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 in Australia



Pic by Bob King

16 REVIEWS!

Yamaha PM5D console;
 GrandMA Micro, DL2 digital
 light, Mindprint Envoice, Phonic
 Vocalmax, CM Labs 64, Yamaha
 SPX 2000, Universal Audio LA-
 610, AMS Neve 1073, EMU
 Emulator, Trident 4T, PreSonus
 Central Station, ETC Revolution
 and more!

NEWS! Homebake • Tsunami concert • Locked
 out - David vs. Goliath in Adelaide • Big Day Out, the
 inside story • New toys • People • Gossip • and more!

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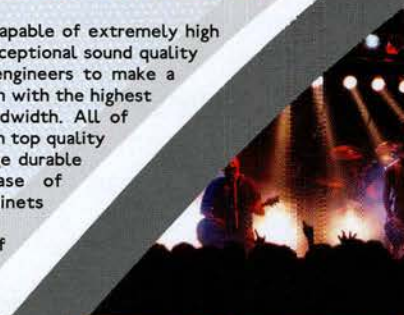
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- 15" Bandpass-Woofer
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- 500 x 500 x 850 mm

FL 18 ACTIVE

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CX

EQ



the lifestyle magazine
for technicians!
**LIGHT • SOUND
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REVIEWED:

High End DL2,
ETC Revolution,
GrandMA Micro
In LX.

• Starts page 85



REVIEWED:

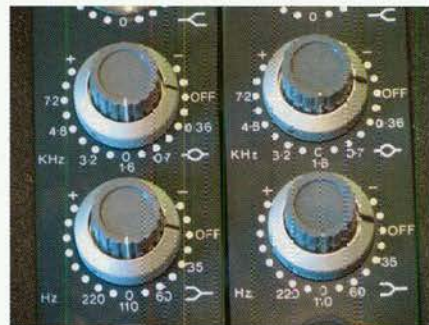
12 hot audio products from EQ Magazine

• Starts page 62



REVIEWED:

Yamaha PM5D LDCM • Page 38



Rock photographer (legend) Bob King took this great photo in Sydney. Our feature story on Brian Wilson delves deep into why he is so strange.

Winner!

Robert Bird from Kepperra in Queensland has subscribed and wins a training course worth \$2,625. To subscribe, log on to www.jul.usmedia.com or call 1-800-635-314

FEATURES:

SMILE! The album, the studio, and the live gig. • Page 20

Tsunami Concert: how the industry came together at a time of need.

• Page 42

Acoustic Guitar – from a sound engineer's perspective • Page 54

Small Gigs: Duncan Fry's spin on these! • Page 52

Festival Guys: behind Big Day Out and Sydney Festival • Page 50

Living Legend: Jack Singer profiled • Page 56



**FROM THE PEOPLE WHO
ONCE PUBLISHED
CONNECTIONS MAGAZINE**

• CX #12 JAN/FEB 2015

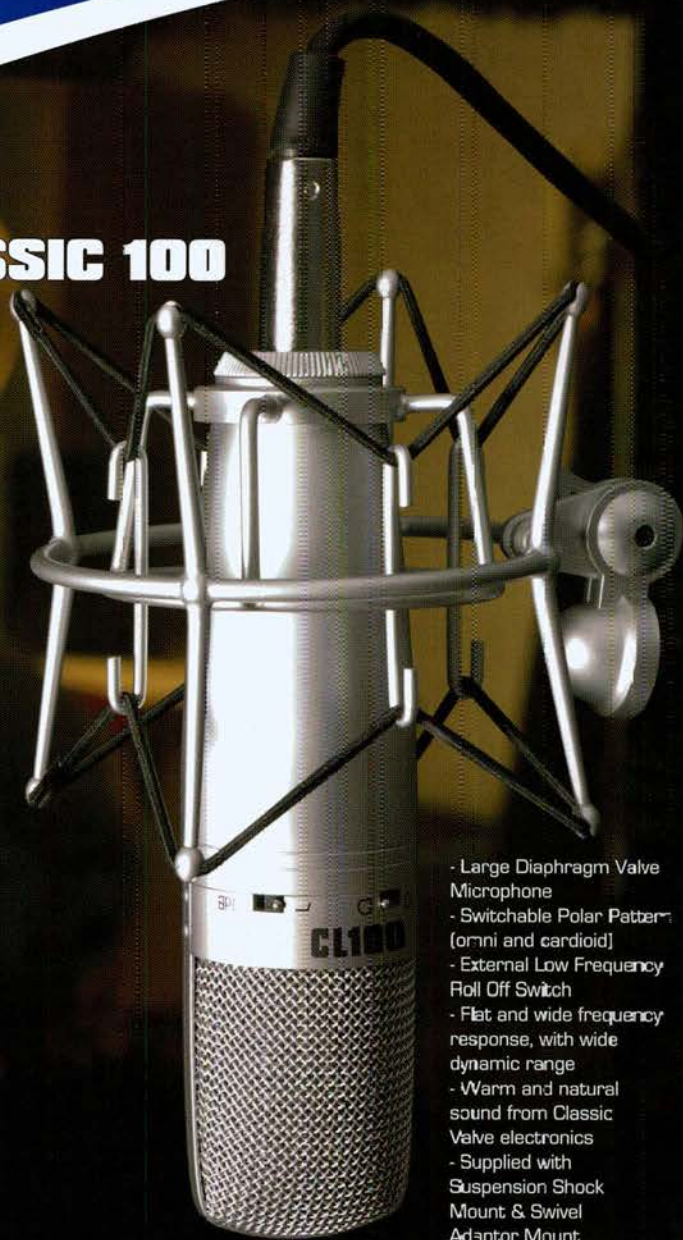
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editorial

\$914 million contested

Our editorial last issue about the size and scale of the entertainment technology industry generated a lot of mail. Surprisingly most people think our estimates were wrong - but conservatively wrong. We'll stick with the \$914 million for now, and maybe carve it a little differently when we do the 2005 review.

The Hour Bank

When we were putting this issue together, we polled our email list about employers. Particularly we wanted to expose the WORST employer in our industry, and praise the BEST. The results were inconclusive. We got plenty of wild stories about bad employers, mainly from former staff. Many were outright defamatory, some downright alarming. Like the serial groper who employs a new young 'executive assistant' every couple of weeks and puts them through some kind of mental torture. He has taken to running recruitment adverts in different media, lest a pattern emerge. In his case, we can only hope some of his victims eventually win in court.

On the positive side, we had some nice affirmations about some nice people. Keep them coming, so we can do something in the future. We know who the good guys are!

The project generated a side issue, namely workers conditions in relation to pay and hours. We had quite a few comments about the practice of 'hour banking'. It is used by some employers to ease the dips and peaks of the working year.

By way of example, in corporate events there is not much happening January and February, and far too much happening in September and October. Banking your hours means the extra time worked in October results in being paid to do nothing in February.

On the surface the scheme has merit, except that it is usually sold to the crew on the basis they have control over when they take their accrued hours. The notion is put forward that a trip to Europe for three months on banked hours is possible.

Our complainants say they get to year two and discover they have not really had any flexibility in deciding their time off, the company has decided it for them.

In reality, done right the scheme could be fair, as long as the company shows the same flexibility as the staff who decide each pay cycle how many hours worked they wish to be paid for, vs. how many they wish to bank.

The sting comes when there is no work, plus no hours banked, because this equals no pay!

On the other hand, working for a government funded performing arts centre, you're paid whether you are busy or not. In some cases, the penalty loadings are VERY sweet!

Training inflames readers

I wrote last issue about some reader resistance to our practice in 2004 of running 9 consecutive pages of training advertising for the Juliusmedia entertainment technology college in each issue.

Good news! For 2005 the practice is no more. We will now run a simple, double page advert. The mission has been accomplished, the college is now cash flow positive, and the message is firmly entrenched. I guess it's a bit like a long election campaign where you get driven nuts by a candidate repeating the same thing, time and time again.

If you put your money into a college, in an untested industry where training wasn't on the agenda, you'd probably do the same thing - if you also owned this magazine!

I do accept the criticism, which unearthed some funny attitudes towards training in general from people already employed within the industry.

Like, 'why do we need training?' and 'the best training is the training I had - on the job'. Easy to say when you have a job, but as soon as the job vaporises, how do you validate your skills? If you are dragged into court to give technical evidence, how do you prove you are 'competent' to do so?

There's a genuine and understandable fear of undertaking a skills assessment. Every time we assessments, we meet people with clammy handshakes. Whether you are sitting an exam, going for a driving test, or being assessed, chances are you'd prefer to avoid the experience. All I can do is to try to reassure anyone faced with a skills assessment that the process is not painful.

I also understand the perception that my relentless promotion of the issue of training is self serving. It is to a degree, however what I said last issue about the government not properly promoting training and traineeships is valid. I had some mail to the effect that maybe the reason why the government isn't promoting traineeships in the industry is because they do not want them. I can assure you that isn't the case.

At the end of the day, I don't mind WHERE you get training, as long as you GET and GIVE some. Please 'buddy' someone at a show or in the studio and teach them whatever you can. Do it as an extension of some formal training they get at a government accredited college or a TAFE.

I've spent over 3 years getting my training college up and running the right way. Thank you for bearing with me while I've done it.

Finally, I promise this will be my last comment on this page about training - at least for a while!

Now, on with the magazine.....

- Julius Grafton



◆ Sennheiser's AudioBeam is able to focus sound like the light beam of a torch. It works with ultra-sound, modulating the audible sound onto an ultrasonic carrier frequency, much like a radio station does, and then emitting this signal via 150 special piezoelectric pressure transducers. Great for museums. www.syntec.com.au



◆ Ashton's Classic 100 is a large diaphragm valve microphone. It comes complete with a switchable polar pattern external low frequency roll off switch and a shock mount for great isolation, along with a heavy duty aluminium carry case. Classic 100 sells for A\$895

www.ashtonmusic.com.au



◆ Bose debut the FreeSpace E4 Series II - an integrated four-zone system providing signal processing, routing and amplification for business music applications. A Power Sharing amplifier distributes a maximum 400 watts of power across the four output zones. Each zone is capable of drawing as little as 1 watt to 400 watts of power. It also schedules programming of up to 64 events. www.bose.com.au

◆ Alto rising - in just 2 years this Italian based audio vendor has launched 150 different products - analog and digital processors, PA speakers, mixers, power amplifiers, and more. Importer Music Link offer a swap warranty. Recently released - AMX compact mixers - starting with a 10 channel mixer with 1000 watt power at A\$129 retail.

www.altoproaudio.com.au

◆ Serge Lacroix won a Neumann KM184 microphone at Sydney outlet, Sound Devices. He is pictured at left, receiving the microphone from Neumann importer Syntec's Bill Kelly.



◆ The new Seaward PAC3760 (right) is a next generation portable appliance tester that powers up appliances to conduct a leakage current test - required by law for appliances with an electronic switch. Simply conducting an insulation test on an appliance with an electronic switch could fail to recognise a fault beyond the switch. The PAC3760 conducts earth bond, insulation and polarity tests, as well as leakage current tests. The unit is designed with simple 3 button operation. Once the user selects the required test, the PAC3760 conducts an automatic sequence of tests.

www.emone.com.au



◆ Mackie's Spike all-inclusive compact recording system is shipping. It includes all of the hardware and software necessary to add 24-bit 96kHz music production to a Mac or PC. Included with the Spike Powered Recording System is the Mackie XD-2 USB Audio/MIDI interface, as well as a copy of Tracktion audio recording and MIDI sequencing software.

www.mackie.com



◆ L-ACOUSTICS have launched KUDO, a new generation line source array system. KUDO stands for K-Louver Modular Directivity Technology United with DOSC waveguide. The revolutionary aspects of KUDO is that you can use it vertically OR horizontally. Try doing that with any other line array! Info from:

www.randomaudio.com.au

news

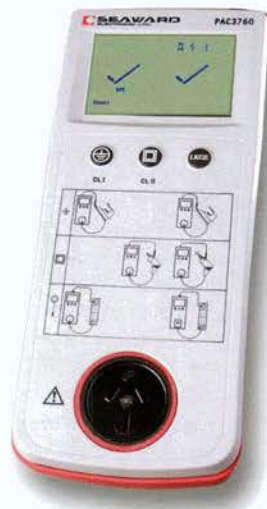


◆ Amber Technology is now the exclusive Australian distributor for DPA Microphones - makers of high performance condenser microphones for stage, recording & broadcast. For the past decade, DPA have been well represented in Australia by Leon Hart from D2a Professional Audio. However, in a uniquely amiable arrangement between all three companies involved, distribution has moved to Amber Technology with Leon Hart also joining Amber. www.ambertech.com.au

◆ Lexicon's Pro Omega Studio is now shipping with Steinberg's Cubase LE - featuring 48 track audio/64 MIDI tracks, up to 8 VST instruments, 2 insert/4 aux sends per channel and ASIO drivers. With the addition of Cubase LE, the Omega Studio contains all of the components necessary to transform a computer into a professional 24-bit recording studio. www.jands.com.au

◆ Tannoy have announced the launch of their very compact model within their V-Series installation range - the V6. V6 is NOT a plastic box but a solidly constructed MDF cabinet with a 6.5" Dual Concentric drive unit. Tannoy boast a very high level of linear cone excursion for increased bass power output.

www.syntec.com.au





Leko Novakovic has been told his firm can't work in the Adelaide Convention Centre. Naturally he is angry.

Locked Out!

Uncompetitive Conduct alleged at Adelaide Convention Centre

Adelaide production company Novatech Productions have complained to the ACCC - the Australian Competition and Consumer Commission - that they have been 'locked out' of Adelaide Convention Centre.

The complaint alleges unfair business practices and anti-competitive behaviour, which are illegal in Australia under the Trade Practices Act.

Novatech Productions owner Leko Novakovic alleges that the Adelaide Convention Centre are preventing his firm undertaking work for a client on their premises. The Adelaide Convention Centre has its own in-house audio visual services division.

The complaint arose when Novatech contacted the Centre to arrange a site inspection to finalise planning for a client quote. The client asked Novatech to provide costings for certain audiovisual and staging elements for an event scheduled in February.

Leko Novakovic says that the

contact at the Centre, a technical planning manager, told him that he would be unable to perform the work at the Centre.

The manager asserted that the Centre has a policy of not allowing external production firms onto the premises, 'unless they are part of a national roadshow'.

Challenged, the technical manager reconfirmed the alleged policy. He stated that Novatech would not be allowed to do the work within the Centre.

Leko Novakovic was then placed in an extremely embarrassing situation, because the technical manager emailed his client - without asking - and advised the client that the Centre 'holds to an inhouse policy regarding the supply of all audiovisual equipment and technical staff (operators).'

"They are doing a disservice to themselves", Leko told CX. "It's clearly anti-competitive"

Leko was incensed that the Centre would communicate this way with his client, an act which limited any option that

Novatech had of working on the event. These options may have included Novatech engaging the Centre on behalf of the client.

Novatech have advised the ACCC that their production rates are lower than those charged by the Centre, and that the Centre's actions may force the client to pay more for production.

"I am really sticking my neck out now, launching this action", he said. "I know if I force the Centre to allow us in, they will make it very hard for us in the future. I imagine we'll be paying high hookup charges, and waiting a long time for services."

Leko Novakovic has taken a brave stand, against a practice which exists elsewhere in the industry in Australia. CX hears many complaints which fizzle as soon as we ask for the complainant to put their name to it.

The ACCC has the power to deliver a range of punitive remedies, orders and solutions. It is alleged that the Centre has made a substantial breach of Part IV of the Trade Practices Act.

