discrete class-A tube preamp, is one cool looking customer — no one will mistake this for an average, everyday preamp.



Robbie's glowing ECC88 tube protrudes into a bay window on the left of the front panel. To the right is a large backlit gain knob. The only other thing on the front panel is a 1/4" instrument level input jack.

Everything else lives around back, which is just as spartan as the front panel. There are five switches: polarity reverse, 20dB pad, mic/inst input selector, phantom power on/off, and power.

If you choose to rackmount a Robbie or two using the optional adapter, then the back-panel location of those controls will likely be a problem. An XLR mic in, XLR line out, and locking AC jack for the external power supply round things out. When you plug Robbie in, the tube enters "standby" mode, sort of like a guitar amp, so it's warm and ready to go.

IN USE

There's one word that can be used to describe using Robbie: simple. Plug it in, turn up the gain. Maybe set a switch or two. That's it. There are no metering nor even an overload light on Robbie — you'll just have to use your ears to detect distortion, or watch the levels in your recorder. Given that the preamp is spec'd with 34dB of headroom, you'll probably overload the next stage in your recording chain before you do Robbie.

BLUE aimed Robbie at pure, audiophile quality, using no integrated circuits. There's discrete components from input to output, with ultra low-noise metal film resistors, polystyrene caps, electronically balanced input and output stages, and, of course, the ECC88 twin-triode tube gain stage.

The result of the use of those discrete components is a round, fat sound without hype on the top or bottom. On vocals, Robbie fills in the bottom nicely. The midrange is full but not overly present. Tracks recorded through Robbie tend to sit right where they should in the mix. I found no need to EQ the mids to tame harshness.


The top end is smooth and detailed, without being hard or

"spitty." On one male vocal passage, Robbie smoothed out the excess sibilance perfectly. All the detail and clarity was there, but the "s's" weren't over-emphasized.

On acoustic guitar, both nylon and steel-string, I was thrilled with Robbie's top end — it was open and clear, very natural sounding. You could easily hear fingers on strings and fret/string contact, and harmonics rang clear and true. I feared Robbie's low end might make acoustic guitars sound boomy or muddy, but this wasn't an issue. The lows were full, but stayed tight and "real."

MORE THAN JUST A PRETTY FACE

I found Robbie to be an excellent complement to solid-state designs like the Focusrite ISA series, as well as to Neve/Neve-clone designs. It has a clean, unique sound that blends well, sits well in a mix, and doesn't strain to achieve clarity and presence. At \$1,300 per channel retail, it sits in the mid-price range for tube preamps, but it performs like it costs much more.

Yes, Robbie looks cool. But it also delivers excellent audio quality. An outstanding combination. 

Strengths:

- Couldn't be simpler
- Cool tabletop unit
- Audiophile design
- Fat bottom-end
- Round midrange
- Smooth extended top-end

Limitations:

- No metering
- Rear-panel location of most controls problematic when rackmounting

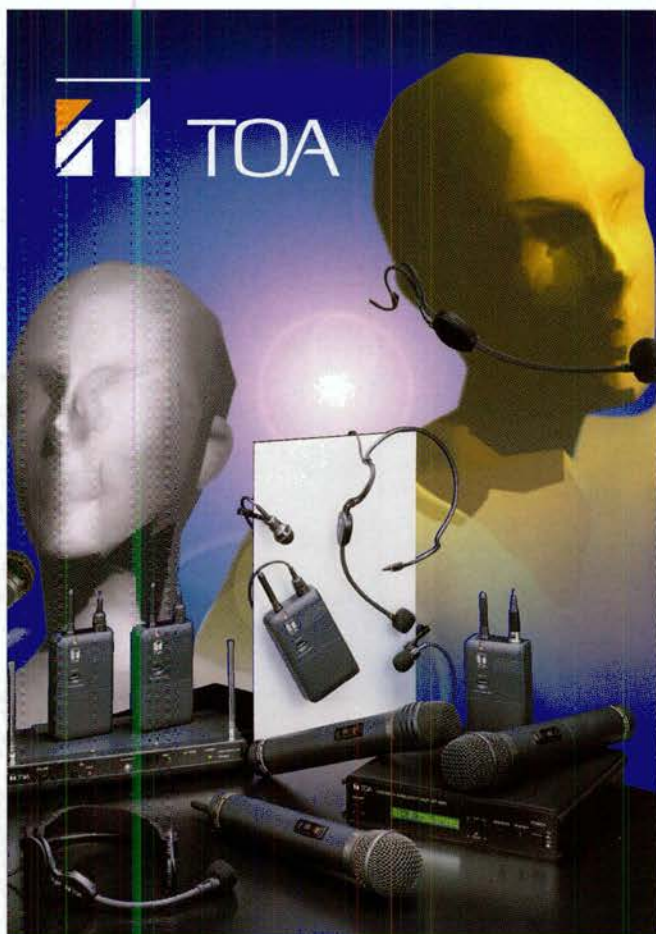
Fix In The Mix

► **From 71...** handy all the time when recording guitars, make sure the piano has been tuned prior to the session, and make sure the Concert Meister visits the control room a few times during the session to recheck the tonal center of the recording. I can take a donkey and make it sound like Pavarotti, but when the guitar is out of tune or the piano is out of tune there is no cure for it.



Arrangement & Performance

A good musical arrangement usually mixes itself, while a bad one can result in days of non-successful fader moves and knob tweaking. Also, while it's possible nowadays to fix almost any pitch or timing related musical performance problem, science has yet to develop a tool that can deal with lack of vibe, groove, inspiration, and soul, manifested as artistic and production values. Of all the five points this is my most important one. This is my message to producers out there: Don't expect your productions to sound good if they're not arranged and performed with passion. **EQ**



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by Craig Anderton

Type: Audio processing plug-in bundle

Price: Power Suite (all plug-ins) A\$999.90 (est); Power Couple (TrackPlug and MasterVerb bundle) A\$499.90 (est); MultiDynamics, TrackPlug, MasterVerb, and FinalPlug, A\$299.90 (est) each; WaveSurround A\$199.90

Contact: www.wavearts.com

Platforms/formats: Mac OS X 10.2 or later (AU, MAS, VST, RTAS), OS 9.1 or later (MAS, VST, RTAS), Windows 2000/XP or later (DX, VST, RTAS).

Copy protection: Serial number provided with program; program generates machine ID. Send both to Wave Arts and receive unlock code.

Demo: 30-day unlimited functionality.

Manual: 68-page paper manual with boxed version; PDF with download.

Sample rates: 192kHz (FinalPlug), 96kHz (all others)

Bit resolution: 32-bit internal processing, 64-bit processing for EQ (in TrackPlug and MultiDynamics)

Wave Arts Power Suite

It's a sweet suite, indeed

“Waves.” Okay, now that’s out of the way . . .

Seriously, in any industry, few companies have been able to carve out the kind of niche that Waves has. They were one of the first, if not the first, third-party plug-in companies, and few would disagree that they do awesome work.

Yes, this is an odd way to start a review about a non-Waves product. But bear with me. Waves’ plug-ins are expensive, so recording engineers on a tight budget have been searching for a Waves-style experience, but at an

version of Power Suite and use it for 30 days. Try it with some tracks, and find out for yourself. What I will do, though, is tell you why I think the Wave Arts plug-ins are on the short list of plug-in excellence . . . specifically, *affordable* plug-in excellence.

Power Suite is a bundle of several Wave Arts products, but each one is available separately. So, we’ll cover each plug-in, then consider the suite as a whole — is it worth getting the package, or will individual plugs do it for you?

GETTING STARTED

You can download the Suite (it’s under 10MB), or buy a boxed version. As one of the few people who actually reads End User License Agreements, I found this little gem: You can install the program on three computers, as long as you’re the only user. Hallelujah! I can put the plugs on my Mac and Windows desktop machines, and my notebook, without having to beg for additional registrations. Cool.

Okay, let’s look at the plugs.

MASTERVERB

I first reviewed MasterVerb back in January 2002, and said “This reverb offers a lush, enveloping sound — perfect for adding reverb to program material. But it does a lot more, and works well on individual tracks. Unlike some reverbs, it seems particularly well suited to delicate instruments such as

acoustic guitar because of the sweet decay and warm (not muffled — warm!) sound quality. Despite being a single-algorithm reverb, it’s flexible enough to provide a variety of very useful effects. The fact that it requires very little CPU power is the icing on the cake.” Those opinions remain valid.

I did complain about the lack of a diffusion control and a bit of “flutter” on the early reflections. Well, now there’s a diffusion control, and the early reflections sound smoother. I have several reverbs, but I must say I reach for this one often. It’s still a single-algorithm reverb, but being raised on acoustic reverb, that doesn’t bother me — particularly because the MasterVerb controls can wring out a variety of sounds.

Compared to other plugs I have, only the Waves TrueVerb has a slightly more consistent, smooth tail. However, the reason I know this was because in context, it was hard to tell the two apart, so I ended up soloing each reverb with a single percussion track. Bottom line: MasterVerb is a fine, CPU-friendly, realistic reverb.

TRACKPLUG

This is a 10-band EQ with compressor and gate. I got turned on to it before Cakewalk had folded the Sonitus:fx EQs into Sonar, and found — much to my surprise — that I could load a ton of these things without distressing the CPU.



NOTE MASTERVERB'S 3-D DISPLAY, WHICH PROVIDES A VISUAL REPRESENTATION OF TIME AND FREQUENCY RESPONSE.

affordable price. Does Wave Arts deliver that Holy Grail?

Well, I'm not going to tell you, and here's why: You can download a fully functional

Each stage of EQ can have any one of seven responses (including parametric), and the EQ as a whole can go pre- or post-compressor. Controls are standard, although a useful "band" control disables a band without deleting it — good for judging how different bands affect the sound.

The compressor is also straightforward, but very complete with parameters for knee, makeup gain on/off, attack, release, peak or RMS detection, and lookahead on/off and time (1, 2, or 5 ms). The superb metering keeps you apprised of variants in input signal power, the amount of compression and gating being applied, and the output peak and average levels.

As most hosts come with their own EQ and dynamics plug-ins, this would likely not be your first choice. But few offer 10 bands of EQ, and the sound quality belies the low CPU drain. TrackPlug's most striking characteristic is that you don't hear it

working; you have to *really* push the parameters to get it to sound artificial.

MULTIDYNAMICS

A good multiband dynamics processor is a joy. The biggest problem is the user interface: Adjusting multiple bands of compression can be a pain in the butt, especially as you're adjusting both EQ and dynamics to get the desired sound. Wave Arts hasn't really solved the adjustment problem (although it's equally easy to make a parameter change to all six bands as it is to one band), but they've made *huge* strides in letting you see the results of those adjustments.

The coolest aspect is that the display gives equal weight to displaying what's happening to the frequency response. The left pane shows the current frequency response (the green line) and threshold (the orange line); the right side shows what's

happening with the dynamics.

The way EQ is handled is a little hard to explain, but the basic idea is that you can set not only a particular frequency range for each band, but also determine how much gain will be applied when the signal is above the threshold, and how much when it's below. This makes it easy to compress some bands while expanding others, but also makes it easier to see how compression will affect the frequency response.

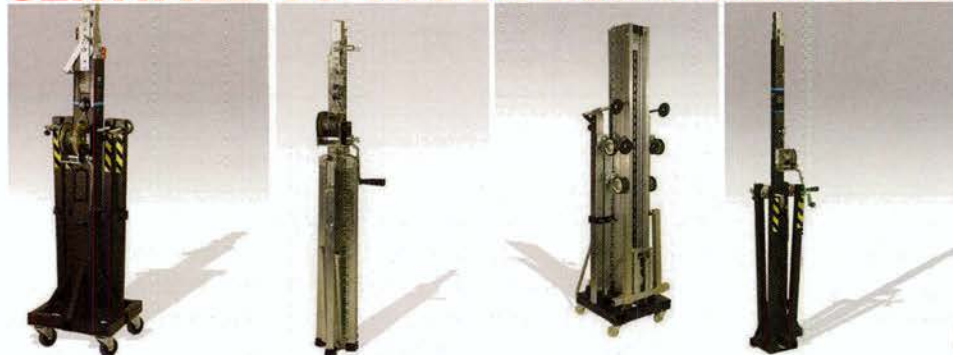
There's more — the crossover between bands can be set to 18 or 30dB/octave, and the transitions sound very seamless. Overall, this plug-in is a home run; run through the presets, and you'll hear everything from hard sounds without harshness to gentle tone-shaping with a dynamics lift. This is one hot plug.

FINALPLUG

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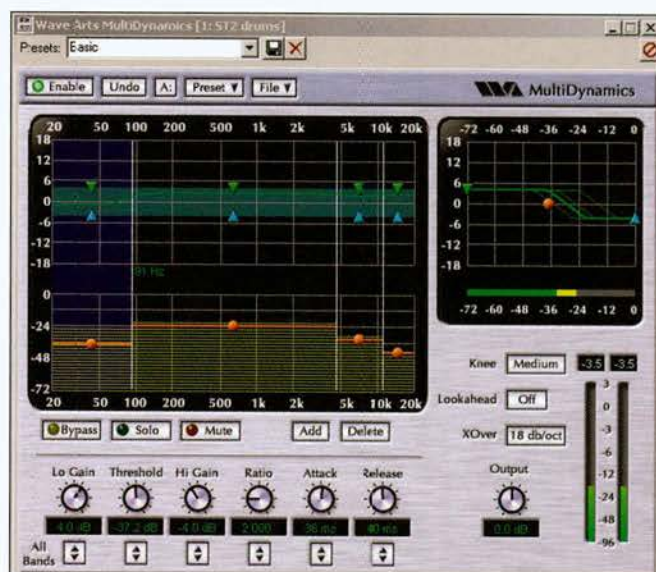
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YOU CAN THINK OF TRACKPLUG AS A VIRTUAL CHANNEL STRIP WITH EQ AND DYNAMICS.

to-kill-all-traces-of-dynamics-to-conform-to-current-pop-music-standards" type of device; it also includes dithering and noise shaping. So, I immediately A/B'd it with the Waves L1 Ultramaximizer+ (okay, so I'm not totally up to date), which is what I generally use for this type of application.

There was a definite difference between the two. Given equal threshold and release settings (with dynamic equivalency checked by listening and observing meters), FinalPlug sounded thicker, fatter, and "smeared" the signal more. The L1 preserved a sense of dynamics better, and also sounded a bit brighter; however, the limiting action seemed a bit more ragged. These differences were fairly minor with moderate amounts of limiting, but showed up more at settings that frankly, I wouldn't use anyway.

For most material, I'd give the L1 a slight edge — because I'm not a huge fan of output limiting, so I'd rather have a bit better dynamic preservation. However, I can guarantee some people would A/B the two and choose FinalPlug because of its fatter, less clinical sound.

I guess if I had to summarize, I'd say the L1 is the Beatles, and FinalPlug is the Stones. Another example: I'd use FinalPlug on house music, but the L1 on drum 'n' bass.

WAVESURROUND

This plug-in gives stereo material increased sound localization. Think of it as panning on steroids: Instead of just blasting sounds between right or left front speakers, sounds can seem to come from the sides, or even behind you. It does this with sophisticated filtering and crosstalk cancellation; there's also reverb if you want to tart things up a little further.

I haven't worked much with 3-D audio spatialization, so I went through the presets . . . and was just about ready to write it off. The sound was gimmicky, and I couldn't imagine subjecting program material to this kind of effect. Wrong! When I started really digging into it, and scaling back the effects (e.g., turning off reverb) for some more subtle results, I was impressed. Before long, imaging sounded wider, there was a certain precision to the sound, and yes, it was an improvement. Not a huge improvement, mind you, but the whole track sounded as if someone had added a "lively and sparkly" control, then turned it up 15 percent.

Encouraged, I tried it on individual tracks. Percussion sounded awesome, and drums perked up too. Distorted guitars sounded *too* big, though. This is something you want to use sparingly, but it's a real

"secret weapon" kinda plug that I'm sure will have many people saying, "How did you get *that* sound?"

THE THRILLING CONCLUSION

Clearly, buying the Power Suite is more cost-effective than going *à la carte*, assuming you want all the plugs. But you have the option of just cherry-picking the ones you want, which is a Good Thing. However, each plug does have its own merits, so if you can afford the whole package, that's probably the best way to go.

As I said at the beginning, download the bundle and decide for yourself. I've made my decision: Power Suite has joined my plug-in A-list.



Strengths:

- Clean, precise sound quality
- Low CPU consumption
- Supports multiple hosts
- Great multidynamics processor
- WaveSurround provides unique, useful effects
- Automatable parameters

Limitations:

- No native external MIDI parameter control
- Single-algorithm, albeit flexible, reverb

by Craig Anderton

Bornemark Broomstick Bass

Price: A\$498 (est)
Contact: Bornemark,
www.bornemark.se

Strengths:

- Get a quick shot of bass line
- Includes effects
- Useful articulation options
- Playable as sampled bass instrument

Limitations:

- Not the most inspired bassist in the world
- Limited pattern library

Virtual Guitarist, Groove Agent drums, and now Broomstick Bass (BB for short): Ladies and gentlemen, meet the “robot power trio.” The BB plug-in (VST/AU/RTAS, Mac OS X/Win XP, shipped on DVD-ROM) lives to churn out bass lines in various styles. Choose one of

33 sounds from acoustic, electric, keyboard, or pedal bass, hit a keyboard key or chord to trigger, and away you go. Or more precisely, away it goes.

There are expressive articulation options, and even a souped-up metronome that can play an accompanying drum loop. The number of patterns is fairly limited (the pop category has the most with 25; many have between 4 and 8), although Bornemark promises more (and free!) patterns in the future. Interestingly, with Cubase SX/Nuendo, you can record the patterns in a MIDI track and edit them. However, you can't load your own patterns into BB.

Surprise: You can actually do something with the sound, thanks to processing (EQ, pitch shifter, compressor, chorus, and overdrive), glide, release, and so on. BB could use more overdrive types; the other

processors are fine. Furthermore, in “manual” mode, BB is a cool little bass instrument thanks to the well-recorded (and often velocity-switched) samples.



Okay, the software works — does the concept? Yes and no. I started off thinking “cheesy preset one-finger home organ patterns,” but a little tweaking and processing brought the patterns to life. Once that was squared away, some cool song ideas indeed started bubbling up from my subconscious. Some advice: Ignore the preset and instrument labels — experiment, because some really interesting chemistry happens when you use the “wrong” pattern with the “wrong” bass.


Bornemark doesn't oversell BB; they say it's there to provide inspiration and happily, it does. Just don't expect to replace The Real Thing. EQ



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by Lynn Fuston

ADAM ANF10

Big things, small packages? Indubitably.

Type: Passive 2-way studio monitor
Price: A\$1,500 (est)/pair
Contact: ADAM Audio,
www.adam-audio.com

Design: 2-way passive bass reflex
Woofers: 7" coated paper
Tweeter: A.R.T. folded ribbon
Frequency response: 50Hz–35kHz,
±3dB
Efficiency: 89dB SPL at 1w at 1M
Power handling: 60w (sin), 90w
(music)
Crossover frequency: 1.8kHz
Shielded: yes
Inputs: binding posts
Dimensions (W x H x D): 7" x
13" x 11"
Weight: 22 lbs.



There are lots of small speakers. Compact size doesn't justify their existence. The biggest problem I have with small monitors is that they usually earn praise as long as one qualifier is applied: "They sound really good for their size." The other common qualifying phrase is "for the price." I don't like having to make either excuse for gear.

That said, the ADAM ANF10s are both small and inexpensive — the boxes they come packed in are smaller than my normal monitors. Their price is A\$1,500 (est). That's per pair, not per speaker.

Two questions: Will I need to make excuses? And how close is the resemblance to the other ADAM siblings?

BYOA

The ANF10 is the first *passive* ADAM monitor, which means "BYOA" (Bring Your Own Amp). The ANF10s seemed very happy with my Harman-Kardon Citation 16A (175W RMS a side) amps. That's a lot of power for a small speaker. They only complained with very low frequencies at full power — and what 7" driver wouldn't cough with 40Hz at 175W?

ADAM monitors use Accelerated Ribbon Technology (A.R.T.) folded ribbon tweeters, a pleated diaphragm that squeezes air out instead of pushing it like a conventional voice coil. The ribbon on the ANF10 is a redesign of the one used on bigger ADAMs, with the same diaphragm but smaller magnets. The woofers in

most ADAMs are made of a special material called HexaCone. The ANF10s use a 7" coated-paper woofer instead, with a smaller voice coil.

LISTEN UP

My first impression of the ANF10s was very positive. I set them up and put in a CD, listening at a moderate level while I worked. They're pleasant speakers to listen to. They seemed a little darker than my Tannoys, which surprised me, because the signature ADAM sound is clear and open on top. I discovered the directionality of the tweeter was responsible for that impression. I had the speakers sitting above ear level and the vertical dispersion of the tweeter is best at ear level, which is where most console-mounted loudspeakers reside. After living with them for a while, I noticed this trait often.

CRANK IT UP


With enough power, these babies will play *loud*. The bottom has a lot of output around 120Hz, so you feel like you're hearing more low end than the speaker is putting out. It's a faux-bass reminiscent of the NS-10, where you know there's nothing below about 65Hz but you can enjoy listening anyway. I found judging the mix level on bass guitar was easy with the ANF10s. Judging the bottom of a kick drum, on the other hand, was difficult.

I tried them with a subwoofer, which I'd recommend. The sub filled in the 20–65Hz range making the bottom easier to judge. The ideal

environment for these speakers would be with an active sub with built-in crossover, relieving the ANF10s from handling the bottom two octaves (from 20 to 80Hz).

Excellent imaging is one of ADAMs' strongest points, and was evident with the ANF10s. The clarity was also very good. I heard overzealous de-essing on albums that I hadn't noticed before, and discovered panning details that I'd missed in the past. Noises and other problems were very apparent, which is a good thing in a studio monitor.

HONESTY

I'm impressed with the ANF10s. Their pleasing sonic character and the honest (sometimes too honest) presentation of mixes make them a good studio monitor. While you can use them without a sub, I'd recommend adding one, which turns them into a capable full-range monitor that's still affordable. My friend, George Cumbee of Classic Recording, echoed my sentiments after hearing them side by side with the \$6K active monitors he normally uses. "Wow — I could actually *mix* on these!" I agree. There aren't any other speakers I've heard under \$2,000 that I can say that about. 

Strengths:

- Great sound
- Can play loud
- Small and light
- Smooth midrange

Limitations:

- Narrow top-end dispersion
- Needs a subwoofer to sound its best

Seagate Pocket Hard Drive

by Mitch Gallagher

Price: 2.5 GB, A\$260–\$280 (est) street; 5.0 GB, A\$300–\$340 (est) street
Contact: Seagate, www.seagate.com

Strengths:

- Tiny and light
- Integral retractable USB cable
- Supports USB 1.0, 1.1, and 2.0
- Powered via USB connection
- Nearly silent

Limitations:

- Not recommended for data sharing between Mac and Windows

What do you do when you have to schlep a project from here to there? Do you unplug your main audio drive from your DAW and gingerly transport it? Do you FTP or network the files over? Do you burn a CD or DVD? Lately, portable drives have become an option — there are solid-state memory sticks, or you could use Seagate's Pocket Hard Drive.