Time to stand up

Leko Novakovic deserves a lot of support for having the courage to speak up on what is a growing problem. It's a problem that affects you, even if you don't own a production company. What if your show is hobbled with house operators, not familiar with your content, who are 'imposed' on your client? We've even heard of house operators (not at Adelaide) not allowing touring crew to operate house equipment!

The industry needs to follow Leko, and be ready to report restrictive practices to the ACCC. The ACCC exists to ensure fair practices, which in turn ensure everyone does not pay too much for goods and services.

Meanwhile, these are the ten ways that venues can make it difficult for visiting productions. I must note we are NOT accusing Adelaide of any of these practices.....

1. Make access difficult.
2. Being obstructive in providing information.
3. Not having the venue clear of previous productions at the agreed access time.
4. Not allowing access earlier than allowed if venue is empty - a practice that takes place at all good venues.
5. Charge unrealistic fees for hookup of power and even use of power.
6. Charge unrealistic prices for provision of rigging, even if points exist.
7. Place proprietary rigging points or motors to force you to hire rigging equipment or accessories from them.
8. Leave a house rig set up, and charge excessive fees to have it removed.
9. Force you to have venue staff on duty to "look after the venue" and sit doing nothing, at rates dramatically in excess of industry standard.
10. Mismanage and wrongly allocate radio mic frequencies so your frequencies clash with theirs or others.

All of the above are abhorrent practices.

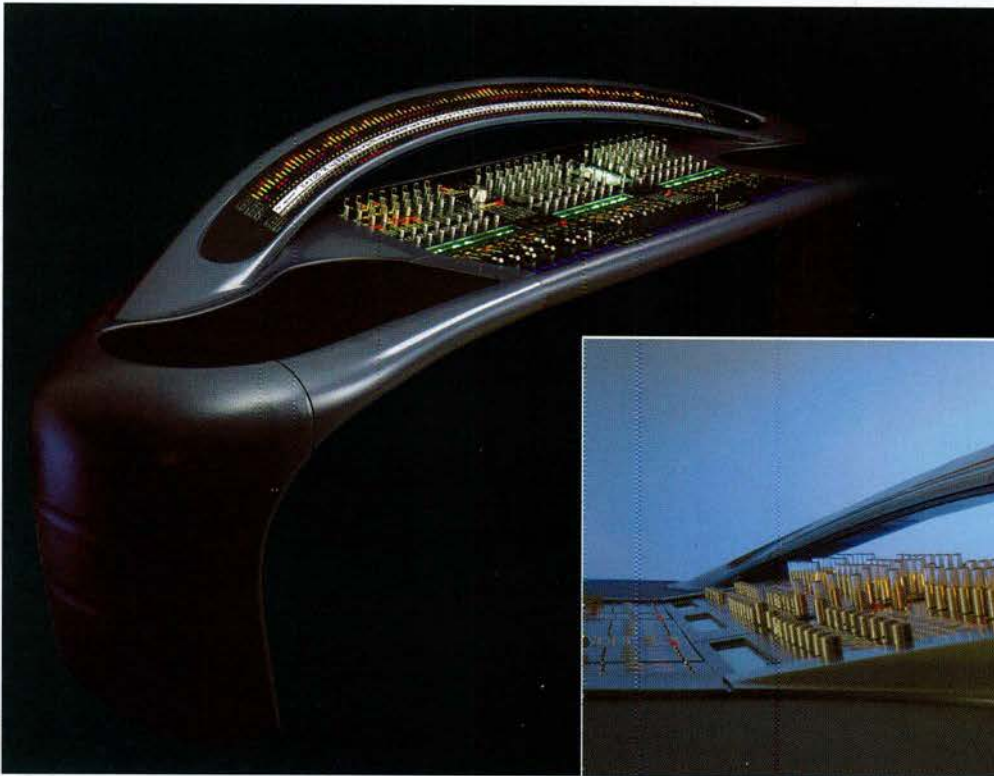
Note that there are examples of well equipped Government funded venues where visiting production companies are allowed to bring in equipment.

Good example: the Sydney Opera House. It is well equipped, professionally staffed and has reasonable policies. Where hirers have chosen to use SOH in-house production, SOH costs are known to have been well and truly industry competitive. It's time to stand up and be counted.

- Julius Grafton

Smart Console

Australian
concept
launched
globally



The Smart console by Smart AV is the culmination of more than a decade's work by U.S. born, Sydney based recording engineer and author Michael Paul Stavrou.

The Smart console has been shown at several trade shows world wide, and is in manufacture at Smart AV in Sydney. It is a large format recording/post console, which will seamlessly interface with several leading engines, such as Logic, Vadis by Klotz, Pyramix, Fairlight QDC and Yamaha's DME 64N and 24N.

The significance of this product can't be under-stated. It is as

complex as any product Fairlight has ever brought to market, and will probably eat \$3m or more before making a profit.

The company is headed by one time Fairlight CEO David Hannay, with former DSP director Joseph Narai. They know this turf well.

One of the things that is revolutionary about the Smart Console is the ARC semi circular array above the work surface, shown above, where every individual channel has select buttons, a LED ramp, and a hand writable digitally stored scribble strip (below, left).

Your hand written channel info

is reproduced on a 62 x 32 vacuum fluorescent display at the main controls (below, right).

Smart say that the console allows 96 or more channels to be operated on a much smaller footprint, with considerably fewer operator movements than any alternate design. You stay sitting in the monitor 'sweet spot'.

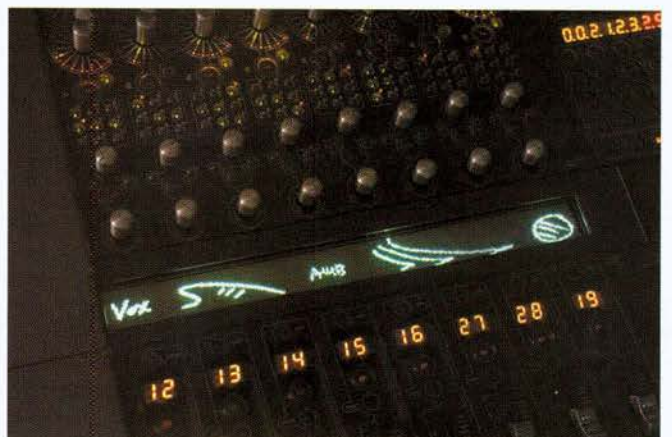
Another unique user interface is the EQ fan, where three fans of EQ can be adjusted at any one time. The EQ fan is a totally different way of accessing EQ. It shows cut and boost as different coloured LEDs, on each selected EQ centre. This way it is possible

to see multiple EQ settings - in theory, very many at one time, on the selected channel.

There's quite some excitement amongst the upper echelons of the audio community about this console. The key to success is going to be whether it can garner sales against Euphonix and SSL.

Mike Stavrou has been workshopping this format for a long time, we recall writing about his ideas for the precursor to this console eight or more years ago. He is a very, very smart human who lectures and writes with authority on professional audio.

- Julius Grafton



A Perfect 10.4

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

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MAC2000



Martin MAC550



Genlyte VL3000



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ShowColour I200



Clay Paky
StageColour I200



X&Y Systems
ZAP Colour



Geni OBY 2000



Studio Due
XS I200



X Spot



Giotto Spot 400



Robe Colour
Spot I200



MSR GOLD

1. A unique gas fill. By using a similar gas fill to that of the MSR single-ended range, Philips has been able to create the same white colour consistency across their whole MSR portfolio. This is extremely important in performances today that use both single-ended and double-ended fixtures. It allows a consistent white colour match on stage for any discharge fixtures being used.

2. Gold end caps and screws. By laminating the end caps and screws with a Gold coating, it allows the cap temperatures to reach a new industry heat of 400°C, almost double the heat tolerance of other lamps available. The Gold end caps provide better current and heat conductivity, which reduces the stress on lamp cap and holders. This means less risk for the end-user, by reducing possible damage to the lamp holder, requiring fewer lamp holder replacements.

3. P3 Technology. With the famous Philips P3 technology, the pinch temperature can be from 450°C to 500°C, depending on lamp type, which is up 150°C higher than the available lamps from other suppliers. The P3 technology eliminates the risk of early failures in the pinch and can be used in any burning position without sacrificing lamp performance.

The Philips MSR Gold range is available now in the following types: 1200W (MSR I200 SA/DE) and 400W (MSR 400 SA/DE). The 700W (MSR 700 SA/DE) will be released in early 2005. To learn more about the Philips MSR Gold lamps visit:

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MSR SA/DE GOLD[™]

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business news



Crestron determined to short circuit AMX

Randy Klien heads Crestron, the control and integration company. He is determined to Crestron-ise the Australian market. It has become a mission, a quest. He has serious intent, with a new distributor - Crestron Control Solutions - gearing up across the country.

Crestron firmly dominates the market for control in most other countries, but have faced strong competition in Australia from AMX. Globally, Crestron did US\$220 million in business last year, while AMX did US\$88 million. Just five years ago, Crestron and AMX had equal market share.

"We have 65 to 70 percent market share world wide. I don't think that knowing we are 3 times bigger than AMX will make a difference here, but our new distributor will".

Crestron Control Solutions is an adjunct of Audio

Telex Communications, a leading pro audio distribution firm with offices in all major states. It is headed by Rod Craig, who has just invested heavily in Crestron distribution.

"Money can come and go, but he (Rod Craig) has created a great name and a reputation. And now he's put Crestron right next to it", Mr Klien told CX.

"It just doesn't do me right to know there was a hole in this market. I'm frustrated. It pisses me off!"

The new venture has stock in 5 cities plus in NZ. "AMX can't do that", Mr. Klien says. "Rod has a national infrastructure, he has committed everything to build additional business. He will do it."

Randy Klien is pictured above left with Warwick Maver, National Sales Manager, and Rod Craig, Chairman of Audio Telex and Crestron Control Solutions.

www.crestron.com.au

briefly.....

◆ **Amber Technology** has recently become a public company - Ambertech Limited. The long established audio distribution firm floated at the end of 2004 and raised A\$8.5 million. The float was oversubscribed.

◆ **Dolby** have mopped up the final parcel of shares in **Lake Technology** after applying to the Supreme Court of NSW for a ruling. The shares were not sold to Dolby by an investor, thought to be former Prime Minister Paul Keating. Mr. Keating lashed out at Dolby's original share offer, describing it as inadequate.

◆ **Staging Connections** parent company **AAV** has seen its value fall by up to 40% in the last year, according to a review of small cap stocks by Network 7 news.

◆ **Martin Professional** expect to lose 40 million DKK for 2004, news which parent firm Schouw & Co describes as a poor result. They say quality issues have delayed two crucial new products coming to market.

◆ The **Australian Music Association** report that pro audio imports grew a healthy 8% in value last year. But the AMA cautions that a new era of deflation due to 'The China Factor' appears to be with us. A 'hasher form of capitalism' is at play, as unit values fall for virtually all goods.

Yamaha forms commercial audio agency - and prices fall as much as 33%

Yamaha Music Australia has announced a new sales and support network for selected Yamaha Commercial Audio products.

Yamaha Australia is a wholly-owned subsidiary of Yamaha Japan, so customers will be purchasing directly from the manufacturer.

The outcome is price reductions by Yamaha Music Australia of up to 33% on its commercial audio products. The agencies are divided into production and sound reinforcement streams, with different products in each.

Yamaha agents include: Sound Devices, Turrumurre Music, Mannys, Musiclub, Lots of Watts, Sound on Stage, Coda Audio, Soundcorp, Rutledge Engineering, Brisbane Sound, and Dominca Sound.

Agents visited Japan (right) recently.



AN ENGINEERS DREAM...

ML3000

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2 (informal) someone or something perceived as wonderful or perfect.



The ML3000 is the most compact VCA console available today – feature-packed with all the tools you need to handle any job, and delivering the best audio quality to finish the package. It is, quite simply, perfect!

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Aviom's A-Net expands

Digital multicore on Cat 5 cable boasts low latency, low cost

Aviom is a new name, the company entered the market with their revolutionary Personal Monitor Mixing System (pictured right), where individual musicians can control 16 channels into their own headsets or in-ear monitors using a neat little mixer. The interconnect, using common Cat 5 cable, is what inspires everyone who has seen the system.

Now Aviom have taken the technology to the next level with a professional adaptation, where up to 64 channels of audio can be sent up or down a Cat 5 cable, which little latency. Latency is the 'L' word for any digital audio application, where things need to be processec, and that takes time. Aviom claim under 1 millisecond for their A-Net.

Unlike Cobranet styled systems, A-Net is just a transport system. No computer is required. You connect an input box at one end, and an output box at the other end. Then run cable. As much as 150 metres between any two boxes.

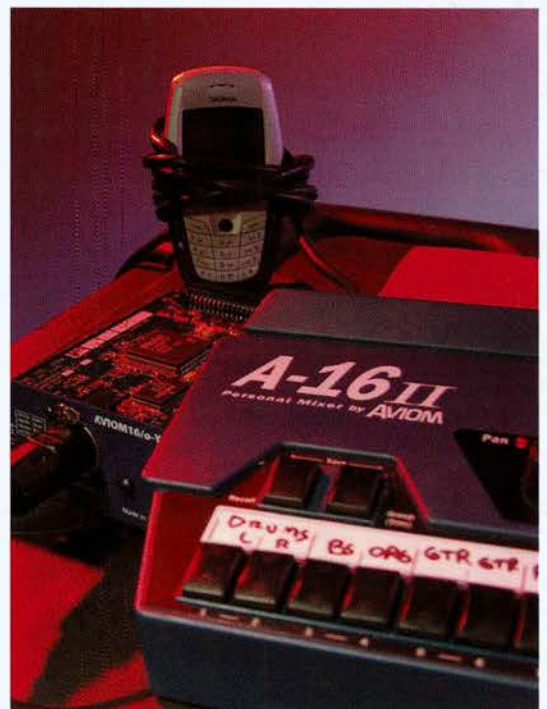
Joel Brzy (pictured above) from Aviom visited CX recently and showed us the system. We decided to test the integrity of audio when subjected to ridiculous interference, so we wrapped a mobile phone with Cat 5 cable, and sent audio through it. No problem.

A-Net is bi-directional, you can run devices in series (daisy chained) or set up a star or distributed network. Aviom do recommend professional and flexible Cat 5 cables be used - not shie dec, but we have run the system on crappy twisted blue stuff here at the office.

A variety of hardware is available, including input, output and even mic input boxes.

It should only be a while before we see this system used for a concert multicore.

www.aviom.com





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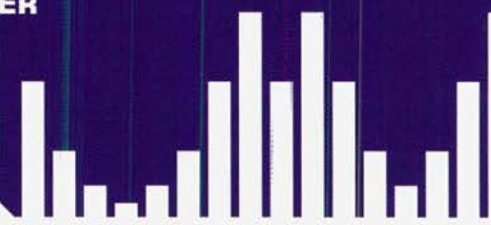
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Group Technologies Round Up DiGiCo

Group Technologies (GT) has been appointed sole distributors of DiGiCo's Digital Live Consoles, including the new D1-Live and the successful D5-Live Series. The PLASA show in the UK provided the backdrop for Melbourne-based Group Technologies' signing with DiGiCo UK. Managing Director of DiGiCo, Bob Doyle, was also in attendance to wish the GT team all the best.

The DiGiCo signing will see GT's line-up of products, including RCF, Nexco, Optocore, Camco, Stagemaker and Quest strengthened by DiGiCo's range of live digital consoles.