The Pocket Hard Drive lives up to its name. It's a sleek round disk, 3" across and 1/2" thick. According to my kitchen scale, it weighs just 2.2 ounces — including a 6" USB cable that retracts into the drive body. (The cable is invisible and held securely when retracted.) The drive case is said to provide shock protection.

2.5 GB and 5.0 GB capacities are available; the 1" drives used turn at 3,600 RPM, and have a 2 MB cache. USB 1.0, 1.1, and

2.0 are supported on Windows Me/2000/XP and Mac OS 9.2.2 or later (including OS X). No drivers are required for Macs; a CD-ROM is included with Windows drivers. Also included on the Windows disc is an application that lets you write- and password-protect the drive, and create partitions, including a bootable partition (if your computer supports USB booting). The drive is USB-powered, so no external

power supply is required.

I received a 5.0 GB drive (actually 4.7 GB), which came formatted for FAT-32. I initialized it to Mac Extended format on my laptop, which took all of five seconds. The Pocket Hard Drives aren't intended for recording applications, but I had to try it out. I found I could get up to twelve 16-bit/44.1kHz tracks to play simultaneously using Digital Performer on my PowerBook, which has USB 2.0; you won't get the same results using USB 1.0 or 1.1.

In its main application, which is to serve as portable data storage, the Pocket Hard Drive works exactly as intended — but it could actually be used for a simple audio project if necessary. It's reasonably fast, definitely portable, seems to be pretty sturdy and forgiving of abuse, and it's cheaper than a USB memory stick. Unless your data stays in one place, a Pocket Hard Drive is a useful thing to have around. **EQ**



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S Y D N E Y - B R I S B A N E - M E L B O U R N E

by Mitch Gallagher

TASCAM FW-1082

Life just got easier for DAW-based studio owners

Type: Control surface/FireWire audio interface/MIDI interface/digital mixer
Price: A\$1998 (est)
Contact: TASCAM, www.tascam.com

Channel controls: mic preamp trim; channel select, solo, and mute switches; 60-mm motorized touch-sensitive fader

Encoder section: Pan, and EQ Gain, Frequency, and Q rotary encoders; High, Hi-mid, Low-mid, and Low band selector switches

Analog inputs: 4 balanced XLR mic with 48V phantom power, eight 1/4" balanced line inputs

Analog inserts: two 1/4"

Analog outputs: two balanced 1/4" line level, 1/4" headphone

Digital I/O: 2-channel S/PDIF coaxial (RCA)

MIDI I/O: 2 independent MIDI inputs and outputs

Other connections: two 6-pin FireWire, 1/4" assignable footswitch

Simultaneous external I/O channels: 10 in/4 out

Sample rates: 44.1, 48, 88.2, 96kHz

Resolution: 24-bit

Frequency response: 20Hz to 20kHz, ± 1.0 dB (44.1 or 48kHz), 20Hz to 40kHz, $+0.5/-2.0$ dB (88.2 or 96kHz); line in to monitor out

Noise: <-128 dBu (mic in to insert send), <-64 dBu (line in to stereo out or surround monitor out)

Minimum requirements: Computer running Windows 2000/XP with 6-pin FireWire port; Mac G3 or better with FireWire port running OS X 10.2.8 or above.

Host support: Any host software with support for FW-1082, Mackie Control, HUI, or MIDI control

Bundled software: SoftLCD, Cubase LE, GigaStudio 3 LE, and Nomad Factory plug-in demos

Newsflash: Computers? Have you heard? Well, they're being used in studios now. Surprise, surprise. But, you know, it takes more than just a computer to make music. You need an audio interface, a MIDI interface, some way to control monitor levels, and if you're of the hands-on persuasion, a control surface. And TASCAM's FW-1884 was the company's entree into designing a single FireWire unit comprising all these capabilities — check out my review in the February 2004 issue. Then the family expanded with the rackmount FW-1804 interface. And now TASCAM strikes again with the FW-1082, a scaled down version of the FW-1884.

WHAT IT IS

The idea behind this FireWire control surface/audio-MIDI interface is to package everything you need into one convenient, easy-to-use package. The FW-1082 has a small footprint: 19" wide, 15" deep. It fit perfectly on my desk in front of my Apple Cinema display.

The FW-1082 is capable of 10 input channels (eight analog, two S/PDIF) and four channels out (two monitor outs and two S/PDIF). Four of the analog channels have mic preamps; all eight sport TRS line ins. Channel 8 can be switched to accept guitar-level signals.

The unit can operate in one of three modes: In computer mode, its knobs, switches, and faders function as a control surface for your DAW. In MIDI mode, they send MIDI messages. In Monitor

Mix mode, the unit becomes a standalone mixer. The big advantage to Monitor Mix is latency-free operation. In this mode, the FW-1082 can monitor incoming audio and previously recorded tracks from the DAW, simultaneously.

As a control surface, the FW-1082 is directly supported in "native" mode by DAWs such as Cakewalk Sonar and MOTU Digital Performer. Apps that don't offer native support can be

application. With Digital Performer, there's native support for the FW-1082 (via a plug-in supplied with the unit), so support is complete — though some controls weren't working, such as the Function keys. (TASCAM says this will be fixed by the time you read this.) Sonar also offers native support of the FW-1082.

With Reason 2.5, I was able to program MIDI commands to make support fairly comprehensive. In some

programs I could get the faders and transport controls happening; support for other controls varied. In Nuendo/Cubase SX, everything worked perfectly. Comprehensive Logic support is on the way.

TAKE CONTROL

As an audio interface, standalone mixer, MIDI interface, and monitor level controller, the FW-1082 worked well for me. As a control surface, results varied from good to excellent. Taken as a whole, the package offers good value in an easy-to-use format. If you're looking to consolidate the hardware front-end of your DAW, TASCAM's FW-1082 is a strong contender. **EQ**



controlled using Mackie Control or HUI emulation. In MIDI mode, most of the surface's controls can be programmed to send MIDI messages.

HOW IT WORKS

Installation couldn't be easier: just hook up one power and one FireWire cable. The preamps sound good, the mixer is clean, and the monitor section does the job.

I used the FW-1082 on an Apple PowerBook G4 running OS X 10.3.5 and on a dual-G5 running OS X 10.2.8. As an audio interface it worked flawlessly with Digital Performer, Nuendo, Logic, Live, Reason, Peak, DSP-Quattro, and various software instruments.

As a control surface, the capabilities you have depend on the support offered by your

Strengths:

- Stereo monitor control
- 2-in/2-out MIDI interface
- Near-universal software compatibility
- Good audio quality
- Latency-free overdubbing
- Standalone mixer mode
- 10 audio inputs, 4 mic preamps

Limitations:

- No meters or position counter

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Edition 34 | January 2005

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by John Krogh

Native Instruments Battery 2

A powerful drum sample module gets an overhaul with a capital "O"

Type: Sample-playback software drum module

Price: A\$458 (est), A\$238 (est) (upgrade from Battery 1)

Contact: Native Instruments, www.nativeinstruments.com

Plug-in Formats: RTAS, VST, Audio Units, DXi

Supported Audio Drivers: ASIO2, CoreAudio, DirectSound, MME

Resolution: 24-bit/96kHz

Minimum System Requirements:

Mac: G3 500 MHz with OS X, 256 MB RAM; PC: Pentium III/Athlon 400MHz processor with WinXP, 256 MB RAM; both: 4GB free hard drive space (sample library)

Tested With: dual processor 1.25GHz Mac G4, OS10.3

Sample Import:

Kontakt/Kompakt/Intakt, Battery 1, LM4, AIFF, WAV, SDII, REX 1+2, Akai S1000/3000, Giga, SF2, EXS24, Halion, SampleCell

Maximum # of Outputs: 32 mono/16 stereo

When Battery first hit the streets a couple of years ago, it made a sizeable impact on the drum-programming community. Supporting a variety of sampler import formats, an interesting albeit limited set of lo-fi/sound design effects, a respectable collection of included kits, and a straight-forward, no-nonsense user interface, Battery provided groove addicts with enough fire-power to create all manner of live-sounding and synthetic beats. Time and technology have marched on, however, leaving Battery behind the curve compared to other drum synths and samplers. Naturally, this brings us to Battery version 2 (or simply B2), which boasts a number of improvements both

large and small, along with a healthy dose of new drum sounds to get your creative juices going.

FROM THE TOP

Interface-wise, Battery uses the now familiar "matrix/cell" model, in which samples are assigned to cells within a matrix. There can be a maximum of 72 cells, each of which can be triggered by a

single MIDI key or a range of keys. A cell can contain up to 128 samples, so it's possible to program highly dynamic velocity-switched and velocity-crossfaded drum and percussion hits.

New in B2, the matrix can be set up to show nine or 12 columns. The number of rows can also be reduced from six down to one, which allows for very small kits and space-



LOOP, MODIFY, AND ENVELOPE SETTINGS ARE REFLECTED IN THE SAMPLE WAVEFORM DISPLAY, PROVIDING USEFUL INFORMATION IN REAL TIME.

AMONG THE NEW FEATURES IN B2, THE MULTIMODE FILTER (ACCESSIBLE FROM THE FILTER MENU TAB) IS CAPABLE OF SERIOUS SONIC SHADING.

saving kits with no more than nine cells. This may seem like a small thing, but having a smaller matrix is helpful when dealing with a smaller pool of samples, because with fewer cells, there's more space to display their contents.


The expanded library is a considerable improvement from the original content (which is included for backwards compatibility). There's a wealth of choice kits comprising "best of" samples from FM7, Reaktor, Limelite, Krypt, Absynth, and other synth beat boxes in NI's lineup. I was especially

impressed by the selection of glitch and sound design-oriented kits such as Dusty Circuit. On the other end of the spectrum, the Jazz Brush and Multi-Mic kits are both superb for natural, realistic performances.

Several features have been ported over from NI's flagship sampler, Kontakt. Among them, direct-from-disk streaming. Instead of loading samples into RAM, they can be streamed off the hard drive, which means it's possible to load very lengthy samples without maxing out your computer's RAM. DFD is a nice touch, but not exactly

necessary for a drum or percussion sampler, as drum hits are generally short and don't require much RAM. Still, there are some kits — the aforementioned Multi-Mic kit, for example, offers samples of each drum recorded from various microphones (overhead, close, room, and so on), and requires 261 MB, whereas the Multi-Stick kit, a complete acoustic kit played with six different kinds of mallets, requires a whopping 528 MB. Considering this kind of memory consumption, DFD may be your only option if your computer is light on RAM.

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Native Instruments Battery 2

Another feature taken from Kontakt's playbook is B2's new multimode filter, which is super-smooth and quite capable of serious sonic shading. Not only will you find the usual suspects — low-, high-, and bandpass with variable slope — but you'll also find phaser and vowel filters along with 1/2/3-band EQ with selectable Q. It gets better. Each cell can have its own filter choice. Just be forewarned: Engaging filters for every cell within a kit will put considerable strain on your CPU.

Groups of cells can be enabled and disabled for playback via MIDI controllers or MIDI notes similar to how different sets of samples can be selected within Kontakt or GigaStudio. This allows you to add more expressiveness to your drum parts — for example, you could play a snare with "hotrods" during a verse, then switch to sticks during the chorus. The included Multi Stick kit is a great example of how this feature can be used effectively.

The original Battery featured an FX Loop that allowed you to create stutter and drum roll-type effects from one-shot samples. Essentially, a sample loop could be defined along with the number of repetitions. FX Loop has been updated to include tuning and crossfade parameters for smoother repetitions. Modulating loop parameters is the sort of thing that tweakers in search of bleeding-edge rhythmic maneuvers die for, and leave mainstream musicians scratching their heads wondering why on Earth anyone would want to loop small portions of a one-shot sample.

Speaking of modulation, the Mod section has been beefed up. At the top of the list is an assignable LFO, and you're free to use any of the envelopes along with any MIDI CCs to modulate up to eight parameters per cell. There's room for improvement, though. Some parameters (such as loop tune and count)

aren't available for modulation, and while there is a MIDI learn function, it doesn't extend to any loop-related parameters. What's more, none of the parameters are listed by name (at least not in Logic or Live, the two hosts I used with B2), so it's a bit of a guessing game when trying to modulate parameters not available from within the Mod section. This qualifies as a significant shortcoming in my book, and I'm hoping it's addressed in the very near future.

Replacing version 1's Shaper is a bonafide compressor. B2's isn't anything out of the ordinary: There are controls for threshold, ratio, attack, release, and makeup gain. But hey, a true compressor is mighty handy for punching up drums, so I'm not complaining. As with other synthesis and sound-shaping aspects of B2, the compressor can be disengaged to conserve CPU resources.

Rounding out the effects section is the Modify module, which includes controls for sample tuning, bit-depth reduction (instant crunch for even the cleanest of pristine samples), Hertz (a sample rate reducer that sounds not unlike a classic ring mod), and Sat (short for saturation, read "thickening agent"). All of these add up to a potent mix of lo-fi processors that can be applied per cell. Fun stuff.

WAX ON, WAX OFF


I never clicked with the original Battery, but B2 has made a believer out of me. The new modulation features, though not complete, afford a greater degree of sample manipulation and sound sculpting. I found new ways to manipulate my existing samples, twisting and torturing them until they were unrecognizable as percussion sounds. On the flip side, I was able to lay down convincing "live" grooves using the new acoustic kits. These are very well done, although not quite as detailed or comprehensive as some drum

sources (check out my Reason Drumkits Refill review on page 96). Still, their contribution to B2's library is almost worth the price of admission.

I experienced few difficulties while working with B2, whether I was using it as a plug-in or in standalone mode. In fact, sample load times were surprisingly fast, even with 500 MB+ kits. I never waited more than a couple of seconds.

The only major frustration was the limited modulation routing options. I'm happy that the Mod section has been improved, but there really ought to be a way to modulate FX Loop parameters via MIDI learn or directly by choosing them as Mod destinations.

THE SKINNY

As a sample-based drum and percussion sound module, Battery 2 is at the top of the heap. There are other software drum modules that have larger acoustic libraries, but that's not what Battery is all about. It's a combination of powerful synthesis features that can be applied to sampled kit sounds, whether they're derived from acoustic or synthetic sources. A lot of sonic damage can be done just with B2's sounds and feature set. Add to this a drum synthesizer such as Waldorf's Attack, Logic's UltraBeat, or NI's own Reaktor, and you'd have all of your drum and percussion bases covered. 

Strengths:

- Wealth of top-notch sample content
- Creative sound design possibilities
- Sophisticated trigger modes
- Easy-to-use interface

Limitations:

- Some critical parameters not available for modulation
- Limited built-in effects (no reverb, delay, and so on)

Peterson VS-S Strobostomp

by Mitch Gallagher

Price: A\$618 (est)

Contact: Peterson Electro-Musical Products,

www.petersontuners.com or
www.strobostomp.com

Strengths:

- Built-in DI
- True Bypass
- DC power through
- 10 preset, 2 user temperaments
- Capo/drop-tuning
- Easy to read display

Limitations:

- None to speak of



Looks can be deceiving. Good things come in small packages.

You can apply both sayings to the Peterson VS-S Strobostomp. The Strobostomp is a “virtual” strobe tuner, accurate to 1/10 cent, and a DI. Its case is lightweight, and feels like plastic. In fact, it’s made of aluminum — and there are pictures on the Peterson site of a Strobostomp being run over, dragged behind a vehicle, then tossed in the air to be hit by a baseball bat before finally landing on the pavement. The scarred box is then shown to be working after this “demo.”

You can adjust concert pitch from 433 to 447Hz, and there are 10 preset and two user temperaments.

The entire temperament can be shifted in semitones to support capo (up to five frets) or drop tunings (as far as four semitones).

The Strobostomp can run off a 9v battery or an external wallwart. A DC power out jack lets you daisychain other pedals from the same power supply. There are 1/4" input and output jacks, and an XLR for DI output. A DIP switch inside the battery compartment controls ground lift for the DI and two monitoring modes. In Tuner Monitoring + DI Output mode, incoming signal is routed to both the 1/4" and XLR outs, and the tuner is active all the time. Step on the footswitch and the outputs are muted for silent tuning. In 100% True Bypass mode, the incoming

signal goes through the tuner only when the footswitch is off, which also mutes the outputs. With the footswitch on, the tuner is off and the signal flows straight from input to outputs.

In use, this thing works great. The backlit LCD “strobe” is easy to read, and the DI is clean and uncolored. Tuning is straightforward and accurate: the Strobostomp worked well on electric and acoustic guitars (with pickups), as well as electric basses.

At \$309, the Strobostomp isn’t a bargain basement tuner. But for the price you get an excellent, lasts-a-lifetime tuner and DI that offers features not found on any other stompbox. Highly recommended for stage and studio. **EQ**

Audio-Technica Pro 70

by Mitch Gallagher

Price: A\$358 (est)

Contact: Audio-Technica,
www.audio-technica.com

Strengths:

- Tiny
- Includes instrument and clothing clips
- Phantom or battery power
- Good noise rejection
- Highpass filter

Limitations:

- Requires EQ for best sound



Lavalier microphones don’t find much use in recording studios —

the diminutive “lapel” mics are much more common on stage. And generally not on “music” stages — usually they’re used for lectures, plays, that sort of application. But before pigeonholing all lavaliers, you should check out Audio-Technica’s Pro 70, which is categorized by the company as a “lavalier/instrument” mic. It was the “instrument” part that caught our eye at last year’s Summer NAMM show.

The Pro 70 capsule/element is tiny; it’s permanently connected with a 6' cable to a “power module” that’s roughly 3" x 2" x 1". The power module can hold a battery for powering the mic — or use phantom power, if you prefer — and

has an XLR jack for a standard mic cable.

The Pro 70 comes with two mounts. One is for clipping the mic to clothing. The other can slip onto the edge of a guitar soundhole. An adjustment screw positions the mic nearer to or farther from the strings.

I tried the Pro 70 on both a Taylor steel-string and a Rodriguez nylon-string classical guitar. The mount slips onto the soundhole easily and securely, and is padded to prevent marring the guitar’s finish. The mic is small enough to be unobtrusive to the player.

Positioning any mic near a guitar soundhole invites excess “boom,” and as expected, the Pro 70 picks up a lot of bottom. By adjusting it as far as possible from the hole, you can control this a bit. There’s also an 80Hz highpass filter, switchable from

the power module. But even with the filter engaged, you’re probably going to need EQ to get the tone you want.

The mids and highs are far better than any pickup can deliver — more natural and smooth. I expected to hear a lot of pick or fingernail attack, but was pleased to find that assumption invalid. A big plus was the focused polar pattern: Noise rejection was excellent, making the Pro 70 useful for tracking acoustic guitars along with other instruments and vocals.

The Pro 70 proved very functional in the studio: It works well for isolating an instrument, and provides a much more natural tone than any pickup I’ve heard. You’ll probably need some EQ to get the sound you want, but the benefits are well worth it. **EQ**

by Randy Poole
and Mitch Gallagher

Royer Labs SF24

Stereo mic jubilee

Type: Stereo active ribbon mic
Price: A\$7,590 (est)
Contact: Royer Labs,
www.royerlabs.com

Capsule: 1.8-micron aluminum ribbon
Polar pattern: two figure-8 mics fixed at a 90-degree offset
Frequency response: 40–15,000Hz, ±2dB
Self noise: –18dB
Output impedance: 200 ohms
Maximum SPL: 130dB
Power requirements: 48-volt phantom power
Finish: Optical Black, optional 18k gold



“Life’s the same, moving in stereo” ... so said the Cars, way back in 1978. And it holds true today: Stereo audio rules the roost (despite surround inroads). But many of us are still capturing mono tracks, or creating stereo using multiple mics. For many situations, a single stereo mic might be a better tool. That’s where Royer’s SF-24 comes in.

The SF-24 is based on Royer’s stereo SF-12 coincident ribbon microphone. It features a pair of figure-8 patterned capsules, positioned one above the other at a 90-degree angle. It uses a thinner (1.8-micron) ribbon than Royer’s popular R-121 and R-122 mics, making it a bit more detailed and sensitive, but at the expense of slightly more fragility. But before you decide the SF-24 is “fragile,” note that it’s still rated to handle sound pressure levels as high as 130dB without problems — impressive for a ribbon. (For a review of the SF-12, see the September ‘00 issue. The mono version, the SF-1, was reviewed in March ‘02.)

So if the SF-24 is so similar — in fact, identical — to the SF-12, what’s the point? There’s one other detail: The SF-24 is an *active* ribbon, meaning that it has a built-in preamp, just like a condenser mic. (Almost all other ribbon mics are passive.) The built-in preamp provides one overwhelming benefit (among others, but this is the biggie): It isolates the microphone from the effects of preamp impedance. With a standard ribbon, the preamp has a major effect on the sound and output of the mic. Depending on the impedance, the preamp may not have enough gain to amplify the mic properly, or may add

noise to the signal. With the SF-24 (like Royer’s R-122 before it), these problems evaporate. The mic/preamp interface becomes transparent, and the output of the mic remains stable and clean regardless of preamp impedance.

IN USE

Cool, so you can plug the SF-24 into almost any preamp. Doesn’t matter if the mic doesn’t cut it sonically. Fortunately, the SF-24 shines in a variety of applications. On drum overheads, it has an open smooth sound. It’s not hyped like many condensers, but sounds “natural.” The SF-24 takes EQ nicely, without becoming harsh — a touch of 10k and a slight 300–400Hz cut resulted in a killer stereo drum sound.

The SF-24 was an excellent match for percussion in general. It rounds out hard transients in a pleasing way. On congas, for example, the SF-24 provided exactly the sound you’d want to hear for a recording.

Nylon-string guitar proved a perfect match for the SF-24; the mic is clean enough to handle high gain without adding noise. It has less proximity effect than other ribbons, so you can get in close without excess boom.

Woodwinds and French horn also worked well. These instruments can have annoying mids on certain notes, but the SF-24 translated them as nicely balanced. Trumpet and brass sounded fine, although the mic gave up on screaming high notes when placed five feet away.

Using the SF-24 on piano resulted in a wonderful stereo image, but required a lot of EQ to get the pizzazz — air and

brightness — we were looking for. A string section recorded at Oceanway in Nashville sounded lush and broad — the stereo image was great. There was a slight lack of top and bottom, but the overall result was excellent.

The SF-24 is relatively compact and visually unobtrusive, although you’ll still want a sturdy mic stand supporting it. The shockmount holds the mic well, but requires a firm shove to insert the mic. If the mic is inserted incorrectly, it’s difficult to get out of the mount.