"Securing DiGiCo's distribution in Australia is a milestone for our company, and great news for the Australian audio industry" said GT's representative, Adam Iuston. "It is just incredible timing for us as DiGiCo release the new D1-Live system, which we believe to be well-suited to the Australian market".

DiGiCo formed in the UK to develop the D5-Live Digital Mixing System, a console based around a powerful DSP engine utilising Soundtracs hardware and software, but with features dedicated to live sound mixing. D5-Live was the world's first truly open-ended console system, with additional features being made available in new software versions.

The new DiGiCo D1-Live system allows users to own a system based on the D5-Live Console, yet is cost-effective. D1-Live provides the same sonic purity of the D5 and much of the accessible control, in an even more compact frame, at an "Access all Areas" price. The benefits of this system are equally compelling in a host of different applications: the tactile, intuitive, hands-on simplicity of the work surface with its clear, bright backlit TFT touch screens, snapshot controlled fully automated mixing-fader mixing, powerful built-in dynamics and digital effects and complete "recall-ability" of every function.

GT's first sale has been to Johnson Audio Services, who have purchased a D1 and a D5 console.

Owner Bruce Johnson told CX he plans to tour his new D5 world wide with Brit Brat band Oasis this year. Bruce has been their sound engineer of choice for around 5 years, and has signed on to do sound again for a lengthy world tour.

It makes complete sense that he hire himself the console, which would otherwise have been hired from someone else.

Jet monitor engineer Mark Crawley is pictured below with the new D1, which J.A.S. used at Homebake

CX plan to review the D1 shortly, and first impressions show a very compact, friendly work surface with some interesting possibilities when used for stage monitors.

• For more info: go to www.gtaust.com



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Winner, Pro Audio Review
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SMiLE

“The Best Record Never

A look at the highlights of the year 1967 will tell you that Lyndon Johnson was president of the United States; a first-class stamp cost a nickel; *Rolling Stone* magazine published its first issue; Frank Sinatra's "Strangers in the Night" won the Best Record Grammy award; John Lennon and Paul McCartney won for Best Song with "Michelle"; and the Boston Red Sox lost the World Series to the St. Louis Cardinals (some things will never change).

What's missing from that list, however, could have changed how 1967 is remembered, and could have changed musical history. While the Beatles were poised to release *Sgt. Pepper's Lonely Hearts Club Band*, the most ambitious album of the decade to date, Brian Wilson, the Beach Boys' brilliant, troubled leader, was embarking on a production that many feel would have eclipsed even that. Where the Beatles were bringing rock together with English music hall influences and stabs at musical psychedelia at Abbey Road Studios, Wilson was ensconced in Sunset Sound and a few other classic L.A. studios trying to put together an album that would span rock, pop, gothic modal harmonies, barbershop quartet, and Aaron Copland.

SMiLE — dubbed by *Newsweek* and the *New York Times* as the best album that was never released — had attained mythical status. In the wake of 1966's *Pet Sounds*, even the Beatles were awestruck, and like everyone else in the music business, wondering what Wilson would come up with next. *SMiLE* was to have a grand vision, what Wilson once described as "a teenage symphony to God": a sweeping musical journey across America in three symphonic movements, comprising 17 pieces that are as much motifs as songs, running into each other without a pause. Anticipation for *SMiLE* ran high — Capitol Records had printed 400,000 album covers, awaiting delivery of a finished master.

It would be a long wait — that master took 37 years to arrive. Brian Wilson's well-publicized bouts with mental illness, as well as his fellow Beach Boys' own trepidation about moving too far away from what had become an enormously successful hit formula — by 1966, the

Beach Boys had racked up nearly two dozen Top 40 hits, including "I Get Around" and "Help Me Rhonda," all produced by Wilson — conspired to can *SMiLE*. In 1968, after 85 recording sessions, including more than two-dozen for the song "Heroes and Villains" alone, Wilson abandoned *SMiLE*. What had been recorded — bits and pieces and a few complete songs on acetates that Wilson would spend hours reconfiguring and resequencing — was put into storage, seemingly forever.

When Wilson began to come out of his depressive funk in the 1990s, recording his first solo record, *SMiLE* slowly came back on the radar screen. In early 2003, he assembled an 18-piece band and orchestra and did six sold-out and acclaimed live performances of *SMiLE*'s music in London. Then, in April, Wilson and the ensemble went back into the studio — Sunset Studio One in Hollywood, where he and the Beach Boys had originally recorded parts of *Pet Sounds* — and, after 37 years, put *SMiLE*, finally, into recorded form.

The enormity of *SMiLE* as a piece of music is rivaled by its personal meaning to Brian Wilson's painfully sad self. "[*SMiLE*] has been an albatross around Brian's neck for almost forty years," comments Mark Linett, the audio engineer on the new project and on Wilson's first solo record in 1987, and who continued working with Wilson on subsequent projects including boxed sets of nearly all of the Beach Boys' catalog. "Making *SMiLE* has been more than therapeutic for Brian: It represents him facing his own demons, and now at last he's triumphed over them. *SMiLE* isn't just a turning point in his career — it's a turning point in his life."

In the early '80s, after several years as staff engineer at Sunset Sound, Linett moved to Warner Bros. Records' Amigo studios in Los Angeles, where he did sessions with other legends, including Randy Newman, Michael McDonald, Rickie Lee Jones, and Los Lobos. Ironically, the first Beach Boys song he ever worked on was ex-Van Halen lead singer David Lee Roth's hit-single version of "California Girls," which featured Brian's late brother Carl on background vocals.

LEI

by Dan Daley

Made" Is Finally A Reality

Linett went freelance in 1984, when Warner's studios closed. In 1987, when booking a session at Ocean Way (the former Western Recorders), the studio manager said that Brian Wilson had booked a last-minute session at the studio and needed an engineer. Would he be interested? "I said of course I would," Linett recalls, a spur-of-the-moment session that turned into a year's worth of work on Wilson's eponymously titled first solo record. He would go on to supervise the digital remastering of *Pet Sounds*, and later mixed a 5.1 surround version of that record released in 2002.

Wilson and Linett work easily together, and Linett describes himself as a technological bridge for Wilson, with experience from an era of limited analog tracks and expertise with the digital hard-disk recording techniques that so much of Brian Wilson's visions for *SMiLE* prefigured.

"I don't think *SMiLE* is a record that had to wait for Pro Tools to be recorded," Linett says in response to a question. "But [Pro Tools'] ability to randomly and precisely edit pieces of music together would have made making *SMiLE* easier back then. I remember [record label executive] David Anderle telling me stories about how Brian would sit for hours with acetates of sections of 'Heroes and Villians,' scrambling them around, constructing and reconstructing the song over and over again out of little pieces. What began as the tag of one song would sometimes become part of another. In 1963, [Brian] was working in modular fashion — if a song had two

verses and two choruses, he'd only record one of each and copy them, just as we fly in parts today on hard disk recorders. The limits of the technology of the time — 3-track, 4-track tape decks — was getting in the way of what he wanted to accomplish."

(Although Linett adds that Wilson liked the idea of eight tracks: "He could overdub leads and vocals and not have to do them at the same time," he says.)

Wilson and Linett went back to Studio One at Sunset

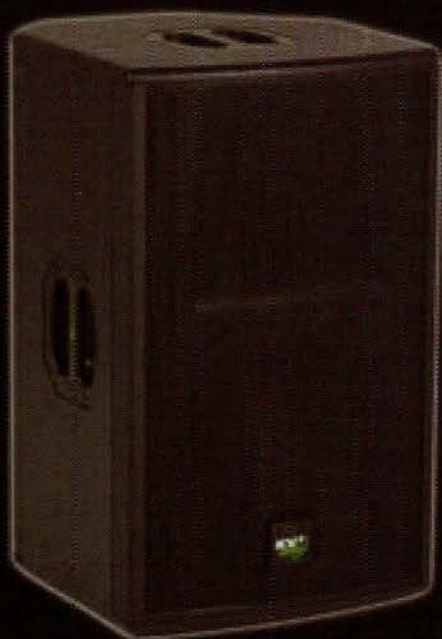




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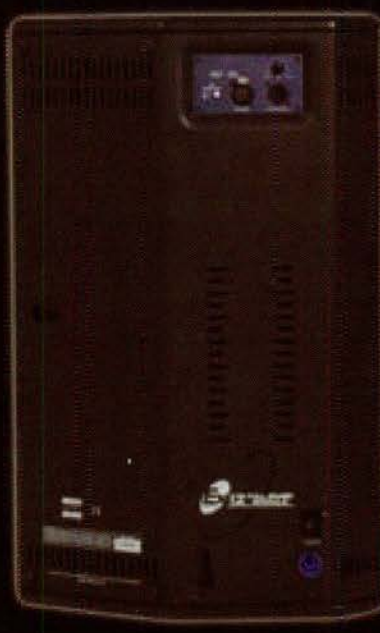
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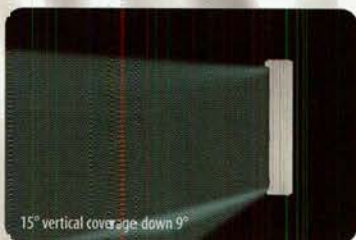


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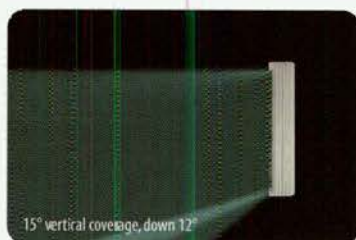




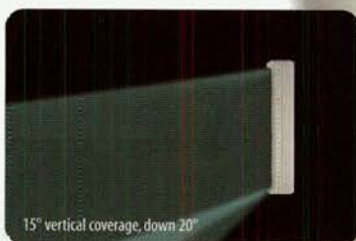
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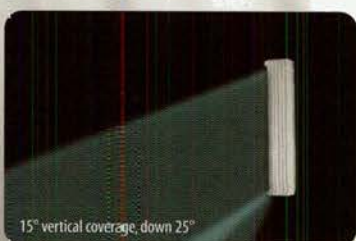
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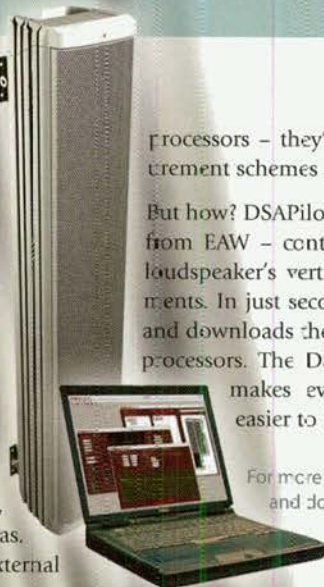
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For more information on the DSA Series visit www.eaw.com and download a pdf of the *DSA technical brief* or call 03-9878-1444.



SMiLE!



Mark Linett, Brian Wilson, and Darian Sahanaja mixing *SMiLE* at Your Place Or Mine Recording



Mark Linett at the console at Sunset Sound

Sound with the band and orchestra that backed the live London performances of *SMiLE*. It was a reprise of the milieu in which Wilson conceived most of his masterpieces: a group of talented musicians playing together in a single room (the 8-piece orchestral section was placed in a single large iso booth). "Brian is a master at creating textures by putting fifteen guys in a studio with no headphones and arranging the music," Linett explains. "If you want to make a Navajo rug, you need to make it on the same kind of loom they used in the 1860s, not in a modern carpet factory. How he created sounds like that [transcended] the technology. It wasn't until we got to eight tracks that the modern idea of recording came about, using isolation to achieve sounds instead of ambience. The ability to cut a basic track and then fix it became a reality with 8-track recording. Brian came from a 3-track world; he created by using great musicians and vocalists and giving them great arrangements to play and sing. When he was working in Western Recorders or Goldstar [Studios], if he turned up a bass drum microphone and got more of six other instruments as a result, that was not a concern. A lot of bleed contributed to the dynamics of the musicians' performance. Once you started isolating them, the whole interaction between musicians and sound changed dramatically. So I think you can see why it wasn't a leap to record *SMiLE* the same way he did 37 years

ago — all live in small studios."

Linett says leakage is a key to the sound of many classic recordings, including the Beach Boys'. So he cautions against overuse of condenser microphones in general on large tracking sessions. "The problem is that they pick up too much [sound]," he says. "We prefer to use dynamic and ribbon microphones. I'll use condensers on a few specific applications, such as the grand piano, or a lone U 47 in the room for the harmonica." Favorite dynamic mics include the redoubtable Shure SM57, the ElectroVoice RE-12 and RE-20, and AKG D112.

The band had been well-rehearsed and seasoned with the material from the London concert performances — in fact, they were able to cut all the basic tracks in just four days. Any Brian Wilson production is defined by its vocals and the fact that to some listeners *SMiLE* sounds vocally indistinguishable from a Beach Boys record — even *SMiLE* songs that were to become hits on other albums, such as "Good Vibrations," "Heroes and Villains," and "Vegetables," retain a distinct Beach Boys timbre on the new album, this despite no Beach Boy except Brian Wilson signing on the tracks. (Carl Wilson died in 1998 of lung cancer; brother Dennis Wilson died in a boating accident over 20 years ago; surviving bandmates Mike Love and Al Jardine remain personally and professional

Brian Wilson — In His Own Words

Brian Wilson's notorious for dark humor, terse responses, and lack of irony is nowhere more evident than in a recent exchange with a *New York Times* reporter, who, when she asked why Wilson had decided to complete *SMiLE* now, was told, "I wanted to get it out before I died." She then asked, "Are you dying?" Wilson replies, simply, "No."

Wilson is deaf in one ear; the result, he says of beatings by his father, Murray, who also managed the Beach Boys early in their career. He continues to suffer from mental illness, including auditory hallucinations. As he told the *Times* in the same interview, "A year ago, I was writing music and I heard

voices at the piano. I just jammed on my head and said, 'Stop, stop, stop.' I take Klonopin and Luvox. They help me relax and keep me from being scared."

For someone who professes to be fearful of surfing, and who has not been to the beach in over a decade, Wilson can still describe the end-summer as enshrined by the Beach Boys as "happy times and good sunshine... going to the beach, going to Disneyland, having fun."

A conversation with *EM* is usually quick and to the point, and he never hesitated when asked why he suddenly stopped work on *SMiLE* 37 years ago: "We were on some bad drugs, but we were also way ahead of

our time." But Wilson can also be light and cheerful. When I asked him how he enjoyed reviving *SMiLE* via digital recording, he was enthusiastic. "I much prefer [working digitally]," he exclaims. "We can go slower and keep all the subtleties of the music hearable. It's all more clear now, more descriptive."

SMiLE's original recordings, which Wilson and Linett referred to prior to the rerecording, suffered compared to digital's sharpness, Wilson acknowledges. "They weren't up to par," he says, but adds that the inspiration was in them "that enabled me and collaborator Van Dyke Parks to create the record's third movement. That didn't

exist back then, so it was very exciting to be able to get that inspiration from the [original] recordings." As was going back to Sunset Sound, which Wilson says brought back many good memories. "It's where we had to go to make *SMiLE*," he says. "It's where all that stuff came from."

When asked about a personal favorite, "Our Prayer," the gothic opening track of *SMiLE*, Wilson credited J.S. Bach as its inspiration. Wilson, the record producer, has two heroes: Phil Spector and George Martin. For someone who had already established himself as a multi-platinum producer by age 24, Wilson's choices are understandable. —Dan Daley

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SMILE!