CONCLUSION

The SF-24’s active preamp provides a huge benefit, removing impedance from consideration when choosing a preamp. The mic itself does a great job of capturing almost any source. The stereo image is excellent, the tonality is pleasing, proximity effect is controlled, noise is low, and versatility is high. Because it handles transients so nicely, the SF-24 is a great tool for digital recordings, providing a round, harshness-free midrange.

It’s pricey at \$3,795, but considering you’re getting two mics in a stereo arrangement for the price, the value works out. For stereo recordings, the SF-24 has the goods. **EQ**

Strengths:

- Compact for a stereo ribbon mic
- Takes EQ very well
- Wonderful stereo image
- Works well in a variety of applications
- No impedance issues with preamps

Limitations:

- Pricey



Lightmoves Project Manager, Joe Casamento with CEO Braham Ciddor



High End Systems still undecided about Australia

Following our enquiries, High End Systems have said they are still yet to announce their plans for the Australian market following their recent split with their Australian distributor, Universal Lighting and Audio.

The High End brand, which covers their range of moving lights, the Catalyst family of products and the Hog III line, currently has no sales or service representative in the country.

Many Australian users have expressed their concern, and we have heard at least one report where a piece of equipment, while covered by a warranty, had to be shipped to the High End office in Texas at the owner's cost for repairs. We anxiously await to hear what High End have promised to announce in the next few weeks.

LSC dimmers to Spectra for Eurovision

Spectra Stage & Event Technology: AB have recently taken delivery of LSC Lighting Systems TDS and e24 Dimming Systems for use on the Eurovision Song Contest.

Spectra chose LSC Dimming Systems – two TDS 48 channel systems and four e24 24 channel systems for the gig. www.lscighting.com.au

ROADWAY L.E.D. WALL MAY BE WORLD 1ST

Melbourne is the home to a world-first roadway feature: a 300 metre interactive matrix of colour changing LEDs on the new Craigieburn Bypass road. Supplied by veteran lighting projects company, Lightmoves Pty Ltd, the matrix is one of the unique design features on the freeway extension that links the Melbourne's Metropolitan Ring Road with the Hume Freeway. Part of the overall architectural and artistic design of the new roadway, the LED matrix is incorporated into an acoustic barrier wall of screen-printed acrylic panels.

Designed by landscape architects Taylor Cullity Lethlean and engineers Webb Australia in collaboration with local artist Robert Owen, the LED Wall is the main lighting feature of Stage One of the project which opened to the public on 21 December 2004. Lightmoves successfully tendered for this unique project designing a system that would deliver a matrix display of colour-changing LED fittings that could be individually controlled and regulated by transducers in the road.

Lightmoves previously worked on Melbourne's Arts Centre spire with consultants Webb Australia (formerly Barry Webb & associates) and Digilin, specialists in fibre optic and electronic systems. This relationship once again proved to be extremely successful.

Installed by contractors Alstom Australia, the LED Wall is one of the most ambitious feature lighting installations ever undertaken in Australia.

"The magnitude of this project was quite large as a number of electrical connections were required to terminate nearly a thousand luminaires. Therefore good design, planning and documentation were paramount for this project to be on time and within budget" explains Lightmoves Project Manager, Joe Casamento.

The Brief

The specification was predominantly performance-based, calling for a weatherproof luminaire that housed red, green and blue LEDs, and a control system that allowed individual control of every LED. The control system had to treat the wall as a low resolution video screen that allowed artists to use the wall as a blank canvas. Programming of sequences needed to include the ability to import images in the form of bitmap and video files. Transducers in the road were placed to monitor traffic levels and trigger the display of various lighting sequences.

The Solution

The challenging part of this project was the need to manufacture a custom LED fitting. It needed to meet the performance specifications whilst fitting within the relatively tight 40mm diameter area of the acrylic screen fixings. Such a fitting also had to be designed to endure diverse weather conditions and high UV radiation that is present in Melbourne.

> continues

L.E.D. (continued)

Lightmoves collaborated closely with Brisbane-based supplier, Digilin to develop a suitable LED fitting. Although Digilin is known for their range of Fibre Optic lighting products, they also manufacture LED strips and luminaires. Several prototypes were produced in the process of developing the LMCB40 for this project. The finished product is an IP66 rated, stainless steel RGB LED fitting with a UV-stabilised lens. The light source is a series of RGB (red/green/blue) surface-mount LEDs that are designed to be directly driven from an 'off-the-shelf' Dynalite LED controller.

"We are always careful where we recommend the use of LED lighting. However they were perfect for this project as we used them as a point source rather than a light source" explains Joe. "And the results are quite spectacular." The long predicted life for LED technology ensures that motorists can enjoy this unique feature lighting installation for years to come.

Being no stranger to large lighting control projects, and with nearly 3000 channels of lighting control to contend with, Lightmoves used Dynalite's 48-way constant current LED controllers as the basis of its control solution. DMX512 was the control protocol.

The Colour Tramp system from Artistic Licence was chosen to provide the overall control of the LED Wall. Its ability to control large numbers of LED fittings with a graphically-based screen made it a logical choice for this project. Joe Casamento claimed, "Colour Tramp was a great tool for us. It easily enabled us to program the wall by importing the artist's computer bitmaps. And the ability to have a full on-screen representation of the wall meant that a lot of programming could be done off-site."

Colour Tramp uses the Art-Net DMX over Ethernet protocol as output for its multiple streams of DMX data. Datagate, a product recently developed in Melbourne by Enttec, was selected to translate the Art-Net data into standard DMX. The first Datagate off the production was given a baptism by fire for this project, having to process seven streams of DMX information - a task it did with ease. Housed in a 1RU rack-mount enclosure, the Datagate has, amongst its wide variety DMX and Ethernet translation capabilities, the ability to convert Art-Net to eight streams (4096 channels) of DMX.

Finally, an AMX Netlinx NI-3000 was used to process information from the traffic counter system. Three induction loops in the road sense traffic flow across three lanes of traffic and pass this information via a traffic counter controller to the Netlinx using switch closures. The Netlinx then triggers Colour Tramp via its RS232 input, thus selecting certain sequences depending on the volume of traffic.

It is not easy to imagine a large video screen adorning a freeway wall. The result however is a very striking and successful demonstration of clever art and design using state-of-the-art lighting technology.

www.lightmoves.com.au



JANDS INTRO COLOR BLOCK

Jands is pleased to announce the arrival of the new Chroma-Q Color Elock.

The Chroma-Q Colour Block is possibly the most versatile LED fixture currently available. Unlike other LED products, which are limited by their external design to specific lighting applications, the Colour Block's modular enclosure can be used individually or easily connected together (via a built-in interlocking system, quick release catches and optional brackets) to create a wide variety of shapes.

Efficient thermal management techniques provide improved colour brightness and light

output from the Colour Block's four sets of 3 high output, individually addressable RGB LED's. Achieving an output comparable to fixtures twice the length, the Colour Block is ideal for discrete installations or where space is limited.

Designed to be intelligent both inside and out, the modular blocks incorporate the latest HSI (Hue, Saturation and Intensity) control as well as RGB and Variable Effects engine software that gives the lighting designer full control over colour and effects combinations.

• www.jands.com.au

VERTIGO INDUCING INSTALLATION

Hong Kong's Hopewell Centre stands at 65 stories making it Hong Kong's tallest. Recently Sydney firm Laservision was engaged to provide a lighting solution in order to bring the building back to its original glory.

In a city renowned for remarkable structures, the Hopewell Centre is unusual and distinct in style from all of the other buildings. The newly adopted lighting design enables the Hopewell Centre to stand out and come alive during the night.

The design involved illuminating the buildings crown and external ribs with color-changing LED (Light Emitting Diode) tube. In all, 2,221 meters of LED were incorporated into the building's new lighting plan.

The Hopewell Centre has also incorporated airborne special effects with the integration of a Laservision 40 Watt Stella-Ray laser system

to the buildings roof top.

The Laser system enables animated beams of light to span the harbour connecting the audience on the Tsim Sha Tsui promenade with the effects opposite them.

Viewing is best at street level in the Wan Chai District of Hong Kong Island and from the Tsim Sha Tsui promenade which is located directly opposite the city. The promenade is easily accessible by ferry.

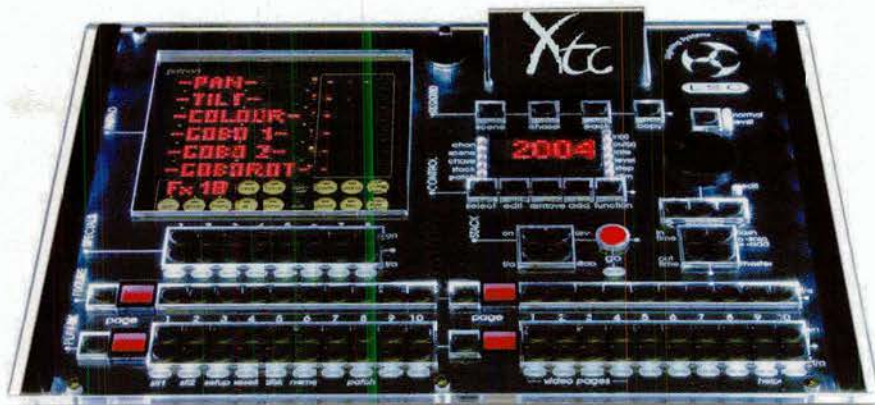
• www.laservision.com.au



Robe ColourSpot 575 AT

ROBE's latest installment in the AT Series is the ColorSpot 575 AT (below). It includes a bunch of effects – two separate gobo wheels with the "slot & lock" system, and two separate colour wheels. Uniquely in a 575 Spot, the ColourSpot 575AT has a motorized multi-step zoom with three different apertures of 15, 18 and 22 degrees. There is also a motorized iris, 3 facet prism, separate and variable frost effect and remote focus.

A new optical system and a new dichroic glass reflector boost light output of the ColorSpot 575 AT. • www.ula.com.au



XTC - flash as a rat with a god tooth

Showing for the first time in Europe at the recent Pro Light & Sound show (part of MusikMasse in Frankfurt) was LSC's soon-to-be-released lighting desk – Xtc.

It has a maxim engine and advanced moving light control from the popular PaTap touch screen module. In typical LSC tradition, there is a multitude of playback masters- up to 29 simultaneously, 500 memories, 100 fixtures, 100 groups, 100 presets, 100 palettes

and 1024 DMX output channels. It has 10 faders, just coded latch and flash buttons with a tri-colour LED for each playback.

Eight "specials" can store locks or timed events for strobes, smoke machines or other DMX controlled equipment. Midi control will soon be available. The front panel is made from 6mm laser-etched clear acrylic that is side lit with white LEDs.

• www.lscldighting.com.au

36 channels, \$250

Enttec's new LightFactory Starter Pack includes everything you need to turn your computer into a 36 channel lighting control system. LightFactory is a fully functional lighting desk on your PC, suitable for controlling conventional and moving fixtures alike. The new Starter Pack contains a 36 channel version of LightFactory, including moving light libraries, effects engines, midi/timcode triggering and audio input.

• www.balancedtech.com.au



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Lighting Saturday Night Fever

If anyone is at risk of becoming stereotyped, it may be that Gavan Swift is at risk of becoming a disco musical lighting designer. Several years back, he did a most excellent design for the surprisingly satisfying but financially failed show, *Oh What a Night*. Then he did the local work on the Australian run for *Saturday Night Fever*, a production still running around the region.

Best of all, the producers of the original West End version decided to hire Gavan for a revival of the show at the Apollo Victoria Theatre. They reasoned that the Australian touring set design, by Australian Eamon D'arcy, with Gavan's lighting, would be a fresh adaptation to give the show another run at the regions in the UK and also the West End, where I saw it.