The API console at Your Place Or Mine Recording

estranged from Wilson.) Wilson sings with the vocal group the Wonderments and other members of his touring band on *SMILE*, and it's apparent that perhaps as much of the Beach Boys' sound lay in Wilson's arrangements as in the individual voices. "You can tell the difference between Brian's falsetto and Carl's on the [original] recordings and [vocalist] Jeff Foskett's on the new album," says Linett. "But that's beside the point. The arrangements are the key. Brian can hear every part of a multi-part harmony in his head, then he would 'deal' them to the various singers. And he can remember what those parts were—which is all the more amazing since some of the original recording of *SMILE* never had vocals." ▶



Brian Wilson and Nick Walusko tracking background vocals.

SMILING TOOLS

BASIC TRACKS

Sunset Sound Studio One — April 13–16, 2004

CONSOLE: custom 64 inputs plus 12-channel stereo

RECORDER: Digidesign Pro Tools HD-2 with 40x48 with Apogee Rosetta, AD-16, and DA-16 converters with the Apogee Big Ben as the master clock. Recorded at 24 bit/88.2kHz

MONITORS: Tannoy SGM-10 with Mastering Labs crossovers

MICS: AKG D-112, kick; SM-56, snare, Royer stereo, overhead; Beyers 500, toms; AKG C414 and 224, percussion; Sennheiser MD42, marimba; Electro-Voice RE-20, parade drum; AKG C-24 or Telefunken 251 pair, piano; Tubetech direct box and RE-2C, electric bass; Altec 639, Neumann U 47, acoustic

bass; Shure SM-57, electric guitars; Electro-Voice RE-11, acoustic guitars; Neumann U 67, violin, viola; Sony C-37, cellos; U 67, woodwind; U 47, trombones, AEA 44c, saxophone; Neumann M 50 pair and U 47, room
OUTBOARD: a pair of dbx 160s on the electric bass—that's it
REVERB: Sunset's tame live chamber just off the control room was used extensively on the drums and percussion with the returns printed to separate tracks.

Vocals and Overdubs

Your Place Or Mine Recording — April–June 2004

CONSOLE: custom API 2488, 36x16x24 with Flying Faders (for monitoring)

MONITORS: Tannoy SGM-10 with Mastering Labs crossovers

MIC PREAMPS: Universal Audio 610 and 610a (tube) the same exact pres used to record most of Brian's records in the '60s
MICS: Neumann U-67, lead and some background vocals; U 47, additional backgrounds. Most of the background vocals were recorded with three to five singers at a time, with the bass voice on its own mic.

OUTBOARD: Fairchild 670 for vocals

Mixdown

Your Place Or Mine Recording — June–July 2004

Linea, Wilson, and keyboardist Darian Sahanaja were able to mix an average of three sections a day. The entire mix with a few recalls took approximately four weeks. It used around 32 outputs from Pro Tools to the API and used

both analog outboard Fairman TMEQ, Lexicon PCM-42, Universal Audio 175a) as well as plug-ins (Universal Audio Puretec, Waves Renaissance EQ and compressors.)

REVERB: In addition to the reverb we printed at the tracking dates, we used several sampled live chambers as well as some sampled springs using both a separate Aktivverb setup and a Sony DRES-777

The sections of each song were individually mixed back to Pro Tools through a DCS 904 A-D converter and monitored with a DCS 954 D-A (all at 88.2/24). Backup mixes were laid down to a separate Nanco system at 96/24. The mixes were then assembled into songs and sequenced as we went in a separate Pro Tools session.

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SMILE!



The band tracking at Sunset Sound



Scott Bennett and Nick Walusko playing celery

[Wilson told me in a subsequent interview — see sidebar — that he prefers to sing sitting down now.]

Linett has a Neumann U 67 that he has used on Wilson for several years, a mic he also used with Paul McCartney and Elton John when they sang on Wilson's current solo album, *Gettin' In Over My Head*. "There's no elaborate method to recording Brian," Linett explains. "I just put up the microphone and a windscreen. Brian is a very natural singer. He knows what to do. For a few songs we used an old Shure 545 on him. That mic is very similar to SM57 and the Beach Boys often used it for lead vocals in the '60s. They have the 545 on for leads and usually a Neumann 47 for harmonies and Brian and Mike Love would often move between the two microphones as the group was singing live, doing both leads and harmonies on the same pass."

"They didn't build background vocals around the lead vocal," he continues. "Actually, the delineation between lead and harmony parts is often vague on *SMILE*. There are lots of ensemble leads."

Listening back to classic Beach Boys records, the double-tracking of lead vocals was often obvious — the imperfect match between tracks was part of the timbral charm of the vocals. It seemed like an opportunity for technology to intrude, either to perfect doubles or to actually do the doubling electronically. But Linett says Wilson did his own doubled vocal tracks and any application of Autotune was minimal, and not for the purpose of perfecting doubles. "If a track is perfectly in tune, it restricts where a vocalist can go," Linett observes. "When the track is perfectly A-440, any imperfection in the vocals becomes [dissonant] and sounds worse than it is; when the track has natural imperfections, other imperfections become part of the palette."

Vocals were recorded using a circa-1963 Fairchild 670 limiter, which Linett points out would never have been used on vocals at that time. "The Fairchild was regarded as a cutting limiter," he says. "Instead they used to use a Universal Audio 77, usually in-line in the buss with a bypass switch." Referring to a catalog from the era, Linett notes that a 670 retailed for \$1,500 — the cost of certain new cars at the time. "And Ampex 3-track cost \$5,100; if you wanted four tracks, it ran you \$6,000. Things have changed a bit, wouldn't you say?"

SMILE was recorded to a Digidesign Pro Tools | HD system running at 88.2 kHz/24-bit. Linett used

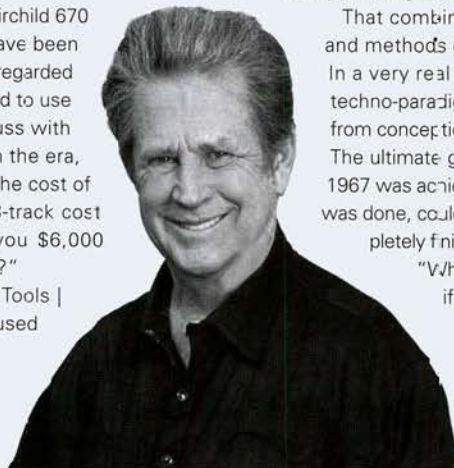
Apogee AD-16 and Rosetta converters and an Apogee Big Ben clock. He is a fervent believer in using quality external clock devices. "That should be the first thing you buy after you get your first DAW," he admonishes. "When I was remixing *Pet Sounds* I was using a Nuendo rig running at 96/24, and I had Digi bring over a Pro Tools system so I could do a direct cut." Regardless of the combination of systems and converters, the biggest difference he found was in the use of onboard versus external clocks. "That's what really opened the soundfile dunnit," he says.

Sunset Sound has a custom 64-input console that uses several API components. That nicely complements the customized 36 X 48 API 2488 console, fitted with Flying Fader automation. Linett has at his home studio, Your Place Or Mine, in Glerdale, CA, where he and Wilson tracked the vocals, did a few other overdubs, and mixed *SMILE*. (Brian Wilson had a home studio in a house on St. Charles, Illinois, where he recorded his *Imagination* LP. He and his family will move to a new home later this year which will have a studio in the basement.) His console is augmented by a vintage Universal Audio sidecar mixer, similar to the one in Western's Studio 3, where Wilson and the Beach Boys cut the majority of their records, including "God Only Knows."

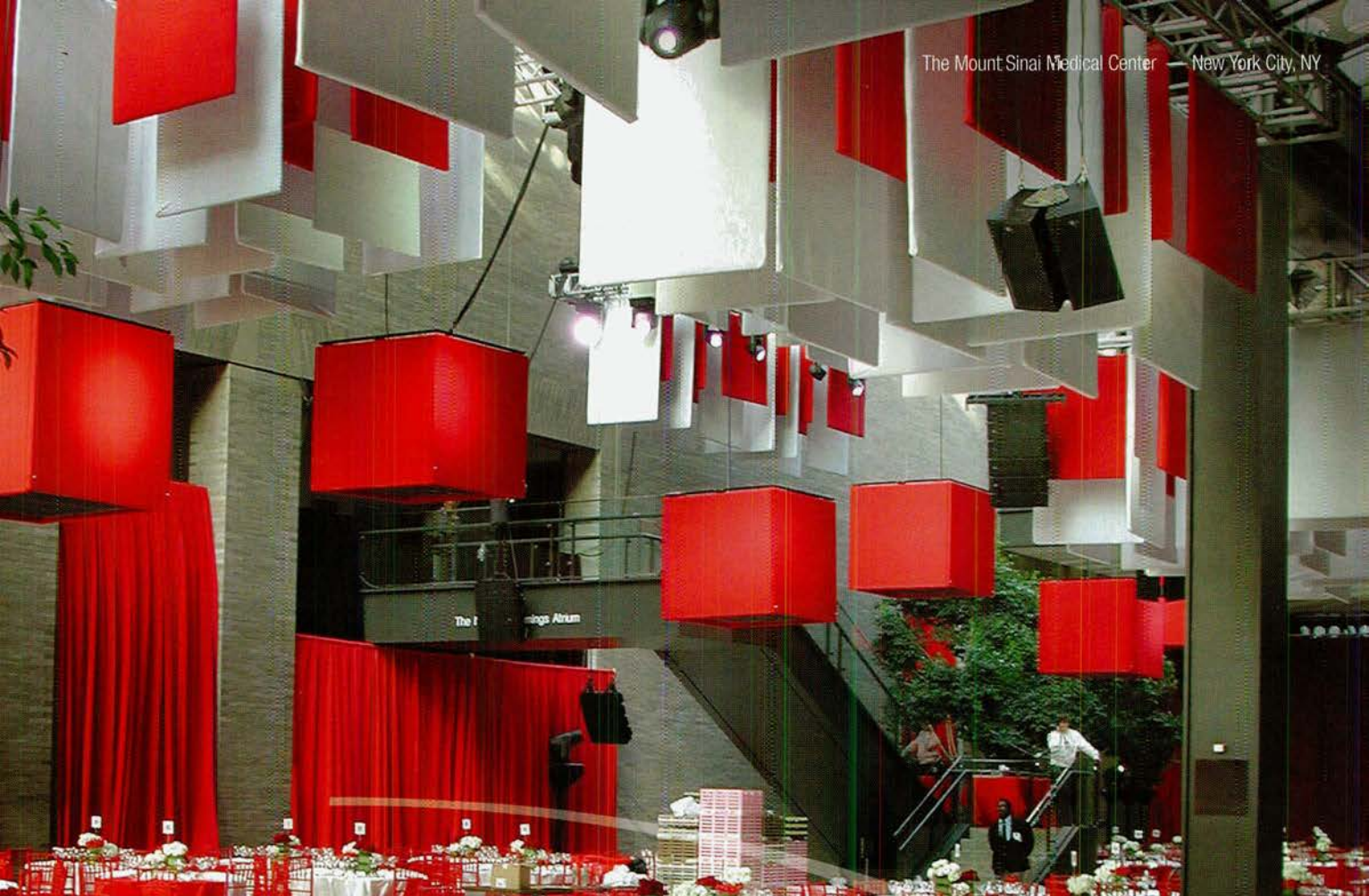
Linett, Wilson, and arranger/bandmember Darian Sahanaja spent nearly a month mixing *SMILE*. The biggest challenge was getting the vocal balances correct, Linett says, as well as the editing challenge of getting all the segues in each of the three movements just right. Simultaneously the trio was auditioning mastering engineers, ultimately choosing Bob Ludwig at Gateway Mastering facility in Maine, with updates on the mixes and the mastering output being exchanged via FTP transfers.

That combination of modern and classic technologies and methods characterized the entire making of *SMILE*. In a very real sense, the record utilizes all of the major techno-paradigm shifts of the nearly 40 years its spans from conception to realization, from 3-track to the internet. The ultimate goal of finishing what Brian Wilson started in 1967 was achieved, but only in retrospect, after the last mix was done, could Linett confirm that. "It wasn't until we completely finished that we knew we had done it," he says.

"When you could see that Brian seemed lighter, as if a very heavy load had been lifted from him. That 600-pound albatross was finally gone."



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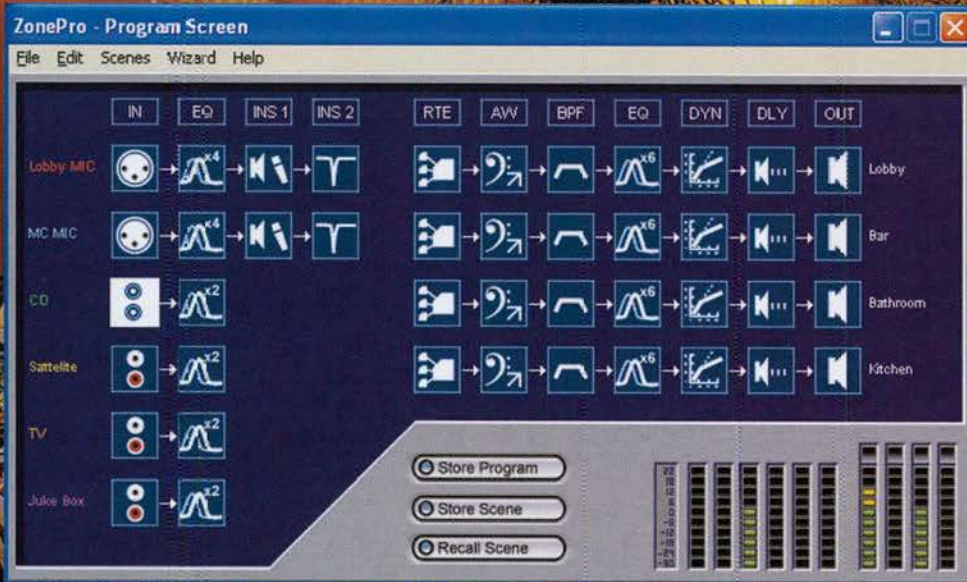


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SMiLE on stage!

By Julius Grafton

Many have said it was the best, the most musical show, they had ever seen



Encore Adulation Encore... It's Brian Wilson - on stage somewhere

The industry grapevine was emphatic that this was to be a most musical and excellent concert. We went and it was. Brian Wilson wrote most of the Beach Boy's hits, then retired amidst rumours of drug abuse and confusion. His Beach Boy brothers died. Another founding member soldiered on, and The Beach Boys still tour today, with a cabaret karaoke greatest hits package complete with bikini babes.

I've seen the current Beach Boys and their show is cheesy and dull. The current Beach Boys version lined up against Brian Wilson and his band brings to mind the difference between The Little River Band with two non founding members verses the version named Birtles Shorrock Goble – the founders, who can't use the name. BSG have a crackerjack line up which delivers the hits they wrote the way they like to play them. The 'other' Little River Band tour using the name and the fame, but it isn't the band as we

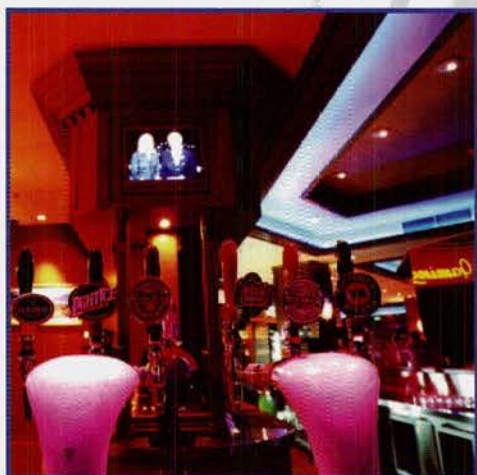
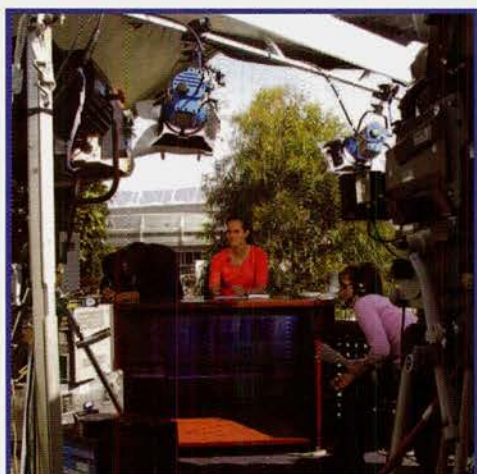
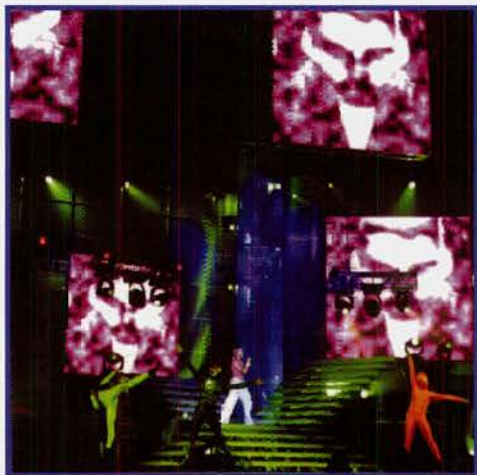
know it – just one guy who owns the name and a bunch of musical staff.

Brian Wilson and BSG are both reclaiming an audience which rightly belongs to them. In both cases, they play smaller venues. For now.

Brian Wilson had 17 musicians on stage with him at the Sydney Opera House concert hall, a venue calibrated for reverberant symphony and unforgiving towards amplified pop and rock. A bewildering number of instruments appeared and were swapped across a crowded stage. Around 60 lines went to Front of House, where San Deigo based engineer Rich Davis mastered the 3,000 knobs on a Midas XL4 and a Venice sub mix console.

The concert ran in two halves, and featured the entire

(please turn the page)



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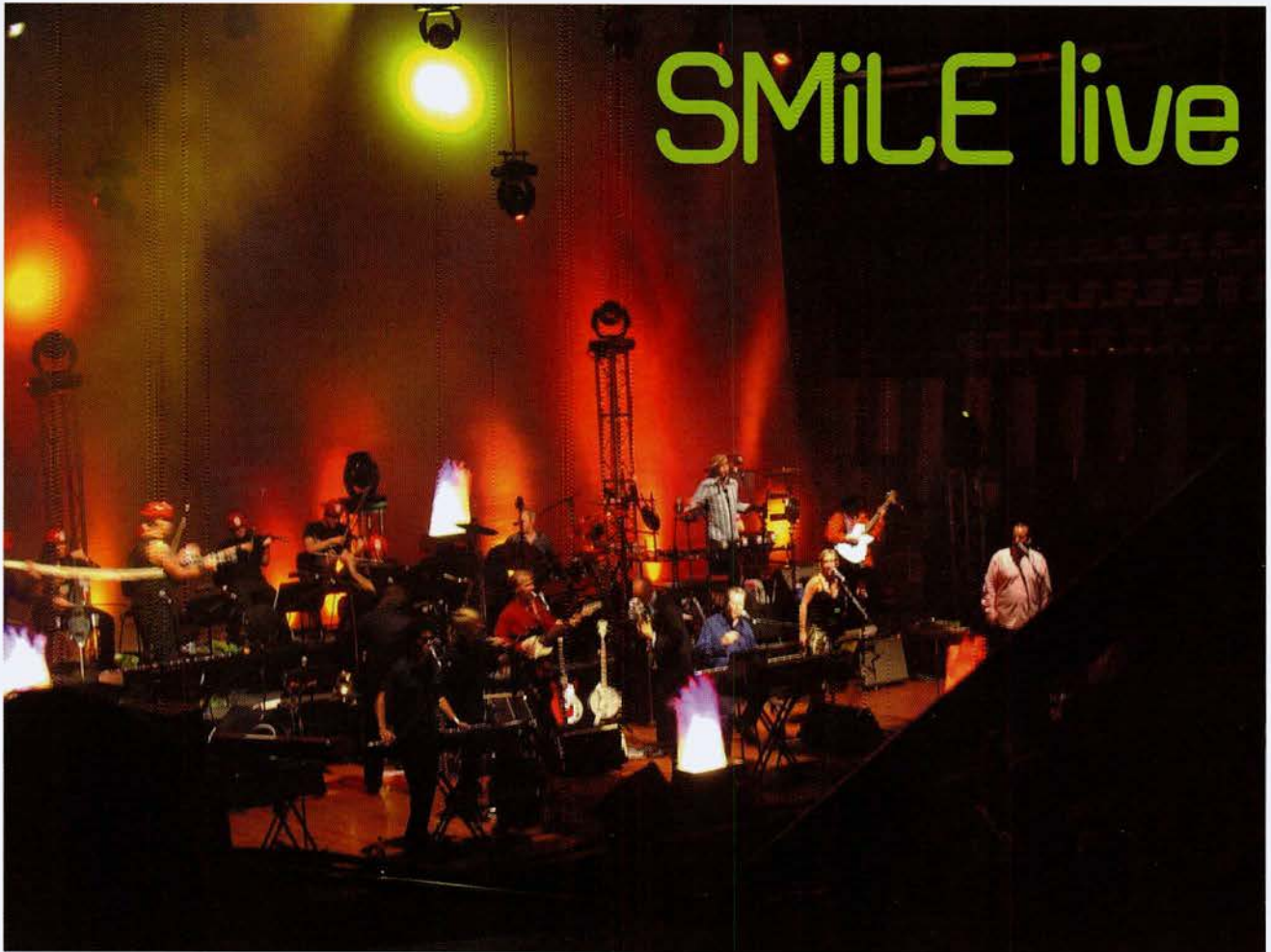
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It was an interesting scene – the band were simply brilliant. Brian Wilson himself was seated in front of a Yamaha electric keyboard with a small LCD outcure at each front corner. He didn't appear to play the keyboard at all. He didn't mention Sydney, or engage in any real dialogue. He sang some, and appeared to direct the band at times.

But the real action was stage right, where musical director and keyboard player Darian Sashanaja lead the band, but never while directly lit. He courted them in, and he signaled the changes – moments when the lighting director Will Twork had the stage dark. This seemed to be some sensitive action designed to make Brian appear in charge. It was weird, but subtle. The reality was that that The Brian was not really with us.

The vocal harmonies were exceptional. The traditional Beach Boy's falsettos came from lead guitarist Jeffrey Foskett.

The band themselves were based on original members of The Wondermints. Sadly, Markus Sandlund, one of the talented cellists from the Stockholm Strings and Horns has been reported missing from Phuket, Thailand. Markus Sandlund and his girlfriend, Sophia, traveled to Thailand after completing the tour in Australia and New Zealand. They were vacationing at the Orchid Beach Resort at Khao Lak (room 112) when the Tsunami hit.

At the time of the tsunami they were at the pool. Sophia was swept away by the flood and was later rescued. She is now back home in Sweden where she is still hospitalized, recovering from injuries. She has not seen Marcus since the wave hit.

On stage there were 11 vocal microphones, and every harmony was in at least 8 parts. At various times there were 4 brass, 3 keyboards (not including Brian Wilson's), 5 strings, vibes, 3 guitarists playing electric, acoustic and 12 strings, bass, percussion, drums and a xylophone.

At one stage there were wooden blocks, hammers, hubcaps, and vegetables like celery, being snapped and chewed for audio.

Sound engineer Rich Davis (pictured, right) is San Diego based, and normally tours with Jimmy Buffett. His mastery of 60 lines from the

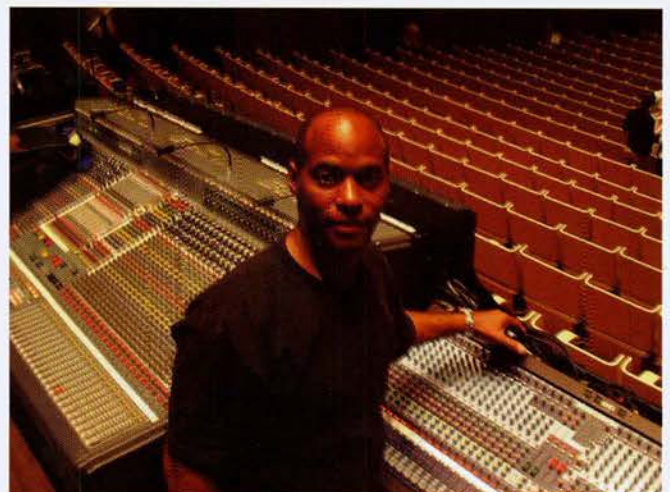
stage, routed through two analogue consoles, with continual changes on personnel and instruments was world class. He managed to engineer a mix that was as perfect as a live mix can be.

The audio system came from Johnson Audio Services and ironically it was the exact same speaker system I had seen days earlier at Homebak in the Domain. There it served 20,000 people, here one tenth the number. The Nexo Geo-T has a lot of credentials.

I wasn't a Brian Wilson fan, but after several songs like Heroes and Villains and Sloop John B, it was abundantly obvious that this was a concert of the highest possible quality.

Lighting Director Will Twork didn't have a lot to work with, but he made it happen with a rig from Chameleon Touring.

NEXT PAGE: How Brian Wilson became detached from reality.



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How Brian Wilson became detached from reality

We at CX are champions for the repressed, who can sometimes take the form of a misled celebrity. We see them dragged out of comfortable hotel beds after just 3 hours sleep for meaningless photo shoots and interviews. We see them fed lies about their careers, given very bad advice and drugs, then dropped stone cold by their record company with calls not returned.

Nothing is sadder than a public face whose manager and PR flack have gone to ground - which they usually do when the money machine sputters to a halt. A year or two later, the accountant is telling them they have a crippling tax bill. They can't get a job, because everyone says 'hey - aren't YOU <insert famous name here>?'

In fact, we feel very, very sympathetic, unlike some people within the industry who seem to get a jolly from FIS - Fallen Idol Syndrome.

So it came to pass that in researching the story of Brian Wilson, a terrible tale of abuse emerged. It's probably one of the worst examples of what can and sometimes does happen to a famous person.

The following text is from the Citizen's Commission on Human Rights, an American body who champion the cause those who fall by the wayside.

With the band's career well on the way, in 1965, at the age of 23, Brian dropped acid for the first time. It was undiluted LSD. After the trip, Brian wrote, "My home life was most tumultuous. Marilyn [his wife] complained that the LSD had changed me... I didn't see it then, but she was right. The change was gradual. Like a slow allergic reaction. I slept later. I was subject to wider, more unpredictable mood swings, crying one minute, laughing hysterically the next for no reason. I ate tremendous amounts of sweets. I refused to be sociable."

As is now known, LSD is unpredictable in its potential effect and is known to induce psychosis. Over the next several years, Wilson withdrew from touring with the Beach Boys and limited his involvement to writing songs. Locking himself in his bedroom for months on end, living on candy bars and milk shakes, he became completely dependent on his family for his spending money and his ability to get around.

The services of Dr. Eugene Landy, a clinical psychologist and reputed "pioneer" in drug treatment, were contracted for most of 1976. Landy's controversial method of "treatment" required that he have "total therapeutic authority over the patient and the patient's environment." Under this program, Brian was also prescribed additional drugs, "psychotropics... tranquilizers...."

The control was too much for The Beach Boys, who eventually fired Landy.

But Brian's drug addiction continued to ruin his life. Landy was engaged again after Brian overdosed on a combination of booze, cocaine and psychoactive pills. In January of 1983, orchestrating a plan to "save Brian's life," Landy insisted on total control of all aspects of Brian's life for 18 to 36 months at a cost of nearly half a million dollars. He arranged with The Beach Boys for Brian to be "fired from the group and not given any more money unless he (Brian) agreed to see Landy for 'extensive treatment.'" Landy is quoted as saying, "the success of 24-hour therapy rests on the extent to which the therapeutic team can exert control over every aspect of the patient's life...." to "... totally disrupt the privacy of their patient's lives, gaining complete control over every aspect of their physical, personal, social and sexual environments."

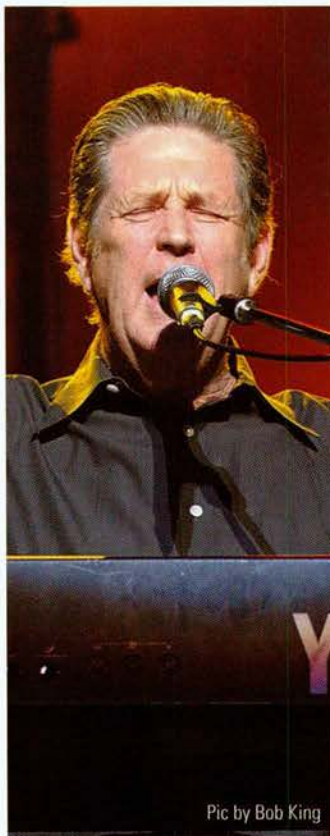
Between 1983 and 1986, Landy and his team of assistants looked after Brian while sharing his lifestyle for a fee of some \$420,000 annually. Two years later, when Landy requested even more money, a desperate Carl Wilson gave away 25 percent of Brian's publishing royalties to cover the costs of continuing the program.

By 1986, everything began to unravel for Landy. He was accused of being a "Svengali*" who was holding Brian captive." It was discovered that he was writing songs with Brian as "part of his therapy," not to be given to The Beach Boys, but for Landy's own personal gain. After The Beach Boys cut off the money, Dr. Landy got Brian to sign with him to do a solo album. During the songwriting for this album, Brian's longtime songwriting partner Gary Usher reported that during their time together, Brian told him that he was "... a goddamned prisoner... I have no hope of escape." Gary turned over his detailed diary to the Attorney General's office, which had already begun to investigate Landy.

In February 1988, the California Board of Medical Quality charged Dr. Landy with ethical and license code violations. These charged violations amounted to the moral and spiritual rape of Brian Wilson. Landy gave up his license to practice for two years. When he requested reinstatement in 1992, the Board opposed it.

As part of a battle to control Brian's estate in 1990, his daughter told Rolling Stone, "I think that Dr. Landy has really taken advantage, no question about it. When my dad has been off drugs, he's whispered in people's ears, like, 'He's really got control of me. I'm afraid to leave him. I'm afraid.'"

In 1992, a lawsuit filed against Landy by the Beach Boys and Brian's mother, resulted in the barring of Landy from Brian's life. (*Thanks to C.C.H.R. for text.*)



Pic by Bob King

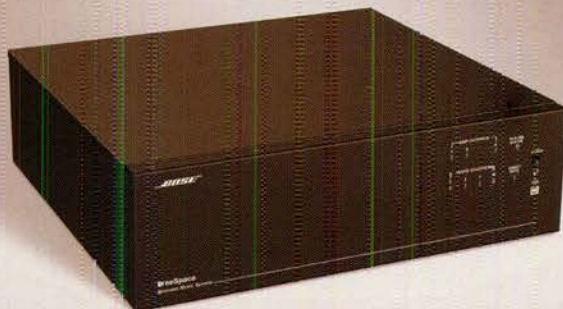
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Yamaha PM5D

The next generation live mixing console from Yamaha.
Julius Grafton investigates.....

We were lucky enough to have a demo PM5D here at Juliusmedia college for our Advanced Audio Mix course. It enabled us, and our students, to pour over the features and have hands on the console for three days.