It's a fairly average show. It looks great, it sounds great, the songs are ... well, as you would expect. They are mainly absolute classic Bee Gee hits. What seems to me to hobble the show is the dreadful 1970s dialogue, delivered in fake Bronx accents. It's really hard to handle, you find yourself trying to read the program in the dark, praying for the next song to start up. "To-n-n-y.... why don't ya l-u-r-r-v-a-me?" wails Annette.

I'm guessing that the producers went for a straight stage adaptation of the movie. It just sits weirdly in an era when *Wah Will Rock You* and *Mamma Mia* draw the classic songs (from *Queen* and *Abba*) into a script that doesn't sit back in the same era. Is that understandable?

Oh What a Night was loaded with disco hits and relied on a script that featured Gary Sweet as a drunkard nightclub owner, and Marcie Hines as ... a really good singer. It also suffered script fatigue, but at least the casting seemed to match the characterizations!

Stayin' Alive; Night Fever; Boogie Shoes; Disco Inferno. In that order; and then More Than A Woman; To Love Somebody; You Should Be Dancin' ... they keep coming.

For most people, the songs and the razzle will dazzle and Gavan's lights do a fabulous job. Bump and grind, glide, flash, and plenty of psychedelic colours. A show like this is fun to work with.

CX caught up with Gavan when he was in New York on a study trip. He was lucky enough to be awarded a Mike Walsh Travelling Fellowship.

Mr. Walsh is a friend of the arts, and he donates \$30,000 every year as \$10,000 chunks to three worthy NIDA graduates for a study trip. The award is made for any graduate who has been out less than 10 years, and Gavan just squeaked in as he graduated almost a decade ago. Someone with *Wardrobe* skills, plus an Actor were also chosen this year, and they went off on similar missions.

As well as the scholarship, Gav was blessed with some cash from the Roger Barratt fund, presided over by Ian Baseby, Tony Davies and Christine Durstan. Roger was Australia's greatest lighting designer.

This enabled Gavan to visit New York for seven weeks, see shows, and network - which he was doing in April this year. He was talking to designers on productions, some of whom he had worked with as an Associate in Australia. They in turn were arranging introductions.

The day I spoke to Gavan, he was off to the New York City Ballet, to meet people he had met through others.

"It's been ridiculously easy", he said, regarding the ease of networking, once someone is at his level.

- By Julius Grafton



TALES FROM EXPERIENCE

By Joshua Gum, Production Manager, Live Wire Productions, Sydney

The Evolution of Lighting into the Digital Era has brought around the implementation of an advanced range of consoles accompanied with a vast range of peripherals.

The specific product that I speak of is the Jands HOG 1k. A fantastic console that I could only ever mention in the highest regards. Fully decked out with an external monitor, and keyboard- it's functional and makes programming even on the fly no great task.

During my time spent with the HOG, I have however stumbled upon a little 'glitch' while at the rehearsal of a musical.

During Act 1 the desk behaved as would be expected, although it was during intermission that I noticed things certainly were not functioning as well as I would have hoped. The external monitor was flickering and scanning through cue list contents faster than the screen could cope. The on-board monitor was having similar problems. The programmer was unresponsive, basically leaving me the ability to only run the cue lists that were available on the current page.

My instant diagnosis was a bug in the software. Could it be that I had pressed a series of buttons and functions that could have caused it to lock up?

First came the simple turning off the desk at its switch to see if it was just a temporary glitch. To no avail. Then more desperate measures were taken to clean start the desk- a master reset if you like. The desk was reset and the saved show reloaded. The problem prevailed.

At 8 pm on a weekend, not a lot of options were left. It came time for the master firmware floppy disks to be taken out of their case and decisions to be made- do you run the risk of loading firmware from

2003 into a console to be running a show programmed in 2005 from current firmware?

Meanwhile, as per usual, the actors and crew were getting restless of the extended intermission. This inspired me to tell all backstage what the problem was. Instinctively I picked up the nearest Concert Comm headset (DT108- another industry standard) and pressed call. To my absolute amazement the screen stopped flickering and the programmer became responsive.

So, what had happened?

It seems that the show director at the start of the intermission innocently placed his headset onto the external QWERTY keyboard that was still connected to the console, hence pressing several buttons and causing the console to lockup. It was only by removing the headset that the problem was resolved.

The Last time I had thought to Save the show was the previous night; thereby me resetting the console left me with a superseded version of the current show.

So what were the lessons learnt?

- Do not have your keyboard plugged in for more than it is necessary to program the console with its various pallets and cues.
 - If you do have your keyboard connected, be sure that no one places anything on it
 - Save and save regularly.
 - Don't jump to conclusions- think things through logically.
- After all that, the rehearsal went on and the show flourished.



Chauvet Trackscan 250DSR-ILS

By Richard Cadena

For the last twenty years, the trend in automated lighting can be summed up in four beautiful words; smaller, cheaper, lighter and brighter. Due to efficiencies in design and a more competitive market, the barrier to entry into automated lights is continuing to drop while the quality of the offerings keeps getting better and better.

But the subtleties of the higher end fixtures are sometimes lost in the translation to entry-level products. For example, it used to be that microstepping was uncommon in lower priced automated lighting. As a result, pan and tilt movements were very "steppy," particularly in diagonal movements, and it was difficult to accurately hit targeted objects because of the large steps. But now it is not uncommon to find hi-res stepping in a wide range of products.

With ever-increasing competition for the lighting designer's automated lighting budget, manufacturers just might be paying more attention to more of those subtleties while continuing las cuatro tendencias.

The Trackscan 250DSR-ILS (a.k.a. ILS-606DSR) is one such very affordable automated fixture with a number of nice features. The 250-watt moving mirror scanner is part of the ILS line of product offerings from Chauvet Lighting. The ILS (Integrated Lighting System) range includes scanners, color changers, moving yoke fixtures that integrate with the ILS controller and operate seamlessly as a system.

The Trackscan is a relatively small and lightweight moving mirror fixture with a stylish housing in the vein of the Martin MX series. At about 27.5" long, 13.5" wide and almost 10" tall, the 34 pound fixture is slightly smaller and more lightweight than the MX-10 Extreme. It has seven rotating gobos, four of which are metal, one glass gobo, one multi-colored dichroic broken glass effect and one textured glass effect. All of them are interchangeable and they are easy to replace as the retaining spring has a convenient tab. You can almost grab it with your fingers although it's easier with needlenose pliers.

One of the nice surprises in this fixture is how slowly and smoothly the gobos can rotate. In the slowest setting, a gobo makes a full rotation in about one minute and fifty-six seconds, with no discernable stepping or glitches. It's not easy to find such movement in automated lighting in this price range and it makes a big difference in how it can be programmed. Fast movements are fine for discotheques, but slow, graceful movements increase the range of emotion.

There are nine dichroic colors plus white, including a deep UV that looks really nice. There is no red color, presumably because of the high color temperature of the lamp, but all of the other colors are distinct enough to be very useful. The

dichroic filters on the color wheel are trapezoidal, which makes for nice split colors with no dark areas.

The light is nice and punchy for a 250-watt fixture. Using a Minolta T-10 Illuminance Meter (www.minolta.com) we measured 1018 lux (95 footcandles) with a 27-foot throw. The beam diameter at that throw distance is 6'-8" in diameter, yielding a 14 degree beam angle. The color temperature is quite high, about 6800K, which makes it appear even brighter. The optics are fair and the gobo projections produce some halation. The mechanical dimmer is a bit steppy and drops off quickly near the blackout. The strobe is nice and snappy and it can produce an excellent fast strobe as well as a very good slow strobe that is still quite snappy.

The control options on this fixture make it a very versatile light. It can be controlled with seven channels of DMX or it can operate in Stand-Alone mode. A built-in condenser microphone activates the pre-programmed movements and color/gobo changes, producing a pre-programmed show. If other ILS fixtures are connected with data cable, one of them can be designated as the Master and the other the Slave units, synchronizing them to the movements of the Master unit. And for the ultimate in easy control, the CA-8 handheld or foot-operated controller with three buttons allows you to change colors and gobos or select a pre-programmed moving pattern such as a zig-zag.

The remote addressing capability that the ILS controller provides one of the first implementations of that technology in fixtures of this price range. It allows you to set the fixture address from the controller rather than having to do it at the fixture. It can be a great time saver if you have

already hung the fixtures and forgot to address them (nobody does that, right?) or if you need to change the address. When the Remote Device Management (RDM) protocol that is currently under development is finally approved, then more systems will have this capability, but Chauvet has implemented their own version and it's available in this system now.

The ILS controller integrates very well with this and other ILS fixtures. It allows you to select fixtures of any type, and then choose the parameters to change. For example, you can select a number of Trackscan fixtures along with some ILS Colortrack color changing fixtures, and then change the color of all the instruments together. It's a

quick and easy method of programming that is very intuitive and simple to learn and use.

Access to the internal parts of the Trackscan fixture is easy and straightforward; it has six Philips-type screws securing the molded polycarbonate clamshell cover. Once removed, the housing comes apart and you can access all of the moving parts and the electronics in the body of the fixture. The lamp replacement is facilitated by the two thumb screws in the rear of the unit, and it's very easy to remove



Pulsar Chroma Panel

By Richard Neville

The Chroma Panel is yet another addition to Pulsar's continually expanding Chroma line of LED products for entertainment and architectural usage. It's simple, straight forward concept has made it a popular product in installations around the world. Perhaps the greatest measure of the product's success and popularity, however, can be judged by the enormous number of 'copy cat' versions that other companies have begun to sell.

At a glance, the Chroma Panel is a solid white box: 60cm square and barely 15cm deep. The front of the panel holds a removable frosted piece of perspex plastic, which diffuses the light emitting from inside the fixture.

As stated, the idea behind the Chroma Panel is very simple. Four strips of alternating red, green and blue LEDs line the perimeter of the inside of the unit. A reflective piece of cloth that looks uncannily like tough-spun gel reflects the light of the LEDs through the diffusing perspex, creating a uniform block of colour across the two foot square surface of the panel.

While the idea of a colour changing panel may not enthrall everyone, the Chroma Panel is one of those toys that designers could find a million uses for, partly because of its design, and partly because of the technology and accessories that Pulsar back the product up with.

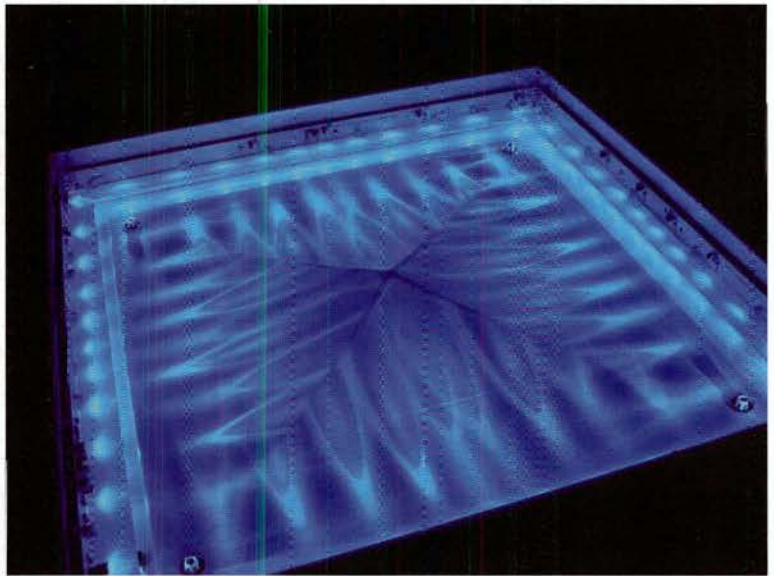
The Chroma Panel uses the common Chroma Zone system that Pulsar use in all of their LED products, including the hugely popular Chroma Banks. A small power and data supply unit, barely larger than a conventional data splitter, accepts DMX and outputs both power and control signal to various Chroma units using a connector very similar to a cat5 socket. On our test unit, Lots of Watts supplied us with a customized controller that used common 6-pin cable to run between the Zone and Panel, which is probably a more road-friendly method of cabling.