The console featured in a course called that we call Mix Masterclass 1, and which is officially a Unit of Competency called Operate Sound Mixing Console. Across the course the six students learned on a Midas Verona, and an Allen and Heath ML 5000. The PM5D was the star attraction.

The way we audition and train on a console is to pipe in a live multitrack from our Mackie SDR 24. It gives the random feel of a live gig, and you can press the stop button when it is all too much! We have a collection of excellent live cuts by some famous performers who shall remain nameless, lest their management send us a writ.

Live Digital Mixing Consoles (LDMC's) now seem to come in two flavours. The larger brother to the PM5D is the PM1D, and it is essentially a control surface. All the audio is done outboard, the console is connected to the audio racks via a proprietary digital multicore, or an optional fibre optic multicore. This is the same general approach that Euphonix, DiGiCo and Innovason all take.

Last issue we reviewed the sweet Mackie TT24 LDMC, which shares the traditional approach taken by Yamaha with the PM5D. That is, all the audio processing is done in the console - indeed the drive computer is in there too.

This makes PM5D (and TT24) just like a traditional mixing console, in that you need to run a common analogue multicore down to the mix position from the stage. With the price of digital multicores falling (think: Aviom) then the choice becomes a question of what is most convenient.

Yamaha let you go in and out of PM5D digitally, via optional cards that can interface with an external digital multicore.

PM5D comes in two flavours, something that initially confused me. They were taking in technical terms about recallable head amps when what they really meant is quite simple.

The standard model, the PM5D, was not the one we reviewed. We had the extra cost PM5D RH model. It costs more, but has less parts on the external, because it does not have a row of traditional input gain controls along the top of the fascia. It also doesn't have ring-tip-sleeve jacks under every XLR connector. The standard console has these things.

The RH model is the one you buy when you are doing sound reinforcement made up of different



shows and different bands on the one bill, because it lets you digitally set and recall the input gain 'head amp' for each channel. The standard model needs you to go and set each input gain the same way you would with a normal analogue console.

Why the difference?

Imagine you've got a mix set up for an act, but you have to go and set all 48 input gain controls manually before you can really do anything. This is because a digital input (the analogue to digital converter) is not forgiving of being overloaded. It will crack and spack in a very not nice way.

On the optional FH model, the row of input gain controls disappears as does the possibility of inserting something into the input before the AD

(please turn the page)

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PM5D-RH LDMC



converter. So there are no RTS jacks under the XLR's on the back. In fact, the back panel layout is different - the standard console has 48 XLR's and jacks all in a line. The RH has the XLR's clustered, as you can see in the photo on the next page.

Which console for you? If you have a church or somewhere you are not likely to change over a band, go for the plain model. Everyone else should get the RH.

Out back, there are connections for most everything, including console cascade. You can hook a DM 2000, or even an 02R96 alongside. Or more PM5D consoles.

This steps around the inability of the PM5D to accept more than 48 mono, plus 4 stereo inputs. There are 24 faders for the mono inputs on the console, to get to the next 24, you hit the flip button.

Something we like: The Alternative Layer. And I'm not talking about the hippy from Nimbin..... You can select the rotary encoders just above channel faders so they are gain controls for the alternative 24 channels not on your main 100 mm channel faders. Because they are rotary encoders, with the circle of little LED's around them, they give a fast

visual impression of where that channel is at.

Something else we like a lot: you can switch the 8 group master or sub master faders (call them what you like) so they control channels 25 - 32; or 33 - 40, or even 41 - 48. It's a neat way of giving more control if needed, at the press of a button

Those eight faders are most likely to be used as DCA masters, which means Direct Control Amplifiers. These are the digital version of a VCA master; where control over the channel moves to the centre of the console, to an assigned master.

Finding out everything the PM5D can do without referring to the 350 page manual is a fun sport, we discovered it doesn't have dynamic automation like the DM 2000, which is designed so you can record a track and make fader changes which are recalled to time code.

Instead the PM5D has scene automation where you can assign fade times to faders as part of a single scene. Most scene changes on LDMC's are snapshot, meaning all the settings, including the channel faders, snap to the saved setting and then wait for you to do something.

PM5D does extend this with timed fades. It has an apparent abundance of scene memory, able to store 500.

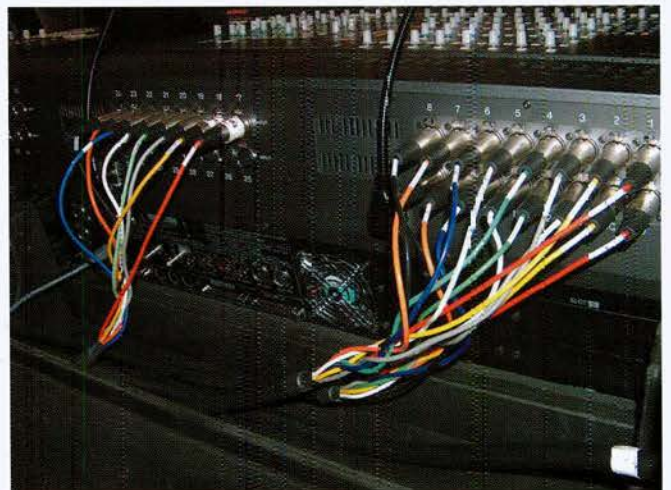
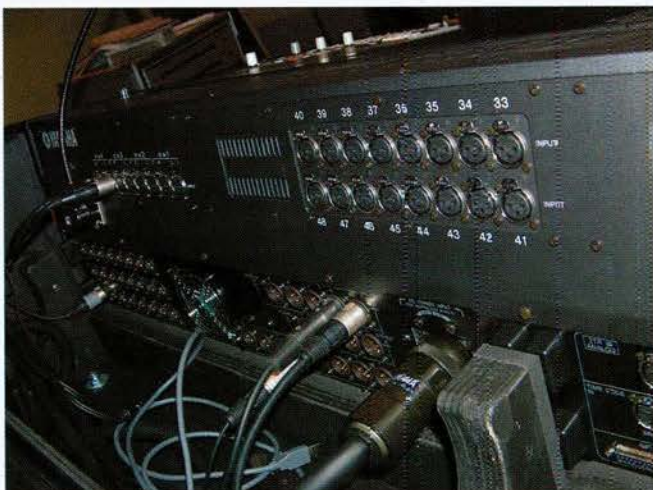
We timed the bootup at 25 seconds, which is not unreasonable.

One little thing that sucks: the mouse connection is right at the front pointing out. We had a USB to PS2 adaptor that made the assembly at risk of snapping. The test desk came in a groovy case with a pull out, illuminated keyboard.

Using PM5D for foldback is a snap, you just do it. No need to reset the software. The 24 mixes are all there, you can use it like a normal analogue foldback desk, or assign each mix (serd) so that the channel faders affect it. This is fast and intuitive. There are only 12 graphic equalisers, which probably reflects reality, since most onstage monitor systems have a bunch of in-ear sends which don't need EQ anyway.

We found the desk intuitive. Our students were comfortable with the idea of mixing on the PM5D - and some of them had only mixed on a GL 2200 at the start of the week!

Verdict: more please! We like it. But don't expect too much change from 150k. •



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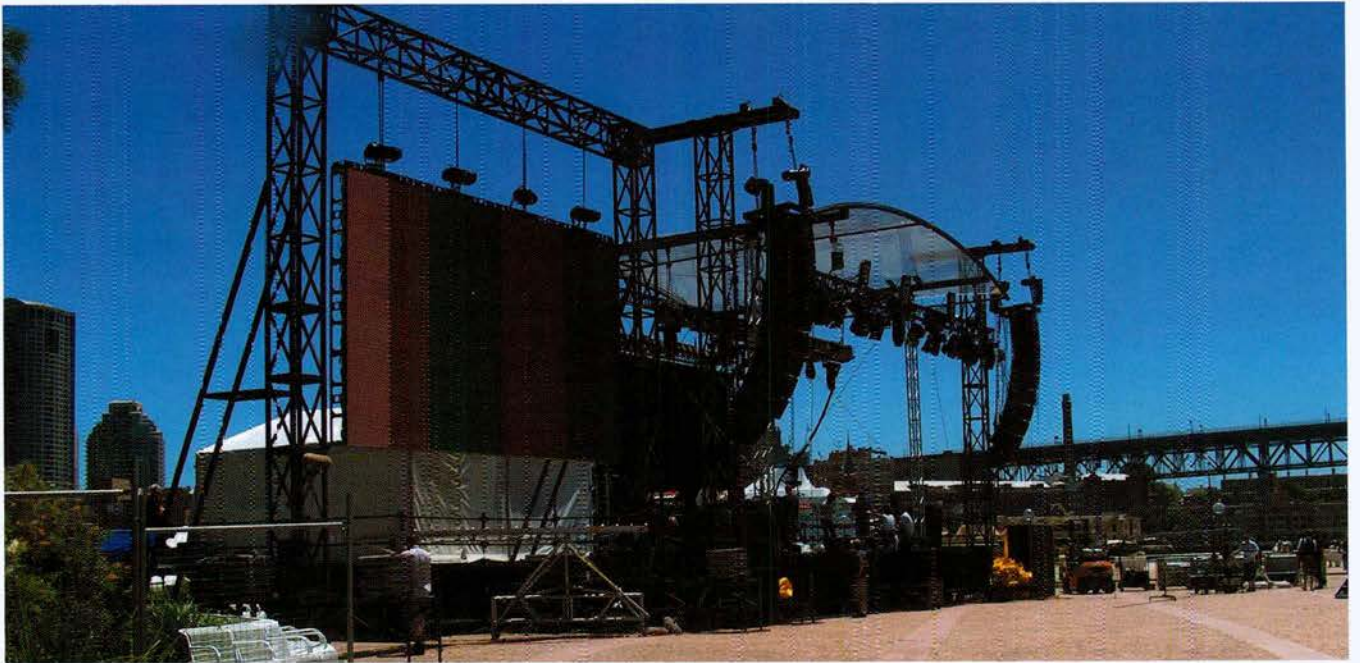
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Industry Pulls Together for Tsunami TV show

The Entertainment industry is fantastic at pulling together in a time of need. Australia's three commercial TV networks combined for the first time to stage and televise a fund raiser for the victims of the Tsunami. Over \$20 million was raised.

The idea came from the unit that produces Sunrise on Channel 7, and that network started the ball rolling.

Rancy Fansz (pictured at bottom, right) from Day 2 Night was called in by 7 to help put together the live technical side of the show, which was held on the Sydney Opera House forecourt - an outdoor venue good for about 6000 paying punters.

Rancy helped pull together the team who ran the event. A long list of crew credits is on the next page. Bill Richardson supervised the live production and the site, with virtually everything donated.

The show itself was made for TV, and it was really an old fashioned fund raiser where the majority of the action comprised live readouts of significant donations. Some donors were actually physically at the call centre, which was at Teltra Dome in Melbourne, to give their donation pledges on camera. Others called in.

In between the live crosses to the donation centre in Melbourne came eight live band segments, where each band performed one number.

The first band, Noiseworks, actually played 3 songs, with the final song becoming the first to be televised.

Alongside the stage was a 9m x 5m LED screen from Technica Direction Co, which carried the TV

feed for the live audience. The screen was made up of 144 Barco D7 tiles which are outdoor rated. TDC have 220 of these tiles, plus another 250 i10 tiles which are not outdoor rated. These were used recently for the Australian Idol finale, also at the Opera House, and were subjected to a drenching rain. After being dried, they worked fine.

Rain was not on the agenda for this show the setup ran according to a hastily constructed schedule. Sydney Opera House rep Chris Burn marvelled how a show which was complex could be put together with days, not months, of preparation. "Things change at the last minute anyway," he commented, "so four

months of planning sometimes is too much!"

Bill Richardson and Chris Burn reflected on what a show like this would cost to stage if everyone was being paid, and arrived at about \$250,000 before you added on the costs of the TV networks and the bands which would be astronomical.

Because the forecourt of the Opera House is limited to 6,000 punters, a concert like this would not be financially viable for a single night, "unless the act are recording a DVD and want the location", says Chris. "It needs two nights to pay off".

Live Audio was donated by Jands Production (please turn the page)



AustralAsian Music Industry Directory



Our new January 2005 AustralAsian Music Industry Directory hits the streets on January 20th and is available in both print and online formats, with fortnightly updates to the online version. It's the only Directory for the music business in Australia and New Zealand, constantly updated to be correct, current and comprehensive. Containing all your music industry contacts, with 70+ sections the Directory includes:

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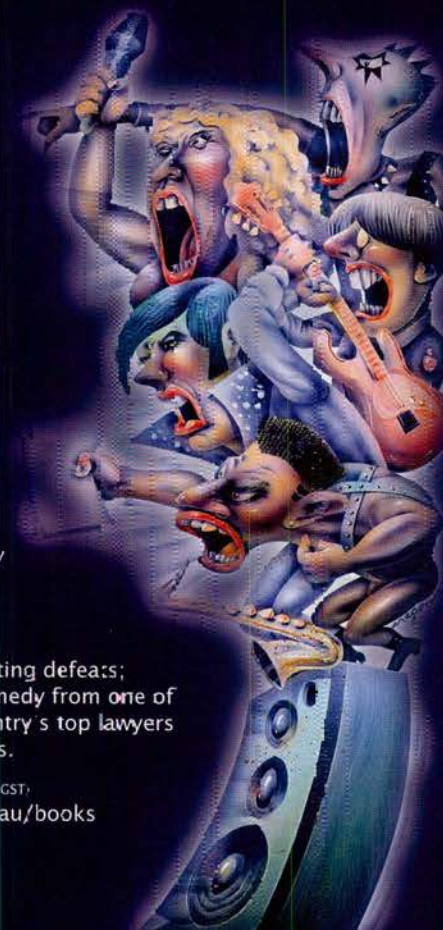
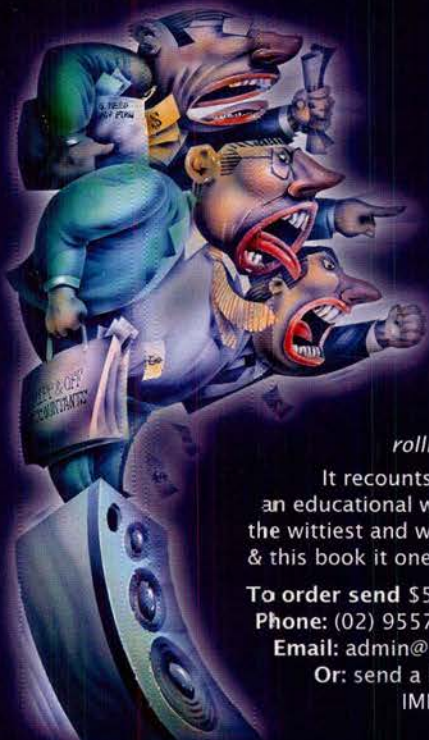
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(Above, Mugging for the camera. Bill Richardson, Iain Reed, Chris Barm and Michael Hasset.
(Below) Andy McKeown and Simon 'Davros' Bianchi at the monitor console.

tion Services, who installed a V-Disc line array along with Midas consoles and a full stage monitor rig. JPS have an excellent reputation for well presented equipment and professionalism, and this show bore that up.

Over in the TV compound, Nancy Franz assisted John Simpson with the band audio for broadcast mix, in the Norwegian Productions truck.

The three TV networks worked together to broadcast the event, and the atmosphere on the ground was terrific.

320C Lighting donated their services - we have a separate story on that in the LX section towards the back of this issue.

There's a long list of credits below, showing the people who donated time and equipment in Sydney. We saw that the telecast from the Telstra Dome also was very well put together, and there clearly were a lot of people donating time and equipment down there. Unfortunately we were unable to get a list, although the Melbourne donors were briefly credited during the broadcast.

A music industry benefit for the victims called Wave Relief was planned for Sydney at the end of January, along with concerts across Australia.

- Julius Grafton



People who donated time and/or equipment

The three TV networks. 7,9,10

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Title	Name	Band Coordinators	Yoko Shimizu Yale Cohn Anne Haebich
Host	David Koch	Band Assistants	Kelly Kearney Rob Morris
Host	Mel Doyle	Channel Nine Links	Alan Smedley Barry Sutherland
Host	Larry Emdur	Backline technician	Billy Hibben Jarrod Mitchell Ivan Ordenes
Reporter B/Stage	Richard Wilkins	Sydney Opera house	Event manager: Chris Burn Director Perf Art: Sue Hunt
Roving Reporter	Gretef Killeen	Site Crew	Greg Moralis Nat Watson
Ch 7 OB Supervisor	Brett Ward	TDC	Michael Hasset Toby Waley Peter Bennett Nadine Newell Ziggy Zigger
Global OB Sup	Marc Segar	Jands	John 'Ozzie' Vasey Jim Sraw Mats Franz Paul Schofield Andrew McKeown Nick Giameos Chris Iland Tim Seconi
Unit Manager	Dave Masala	32 Hundred Lighting	Iain Reed LD Board Operator: Richard Neville LX Systems: Clint Dulieu Sun Gun: Anthony Sweetman Assist Syst: Martin Bez Sun Gun: James Crittenden Host stage assist: John Tiswell Spot op: Stuart Davis Spot op: Greg Davis
Unit Manager	Barbara Ruicens		
Producer	David Walters		
Director	Graham Rowlands		
Vision Switcher	Troy King		
Director's Assistant	Vanessa Field		
Floor Manager Bands	Kerri Wilkinson		
Floor Manager Host	Les Taylor		
FM Assist with RW	Tony Chalmers		
FM Assist with GK	Ben De Palo		
Staging 1	Damian Fox		
Staging 2	Nathan McElligot		
Staging 3	Frank Cuddy		
Staging 4	Oliver Gibson		
Staging 5	Michael Tegg		
Staging 6	Mark Elliott		
Staging 7	Jason Makin		
Crane 1	Duncan Barrett		
Crane 2	John Tarrant		
Comms	Jim Mortimer		
Comms	Phil Gange		
Technical Director	Helen Lloyd		
OB Engineer	Ian Dyer		
CCU / Engineer	Steve Ransom		
CCU	Andrew Tukin		
CCU	Dave Lewis		
CCU	Geoff Southam		
TV Lighting	Shannon Ryan		
Audio Supervisor	Randy Franz		
Audio Director/ Bands	John Simpson		
Audio Director/ TV	Tony Koveos		
FOH Audio	Simon Hardiman		
Monitor Audio	Simon 'Davros' Blanch		
AA1 Hosts	Peter Hunter		
AA2 with RW	Phil Hatezic		
AA3 with GK	Russell O'Brien		
Audio Asst	Ken Fryer		
Camera 1 - Concert c/up	John Abbott		
Camera 2 - Concert w/shot	Terry Chigwidden		
Camera 3 - Pit	Mick Healey		
Camera 4 - Crane	Chris Bitcon		
Camera 5 - H/H C/L	Stewart Worlsey		
Camera 6 - H/H C/R	Steve Gray		
Camera 7 - Steadicam	Jason Ewart		
Camera 8 - Crane	Ross Schumacher		
Camera 9 - Dressing Room	Paul Slater		
Camera 10 - Host C/L	Barry Armstrong		
Camera 11 - Host C/C	Anthony Thomlinson		
Camera 12 - Host C/R	Mick Turski		
Camera 13 - AMP	Ross Parry		
Camera 14 - Chopper	Jason Wotherspoon		
EVS Operator	Josh Symon		
RF Tech	Rod Brien		
RF Tech	Buddhi Fonseka		
Makeup	Mandy Perkins		
Makeup	Nikki Anderson		
Makeup	Marianna Grillo		
Makeup	Pip Lund		
Runner	Corrinne Jensen		
Production Manager	Bill Richardson		
Segment Producers	Jemma Hamilton Edwina Batholomew		

Security officer Lisa Bolton is a regular at large events in Sydney.



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Roundup



HOMEBAKE

Dawn on Homebake day. The annual festival of Australian music is held at Sydney's Domain each December. Dave Allpress is the audio manager, he works for Johnson Audio Services (right). He is surprisingly bright and relaxed considering he hasn't had breakfast. He is trying to get this truck backstage.

Step one: negotiate with the gate guard. She has already been primed with a random act of kindness on setup day when Dave bought her an ice cream.

Step two: wait and wait some more as a traffic jam winds through the narrow pathways. The Domain is a tree museum, so nothing can be driven onto the grass, unless boards are placed.

Step three: visit outlying stages like the Dome (above) and see the PA unwrapped after a short night.

Step four: about 80



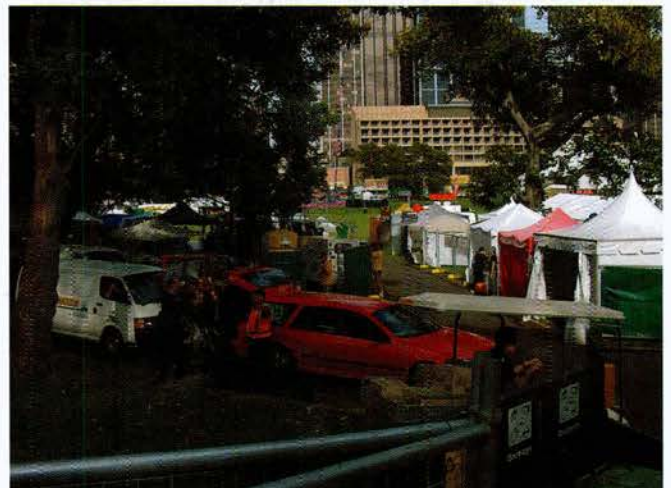
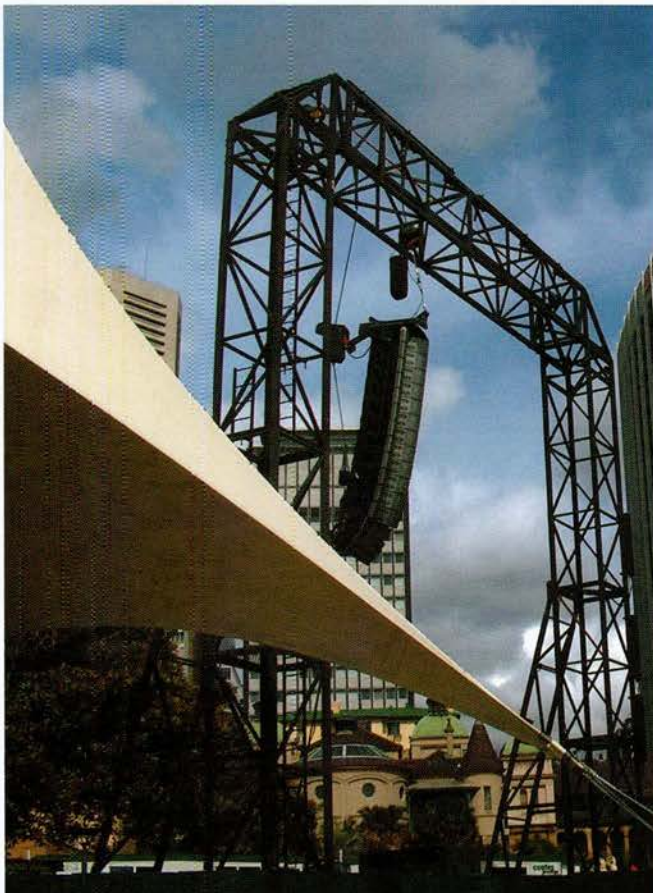
m minutes later, arrive at the main stage (below). Drew Menarc (left) is unwrapping the Geo-T PA (below). While Dave wanders off to find coffee we ponder how tiny, miniscule and innocent the Nano Geo-T looks.

The audio crew spent the day prior setting up the four stages for the festival, which is sold out. Homebake enjoyed its tenth anniversary this year. It is a festival dedicated to Australian bands. It sells out, and 20,000 punters attended.

Dave had left the site at around 8pm the previous night, and needed to chase down some odds and sods – like an NL-8 barrel joiner, to join two speaker leads together. Then there was the obligatory late night curry and red wine dinner with the crew.

While we wait Dave tells me about his most recent tour with Killing He did it was just like an '80's tour, he says, which means a lot of miles. They took a trainee on the road too. "We die his hair and set fire to him", he survived, so that's good".

Dave was off to supervise the Falls Festival after Homebake. Chameleon did the lights for Homebake.



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Roundup

by CFMD



Roasting in the heat....

Shane Bailey from National Audio Systems was on hand with Ralf Zuleeg from d&b audio in Germany, to commission a new system at Cowboy Stadium in Townsville. Olaf DeCeuster - funny enough that's him on the far right mixing Tommy Emmanuel - was the consultant, and the system of 32 Ci90 boxes was installed by Leon Darcy from Audio Sales and Recording in Brisbane.

Summerdayze

The sell out Dance Party was held at Myer Music Bowl. Clifton Productions, headed by Andy Mutton, took care of the lighting, Owen Davison and Rob Nelson from Massteknik were in charge of the video displays and Johnston Audio Services handled the massive sound requirement.

Massteknik, originally formed in Sweden but now operating globally, recently established an Asia Pacific office base in Melbourne.

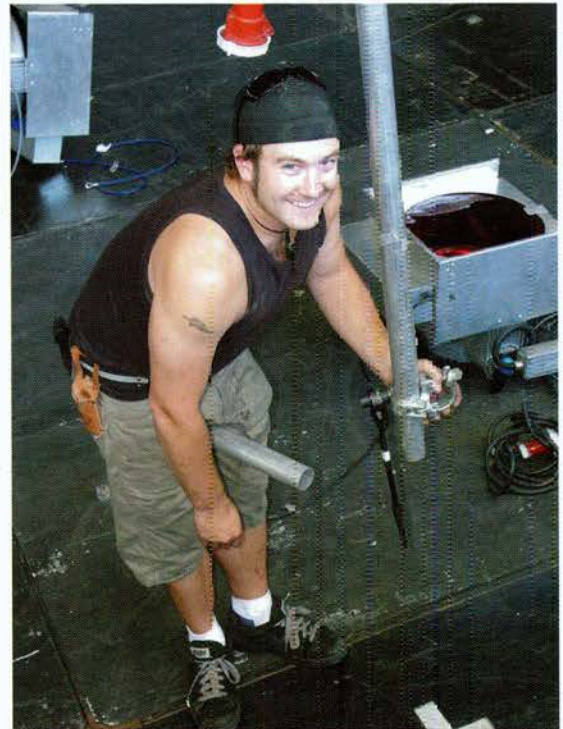


Simon Olafsen manœuvres amongst the sound, lighting and vision at Myer Music Bowl.

CFMD pictures



Matt Downs working with the Clifton crew



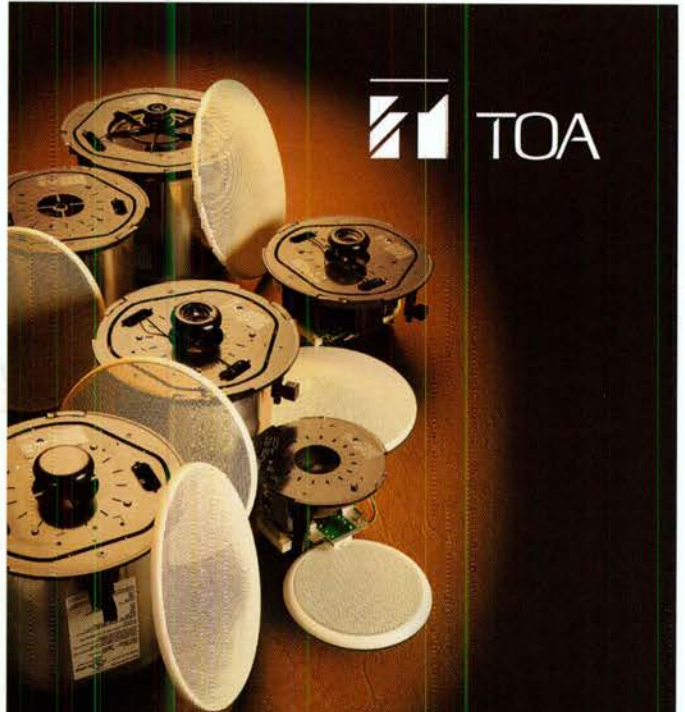
Dayfydd Humphries (above) cracks a piece, while Justin Deutscher (below) does some speaker hookups



Olaf DeCeuster mixing Tommy Emmanuel at The system came from IJS, and featured d&b Q1 and Q10 boxes. Jay van Lieshout was the system engineer for IJS..



Paul Gould ties off the PA at Summerdayze. Rob Nelson (below) at work



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Festival Days

Sydney Festival or Big Day Out. The concepts are similar. Julius Grafton spoke to the production managers.....

John Bayley is the head of production for Sydney Festival. It runs every January, and started in the late 1970's to replace the Waratah Festival. That was a dreary event featuring a parade and a kind of old fashioned exposition in Hyde Park. Sydney Festival on the other hand, is always interesting and is heavy on performing arts.

John had been in the job four years, and is clearly really enjoying it. He works full time, and is assisted by production supervisor Katie Goodhind. They also have a site manager - Iain Morrison - on staff who looks after The Domain.

Sydneysiders will know this is a concert site attached to the Botanical Gardens, the big green belt that has the Opera House at its front corner. The Domain is at the back end of the Gardens site, and it has a large lawn where 50,000 people can watch concerts. "The domain is like a tree and grass museum", John explains.

In 2005 the Festival has spread further out of the city, with a major event at the Olympics site, and more events outside the central business district. The Festival backbone is still two large concerts at the Domain, where each year a stage and a compound is built for summer - and shared by Homebake and other events.

There is the major theatre production which started January 8 - Black Rider - at the Sydney Theatre. This show is unusual in that a crew of 22 including the follow spot operators has flown in. "It's because the show is so fast", John told CX.

"Technical rehearsals take time. There are 4 follow spots and they are never off. There is a Foy Flying system from Vegas, and it comes with a director to oversee the fly sequence. There are trained operators from the Barbican Theatre, and very complex hair and makeup. But there will also be 16 local crew."

It's probably the biggest crew to work in the new Sydney theatre so far. John is very complimentary about the 850 seat venue, and towards the technical director, Marcus Kelson.

Another big ticket item at the Festival is The Lazy Kings, an outdoor event at Sydney Olympic Park - the Olympics precinct.

"The Sydney Opera House forecourt sits 6000 people", John explains, "and we were closing the gates at 6.30pm for a 9pm show. Turning away lots of people breaks our hearts!

Iain Morrison and John Bayley



The show featured an extremely large and complex aria rig, with a central column of trusswork that looks like giant palm leaves. It is 23 metres tall and about 100 metres across. That's BIG.

The event was run for just 3 nights, and it had parades which wind through the park with the way lit by flares. Some of the elements are attached to trucks, which were shipped to Australia on a roll on, roll off ship.

52 French staff toured with the production, with 4 containers of equipment.

Down at the Domain, the stage has been redesigned, with a new canopy tension membrane structure, that is almost wrinkle free. It is also a lot lighter. "It has wonderful lines, a bigger proscenium opening, and more coverage", John says.