Control with the Chroma Zone gives operators access to a range of well-known inbuilt effects including colour scrolls, snaps and a range of strobing effects. Operators also have access to the control of red, blue and green intensities in each panel.

The unit's light weight and flexible mounting options makes it simple to integrate into set pieces, walls, ceilings, or virtually anywhere. Users even manufacture a frame which allows the panels to be safely set up on the ground as a dance floor, or even as an illuminated catwalk!

So, all the accessories and controls make life easy and creative for the user. But how well does the unit itself perform?

As expected, the unit produces an excellent range of colours,



including a substantial yellow and magenta, which users of LED products will know can often be hard to obtain. The mixed white colour comes with the expected LED sterility, but it would be rare to find an application where the product would be needed to produce a perfectly even white. The diffusion panel does a great job in evening out the three colours used to mix white – users of open faced LED products such as the Chroma Bank and Pixel Line will know that the colour white still shows hints of red, green and blue when the LEDs aren't diffused. Colours remain fairly consistent throughout range of the LED intensities, although users will notice that the centre of the panel becomes noticeably darker at lower intensities, which somewhat diminishes the clean, uniform square of light that you see at full brightness.

Users can find a great strobe effect between colours and black, with instantaneous switching between different colours.

The diffusing sheet of perspex means that operators can not expect anywhere near the same level of brightness from the Chroma Panel as from other open-faced LED products. However the Chroma Panel is certainly bright enough to stand out as part of a set, providing it isn't hit with too much directional light. In essence, the brightness of the product relegates it to being a lighting effect in the theatre and concert environments – don't expect to be able to wash a stage with a dozen of them, because it's clear that they weren't designed for it.

Several designers have used them to great effect in recent months, as stage backdrops, floor panels or integrated into set designs. The versatility of this product, coupled with the proven reliability and support network of both Pulsar and their Australian distributors, Show Technology, make the Chroma Panel a great effect to add to the lighting designer's toy box.

• Thanks to Lots of Watts for supplying the Chroma Panel and Chroma Zone for the review.

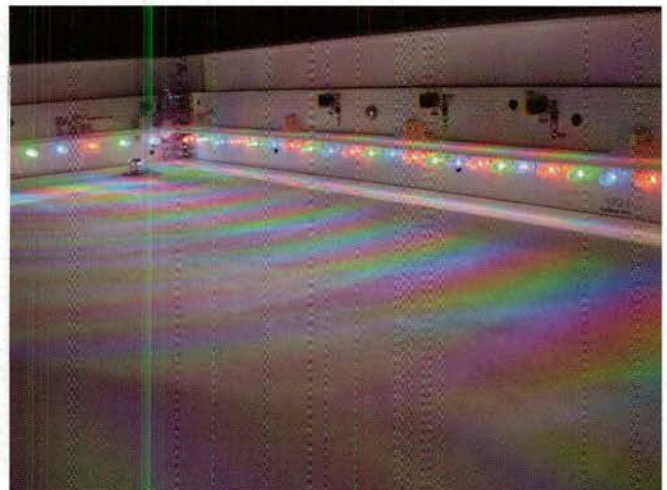
Chauvet (continued)

the lamp holder. The two thumb screws, however, are not captured fasteners, so be careful not to lose them when you're at the top of a ladder replacing the lamp. The lamp socket also has a very tight fit and it's a bit difficult to squeeze the lamp into the socket.

The beautiful sapphire-blue display menu is easy to move around in and it has nice features such as Blackout mode, Split Color options, and Invert Pan and Invert Tilt. It also has Invert Dimmer, which is something that you don't often see.

From a tech support standpoint, the backup for these products seems to be very good. More than once we called technical support and they were very responsive and knowledgeable about the product.

The Trackscan 250DSR-ILS is a great looking fixture inside and out. At a street price of under \$1000, it's a lot of light for the price. It's smart, bright, and more versatile than many of the automated lights in that price range. •www.chauvetlighting.com



Sine wave dimming

What's all the noise about?

Everywhere you look it appears some expert or other is telling us that we can no longer do the work we have always done in the way we have been used to doing it. The latest set of tools to feel the heat of technological change is the tried and trusted thyristor or triac-fired dimmer. Since the early 1960's lights in Theatres, Studios and on concert stages large and small have all been controlled using dimming products that share a common operating principle. Simply put, lamp intensity is controlled by cutting the waveform at a selected point thus limiting the amount of energy flowing to the filament.

While elegant in its simplicity this process generates a number of unpalatable by products that over the years we have learnt to live with, accepting them as part of the process. The switching off and on of the current happens each half cycle of the mains supply (100 times a second on a 50Hz supply). Each time the current is switched it rises from zero to the set level in around 2 microseconds causing a sharp current rise that creates significant wide spectrum radio interference as well as a sudden shock to the lamp filament causing it to resonate or "sing." (See Figure 1)

This filament vibration has obvious implications for lamp life and hence long-term operating costs. To control these problems dimmer manufacturers use a large inductor or "choke" in series with the load that has enough inertia to slow the rate at which the current rises each time it is switched on. While helping to alleviate some (not all) of the noise at the filament these inductors often introduce noise at the dimmer unit itself as the coil windings vibrate. This often results in dimmer modules being banished from the performance space altogether and placed in a room where the buzz will not offend the ears of audiences or struggling sound techs!

If acoustic noise was our only problem then perhaps we could continue to use phase cut dimming and still sleep soundly at night but the world is a rapidly changing place and we can no longer ignore the costs imposed by continuing to use technology best suited to another era. Nearly every home, office and certainly performance venue now houses a multitude of computers, wireless communications, cell phones and microprocessors as well as it's own array of lighting dimmers.

The airwaves are increasingly crowded and equipment that adds to this noisy environment is increasingly in the sights of the legislators. We are also increasingly being made aware of the need to be efficient in our use of available power and while phase cut dimmers are generally efficient their by products pose some real financial and environmental issues.

At any level below full, thyristor dimmers produce triplen harmonics. This leads to the currents in three phase systems not canceling out as designed but summing. This increases the load on the neutral runs and supply transformers as well as runs the risk of overheating the system

wiring.

The larger the dimmer installation the more pronounced the effects. Instances where neutrals overload and lighting systems go haywire are the stuff of legend.

The only way for electrical systems to cope is to overrate the supply or, simply put, have more capacity available than the installation is designed to use so that the transformers can absorb the excess stress placed upon them by these non linear loads. This translates into wasted resources and Energy Authorities worldwide are starting to seek ways to recoup the costs of providing unsold capacity. Many are seeking to surcharge customers who produce significant interference on the mains.

The potential future cost alone is reason enough to look at alternative answers to the dimming question.

It was not until the advent of a new switching device that new possibilities for dimming technology opened up. The IGBT, or "insulated gate bipolar transistor," is a semi conductor capable of switching high currents on and off many times per half cycle. IGBT dimmers soon appeared using a concept known as Reverse Phase Control (RPC) whereby the IGBT replaces both the thyristor and the choke. In simple terms, instead of switching the power on at a prescribed point in the mains half cycle the RPC dimmer turns the current on at 0 volts and then turns it off when the desired level is reached. (See Figure 2)

This process coupled with the fact that the IGBT is a transistor means that the fall time and current can be controlled thus reducing the incidence of lamp sing to almost imperceptible levels. While a welcome addition to the dimming portfolio RPC dimmers still produce harmonic distortion on the mains. In addition they are less suitable for controlling inductive loads and the combination of the two can produce destructive results.

Enter the "Sine Wave" dimmer! Using robust, high speed IGBT's it is now possible to cut the incoming mains into a large number of pieces to create a sine wave output of continuously variable amplitude. (See Figure 3)

The trick to success is the precision control of the IGBT's. By retaining the waveform the sine wave dimmer effectively eliminates the problems of noise and harmonics from the equation offering a clean power source with a linear characteristic. In real terms this means you can finally use dimmer channels set at non-dim to supply moving lights, motors, strobes and even smoke machines without damaging either dimmer or load. Taken to extremes your sine wave dimmer could under certain conditions even replace the ballast on your discharge lamp

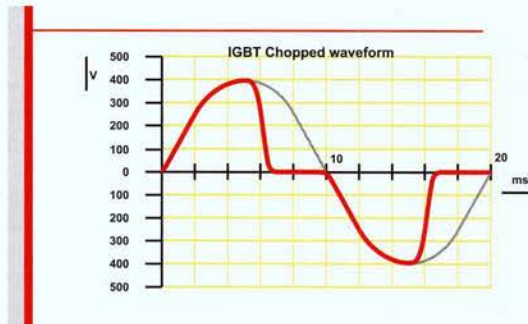


Fig 1

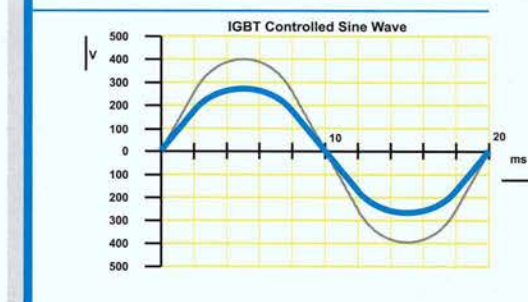


Fig 2

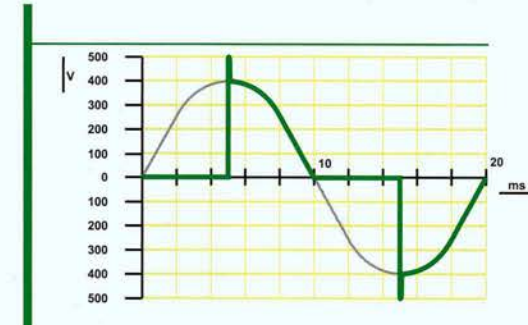


Fig 3

source!

Direct connection of low voltage fixtures can be achieved by setting the maximum output voltage to the desired level removing the need for noisy and bulky transformers on the set. All this and the elimination of lamp "sing", choke noise and harmonics awaits the user of the new generation of sine wave dimmers. Sine Wave dimmers also come with some unexpected bonuses. Sine wave modules can be designed to handle indefinite short circuits on the load side returning to full operation once the short is removed. This coupled with instant overload cut offs means that nuisance tripping of circuit breakers is a thing of the past and the likelihood of damage to your dimmers themselves is minimal.

Not having to worry about dimmer noise means that distributed dimming systems are now even more appealing. Fully flexible systems where dimmers can be easily re located around the venue greatly increases the flexibility of the system and it no longer is an issue if dimmers are located near to audiences.

Leading the pack of Sine Wave dimming manufacturers is Dutch manufacturer IES. With over 10,000 circuits of sine wave installed and operational throughout Europe they offer a complete range of dimmer solutions ranging from modular installation racks to distributed "power bar" systems that are easily configured over an Ethernet network.

IES is now part of the ETC stable of companies giving them access to worldwide distribution, including through JANDS here in Australia. ETC have already released an IES inspired Sine Wave version of their popular Sensor dimming systems in the US so the what has been a boutique solution till now is well and truly in the mainstream. There is no argument that Sine Wave dimmers cost a good deal more than their traditional equivalents but the long-term savings and immediate operational benefits make for a compelling argument in their favour. Some players have been in the Sine Wave business for a while, a bit with less success than IES, but for most it is a case of playing catch up as there can be little doubt that this train has already left the station. As Jan De Jonge from IES says at the conclusion of his compelling trade show demonstrations, Sine Wave! There is no excuse for not using it!



Richard Neville at work with a Jands Vista console

Using Vista

Jands' new top end lighting console gets a show run

It's rare that the release of a new lighting product generates such a remarkable amount of interest on a global scale, from the usually skeptical entertainment lighting industry. In a world where users tend to resist new ideas until they're thoroughly established, why is it that so many designers and programmers have seized every opportunity to jump on the bandwagon of such a revolutionary console?

In late April I had the opportunity to spend some quality time with the Jands Vista on a music DVD shoot – one of the console's first major jobs in its home country. This job had everything, a ridiculously tight deadline for programming, no margin for error and demand for a creative, effective moving light design for a band's live DVD recording in front of 3,000 people.

To some this would be a less than perfect situation to attempt to use a new, largely unknown console on. For me, it was the chance to give the console a chance to live up to the marketing hype – that it was a user friendly, stable, well supported console that could handle all the demands of both playback and live control in the kind of show situation designers work in every day.

From the first rainy afternoon I spent at Jands with their training guru, Alex Mair, it became obvious that the console, while clearly completely different to anything on the market, seemed strangely familiar and sensible because everything Alex talked me through just seemed to make sense.

To begin with, there's the graphical patch system, complete with a drag and drop method of patching any of the fixtures from its enormous library. While in the patch window, you can easily edit fixture parameters, such as telling the console that you've fitted custom gobos or colours, for example. The operator also has instantaneous action to the maintenance features of their fixtures – a row of buttons across the top of the screen allow for the reset, homing or lamp controls with a single button push after a fixture is selected.

In the programmer, fixtures are represented as icons, which can be arranged to reflect placement in the rig, allowing for easy selection. Selecting fixtures is as easy as dragging a box around the icons with the specially designed pen and touch screen – just as if you were selecting files on a computer.

When it comes time to set parameters such as colour, beam and intensity, the incredibly user friendly nature and flexibility of the Vista comes into play. For those of us who grew up with three encoder wheels, the Vista has the same three encoder wheels, allowing the operator to twiddle their way through any fixture parameter. For those

(continues)



Using Vista

(continued)

who like to see exactly what they're getting, the main control screen of the console can be used to bring up a more 'visual' selection of parameters. For example, while a CMY colour system can be controlled using the three encoder wheels, the Vista can also control the system by presenting the operator with a comprehensive range of LEE colour filters, a CMY or HSV colour mixing chart, or a graphical representation of each colour wheel, so a particular filter can be easily selected with one click. Later in the week, when I had a range of fixtures under my control, I found the mixing charts incredibly accurate, and discovered that the console will automatically select the closest matching colour for fixtures with fixed colour wheels.

Preset information for colours, gobos, beams, positions and groups can be saved and organized easily. Then, by loading a graphic of the console's layout on the main screen, users can simply drag and drop presets, assigning them to different flash and playback buttons anywhere on the console.

Even while sitting in the Jands training room with only a WYSIWYG system for guidance, the Vista proved easy to patch and record basic information such as presets. By the end of the day, I dared to suggest to Alex that I could be able to setup this console faster than I could a Hog – a console I have been operating for years.

Despite this apparent ease of use, the real test would still be in programming around 400 cues for a show in less than two nights of programming time.

It's almost easier to forget everything you ever learnt about programming when venturing onto the Vista – the console's method of layout, storage and playback is so fundamentally different that it took a little while to get used to the basic concepts. In essence, the Vista places cues (known as 'steps') along a timeline of variable length. The amount of space between each step determines the step's fade time, and it's here where programmers will do most of their work. Recording a fixture into a step creates a tree view of each of the fixture's parameters, much like a tree view of a directory in Windows. It's then possible to adjust the fade time of each parameter of each moving light, simply by clicking and resizing its line on the timeline. I'm not going to go into too much detail here, because it's going to get too confusing and boring to understand – however Jands do have an electronic version of their manual on www.jandsvista.com.

When programming time rolled around, the true power and flexibility of the Vista shone through. Preset information was easily programmed and moved around the console, with the large, three line LCD labels clearly displaying each button's contents.

After creating my first cue, it took a few moments for me to come to terms with the fact that the console doesn't directly make use of a "record" button – in essence, if you have a timeline open, you're able to edit or create any cue simply by clicking on the step you wish to work with. While there were a few times where I accidentally edited or created cues I didn't want to, the concept soon grew on me.

The timeline, tree-view structure of the console allows for the easy manipulation and duplication of both entire cues and parameters within a cue. For example, it's possible just to copy a fixture's movement parameter from one cue to another by just copying and pasting the

information from one cue to another.

Mp3 music files can also be assigned to any timeline, making it easy to space cues throughout a music track and get fade and wait times perfect. In both edit and playback mode, the console's encoder wheels and various search functions enable you to "shuttle" across timelines, fast forwarding, rewinding, pausing and playing wherever you like.

I'd like to take this opportunity to mention the fact that in the week I had the Vista, I only managed to crash it once, after a relatively intensive eight hour programming session. Other than that, the console performed quickly and almost flawlessly. As one would expect, Jands are still ironing out a few bugs, but there wasn't a single bug that stopped me from doing my job during programming or playback. When the console did crash, the Jands team responded with a repaired show file in less than an hour – I don't think I've ever seen that kind of support anywhere before. Thanks also go to Alex Mair, who sat patiently through all of the programming and show, furiously noting down everything I did and suggested so it could be taken back to the R&D team who are still coming up with faster, easier and more useful software features.

While there is still more that the console can do, the Vista, in its present stage of development, is a powerful, logical desk that is surprisingly safe for show use. The absence of a cue list or timeline

overview window was mildly annoying, and some designers have commented that they miss the ability to fade up a fixture with a few presses on a keypad. However, the important thing to stress is that the team at Jands seem more than willing to listen to people's recommendations, and in many cases, they're implemented quickly. Alex and I created a substantial list of possible additions, and it's been a privilege to be kept in the loop since the show about how they could be implemented in later versions.

Many people in Australia and around the world have already been impressed by its design and concept, and as

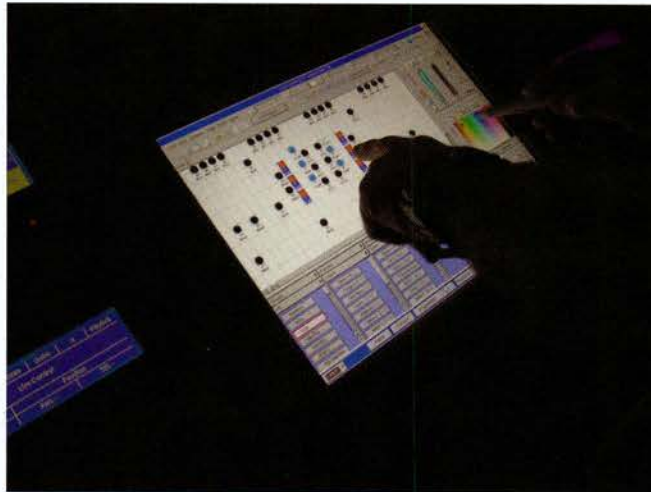
Jands begin training people on the console around the country, more and more designers and programmers are discovering the true power, usability and flexibility of the Vista. The console proved perfect for timing-critical applications such as the DVD shoot I worked on.

Its operation would lend itself perfectly to theatre and concerts utilising even the largest of rigs. With the addition of a few more playbacks (the development of a wing hasn't yet been ruled out) the Vista might even be able to find its way onto the dance party scene.

Congratulations to Jands for creating, selling and supporting a largely homegrown console to the world that can proudly compete with other more established consoles. The development team's dedication to the console is evident in the software development, support and faith in the product, and every designer should look forward to being able to experience the Vista for themselves.

Thanks Alex Mair and the tireless support team at Jands.

Congratulations to Jands for creating, selling and supporting a largely homegrown console to the world that can proudly compete with other more established consoles. The development team's dedication to the console is evident in the software development, support and faith in the product



The programmer window, showing fixture icons



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ETC SmartFade

By Richard Cadena

If you've ever suffered the humiliation of calling tech support because your console was "malfunctioning," only to find out that the Master fader was at 0%, then ETC has a console for you. When I first turned on the new SmartFade console from ETC, the first thing I noticed was that there was a beautiful sapphire-blue lighted indicator over the Master fader flashing at me, indicating that it was at 0%. I immediately felt a kinship with the code writers at ETC.

SmartFade is a great console for the control of up to 96 channels of conventional lighting. It's easy to use and powerful at the same time. Most of the features and operation are very intuitive and those that require more investigation are easy to follow once you know the trick. For example, to change modes you have to hold the power button down for five seconds and then select the mode with the encoder.

Another example is the power down procedure; you have to press the power button and then confirm your intention by pressing the "check" button.

The console comes in two models: the SmartFade 1248 and SmartFade 2496. The difference is that the SmartFade 1248 has two banks of 12 faders that can be used as a 12-channel, two-scene console in Two Scene mode or as a 48-channel console with 12 pages of 24 memories (288 memories total) in Normal mode.

The SmartFade 2496 has two banks of 24 faders that can be used as a 24-channel, two-scene console in Two Scene mode or as a 96-channel console with 12 pages of 48 memories (576 memories total) in Normal mode.

Either model can be used as a two-scene preset console in Two Scene mode, a memory console in Normal mode, or as a backup console in DMX Backup mode.

In Backup mode the 1248 can store 24 memories and the 2496 can store 48 memories that can be played back with the faders or with the cue stack. It also accepts DMX input from a main console and controls it with Fader #1. It can be merged with the output of the console (Fader #1 at 100%) or it can be configured to automatically take control of the show in the event that the DMX input from the main console fails. In

Backup mode, the memories are recorded by capturing a snapshot of the DMX input.

Operation in Two Scene mode is simple and straightforward. You set the levels in Scene A, then in Scene B, and use the manual crossfaders to go from one scene to the next. Alternatively you can set the crossfade time and let the console do the fading. The nice thing is that the LCD display shows a bar graph of the levels of the active channels and the Kelly-green lighted indicators below the faders light in proportion to the channel level.

In Normal mode, two banks of 24 (or 48) faders (48 or 96 channels, respectively) can be used to directly control individual channels and program memories, after which they can be used as playbacks to recall cues stored in memory. There is also a stack which can have up to 99 steps, plus four sequences, each of which can have up to 24 steps. The sequences are stored and played back on the last four faders in the console. The memories and sequences can be played back with the default timing or the timing can be configured during programming. On playback, the timing can also be manually over-ridden on the fly.

In addition to the basic 48 or 96 channels, there are also two non-dim channels, IND 1 and IND 2, reserved for any DMX-triggered effect or device such as cue lights or fog effects. They are conveniently located below the Bump fader and Master fader and they can be patched to any channel.

The SmartFade is a well-built console for medium-sized conventional lighting systems that is easy to learn and easy to use. I can see it benefiting a variety of users, from churches, to small- to medium-sized theatres, to schools and A/V companies, who need a simple but effective lighting control solution.

The lighted, colored buttons are aesthetically pleasing and the tactile feel of the faders, encoder wheel and buttons are typical of ETC quality.

And thanks to the insight of the designers of this console, we're less likely to suffer humiliation at the hands of the master fader.

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