Edwin Shirley Staging have replaced all scaffolding structures at the Domain with custom built truss structures. "I couldn't live without them," John says, referring to his contractors. They include Butlers Hire, Chameleon (Lighting) and Coda Audio. "But we do use other contractors, Audio and Reco for example are doing sound down at the Aquashell in Darling Harbour."

The big issues for the Festival Technical Crew are as mundane as compacting soil around old fig trees in the park and as serious as an increasing burden in managing risk.

"I've got a jaundiced view of people who are terribly good at paperwork but don't embrace the concept of risk. There's a real commitment here from senior management about risk management. We go to the bottom and we train event co-coordinators, we empower them. We tell them the show doesn't have to go on. We say no one will yell at you if you make a call we don't like. Katie Goodhind has developed risk templates for the festival - custom made indoor and outdoor ones which are very good."

The other thing we try to do is to link in with a communicative attitude with suppliers, and staff. We have tool box meetings, safe work meetings, and do all the statements. Best of all, if you embrace the philosophy (of safety) then you sleep better at night. Roger Graham is our risk specialist. It's crucial to employ someone who doesn't care what they say."

Matt Doherty is the production manager for the Big Day Out, which has become the most significant outdoor festival in the country. It tours. It has many diverse elements. And it is very successful.

An indicator: they pay fast. Big Day Out is viewed as a safe risk. They aren't tight with money either.

Most significantly, BDO has adopted safety and OH&S as an absolute driver, and they have established policies and procedures which are refined every year.

They have strike teams, and rescue policies. BDO is seen as a training ground for



large scale event management.

These things were all happening well before BDO's well publicised fatality, when an audience member was trampled during the 2001 festival.

That accident led to a coronial inquest, where it was heard by the court that the band, Limp Bizkit, had refused to heed warnings from BDO management that they were inciting the crowd in a dangerous manner.

Matt Doherty was in the firing line. He told CX how at the first show in Auckland the security director alerted him that someone was down in the crowd. Matt asked the band's production manager to stop the band and put on the crowd lights. The guy refused. Singer Fred Durst came over. Durst dragged Matt out on stage by the shirt, and yelled at the crowd that 'the authorities are stopping the show'. He gave Matt the microphone. Matt started calming the crowd then felt water. Durst was standing behind him emptying a bottle over him.

After that, Limp Bizkit were on borrowed time, but still managed to create the incident in Sydney which ended in tragedy.

The same band were involved in the riot at the final Woodstock concert a few years earlier, which ended in much of the actual production equipment being burned.

Durst is nowhere today.

Meantime Matt also owns Australasian Event Services, the company who supply the unique Orbit stage roofs (pictured at top). He has five of them now, and each BDO needs a pair - the stages are side by side.

"Two 80 foot stages side by side wouldn't work, our's are 60'. But if you can get Metallica in there, you can get anyone in!"

The big attraction is that the skin comes down to the floor, so they are virtually weather proof.

Matt works from October each year on BDO, but his offices are in the same place as the BDO owners. Ken West bounces ideas around with Matt, and comes up with some off the wall concepts like the pipe organ that belches flames, and the wheel of death.

BDO has an edge, and that means new and sometimes weird production experiences.

Matt says and his team are split, with veteran Howard Freeman and Nick Marsden working from Melbourne. Matt is assisted by Kate Stewart, who he says manages to 'keep smelly old blokes running'.

Matt started with bands in 1982 in Melbourne, and did monitors. He worked for Jands, and left to do site management.

Aside from BDO, Matt's company supply stages for various events during the year. •

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Small gigs

And smaller minded venues

By Duncan Fry

Over the holiday period I did quite a few small-system gigs for corporate Christmas/end-of-year parties.

Absolutely minimalist production, because (a) the band are a bunch of tight-arses, and (b) the tiny area provided by the venues for the band to setup on didn't come close to being adequate.

Look, we've had amplified music for all of my lifetime and for most of our parents' lifetimes too, so it should come as no surprise to reception centre managements and the like just what's involved when you have a live band. I'm not talking 80's quad 4-way excesses, but just a simple 12" and horn box each side of the stage, plus the occasional sub.

But no, you walk in with a speaker box in each hand and they look at you blankly and mutter "Oh - you've got a PA system? Hmm, that might be a bit of a problem." And they lead you over to a small corner the size of a Jason Recliner, saying, "This is where the band sets up."

Next the drummer walks in carrying the kick drum, and they say, "Oh - you've got drums?" Ditto the keyboard player, "Oh - keyboards..."

I should also point out that the tiny patch of real estate is usually claustrophobically hemmed in with tables, so getting on and off 'stage', to use the term extremely loosely, can be a nightmare. Not to mention the fact that the nearest power point is the other side of the room.

Many, many years ago the band and I rolled up to play at a wedding, and as we started to bring the equipment in, the manager comes scuttling out to meet us.

"Ah, amplifiers, I see," he said. "Well, boys, we have a rule here - only one amplifier per band."

We all stopped what we were doing, looked at each other then rolled around laughing uncontrollably. The guitarist's girlfriend, a gorgeous looking Amazon with a chest that compelled respect, towered over the manager, poked him with her index finger and said, "Don't be so f***ing ridiculous!" then barged her way past him. We set up as we would normally, and never saw him again for the rest of the night!

Even reception venues that have stages can make life interesting. My golden rule for these places is "Never use the onstage power points." The stage power points always seem to have bad Earth, no Earth, are often hanging out of the wall, loose wiring, and make everything hum. Find one somewhere else, check that it has a good Earth/Ground connection, run a decent power lead from it to the stage, and get everyone to use it.

When all the necessary power boards are connected, tape the plug to the socket so it can't easily be pulled out. I also suggest that you switch it on, and tape the switch in the 'on' position as well.

At one gig this Christmas we set everything up in the afternoon, checked it was all working, then turned off the amp and desk and went home. At showtime, nothing worked. I went over to the wall and found that our power lead had been pulled out, and the Christmas tree plugged in instead! I suppose we should have been thankful they didn't pull it out while the band was playing. Hence my gaffer tape advice.

My next plan is to print a yellow and black card saying 'Danger - LIVE POWER - DO NOT TOUCH' and hang it over our main power lead at the wall. That should make them stop and think, at least.

I know everyone says this, but why do the oldest, crankiest, most important old grogans and their wives always sit closest to the band? At the first note they start complaining, eventually lurching to their feet to batter you into submission with their walking sticks and

best. More importantly, these tables of VIPs won't be in the direct firing line of the speakers; instead, they'll have the buffer zone of the dance floor to lessen the impact."

I leaned in closer "Bear in mind these are the people who'll be paying you. You do want to get paid, don't you?"

Suddenly they saw it my way, and never touched them again.

An added bonus for this layout is that the edge of the horn coverage travels just across the front of the stage. Not too close to the microphones to cause feedback problems at reception centre sound levels, but since these guys don't have any stage monitors, it's close enough for the singers to get some idea of how they're singing.

For these gigs the band uses their own small Yamaha mixer, plus a 2 channel power amp, and sometimes they like to have a Sub as well to give the drums, especially the Kick, a bit more grunt. I let them use an old one from the factory, and set things up so one side of the amp runs both 12" and horn boxes, and the other channel runs the Sub.

The trouble with a Sub is that it needs to receive a signal that is only Sub frequencies, otherwise they honk like a foghorn, and everything comes out of the Sub as well as the other two boxes, but sounding nowhere near as good.

You've probably realised by now that we're talking a maximum profit, ultra low overhead operation with these guys, so their budget doesn't run to an active crossover.

Old Dunk's quick and dirty solution worked so well I wonder if anyone else does the same:

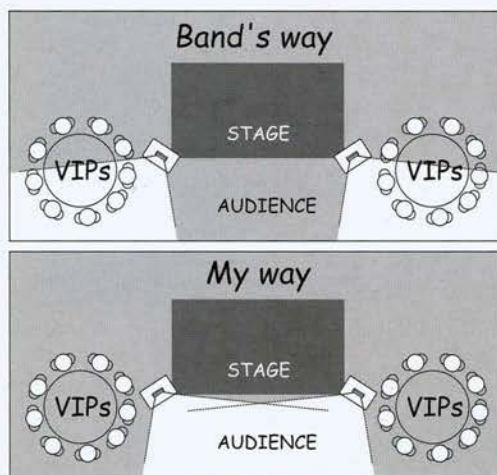
Their mixer has an onboard 7 band graphic equaliser. I always tell the band not to use it; in my experience bad EQ is far worse than no EQ. The lowest fader covers around 200 Hz. I pushed that one up and all the others down, then ran a lead from the EQ Out on the desk to the Sub amp channel, and the non-EQ Line Out to the Mid/Hi amp channel.

Bingo - a nice 'doof doof' kick drum thud from the Sub. And, going against all the rules (what's the point of having rules if you can't bend them?) I put the Sub up on stage behind the drummer. With plenty of padding in the drum shell, resonance wasn't a problem, and so it localised the sound field, giving the impression of a self-amplified drum kit.

When I demonstrated the result to the band, far from being appreciative of the quantum leap in sound quality, the only comment was "Jeez, it's about time you got that bloody thing working properly!"

That's the problem with working with friends; I don't get any respect.

Got any more small gig suggestions? Email me: dunk@dunkworld.com



ear trumpets.

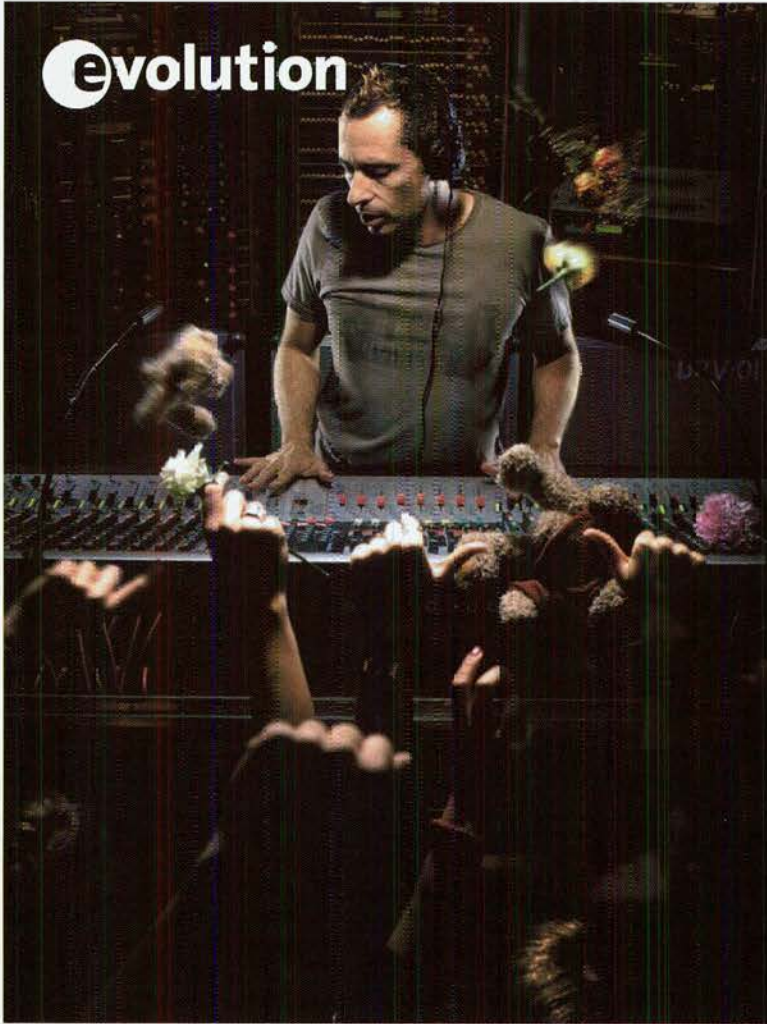
However, careful placement of the speakers can minimise this problem. I set up each speaker so it pointed diagonally across the dance floor, focussing somewhere in the middle. Every time I went out to the car to get something, the boys in the band would swivel them around on the stands so that they played outwards from the dance floor. I'd push them back the way I had them, and next time I came in they be back to being played out.

Finally my fuse blew. "I say chaps, would you mind not doing that?" I requested (or words to that effect!)

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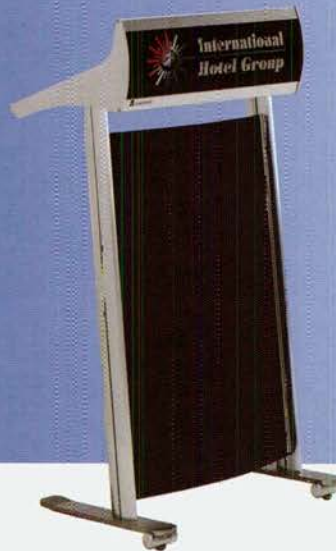
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Acoustic Guitars

(and the sound engineer)



By Alan Mourant

The word 'guitar' comes maybe from the middle ages instrument called a 'gittern' and has origins that date back to the Spanish in the 1600's. Stringed instruments with frets date back to 1500 BC.

The acoustic guitar is played against the chest or stomach either sitting down, standing up or on the rare occasion is played on the lap, ala John Butler style.

They come in different sizes - Classical nylon string range is 1/4, 1/2, 3/4 or full, and the Steel String range - Parlor (Grand Concert), Dreadnought and Jumbo, with the option of 12 string or cutaway. Each size caters for age, style and sound preference.

There are six strings on a guitar, each with an open note of E2, A2, D3, G3, B3, and E4 with the corresponding frequencies at 82 Hz, 110 Hz, 147 Hz, 196 Hz, 247 Hz and 330 Hz.

There are 144 chords, plus variations totaling over 1200, and on the standard 17 and 19 fret 6 string guitars there is 3 octaves and 4 octaves on the 24 fret guitar - this is just going from an E to E.

THE SOUND

An acoustic guitar has tone, volume, presence, balance, separation and sustain qualities that make it sound, uniquely, the way it does. A combination of these characteristics will produce a 'sweet' sounding acoustic guitar.

It is the perfect balance between high and low notes, a good sustain after the initial notes or chords are played, good separation of individual notes plus playability that discerns one guitar from another. Strangely enough, no two guitars sound the same.

Manufacturers who excel in acoustic guitar construction include Gibson, Taylor, Takamine, Martin and Guild and Washburn. And while some manufacturers keep to traditional hand made methods to cut and craft the wood that makes an acoustic guitar, others have adopted CNC (computer-numerically-controlled) milling machines.

CONSTRUCTION

The main parts of the guitar are the hollow body - top, bottom and side, the neck which

holds the frets, and the head (known as head stock) which contains the tuning pegs. Most important of all is the sound board. It is the vibration of the top soundboard that gives a guitar its signature sound.

Construction techniques create a delicate balance between giving strength to a guitar using internal bracing and inhibiting the resonance and tonality by using too much. Mahogany or rosewood bodies with spruce or cedar sound boards are most popular.

Micing up and recording an acoustic in the studio

Depending on the guitar - with pickups or without, the acoustic guitar can be amplified and recorded using a microphone or a DI.

The pickup is usually matched to onboard electronics that house the battery and circuitry to filter, mute, equalize or control level.

Some acoustic guitars may an XLR balanced output coupled to the pickup alleviating the use of a DI. Good pickup and electronics combinations are vital in recording and live reproduction.

Firstly, make sure the guitar has a new



battery and new strings in a gauge suited to the guitar and style of play. Thin strings will sound brighter than fatter ones. Make sure it does not buzz.

Choose a good quality condenser microphone with a wide frequency response, a large or small diaphragm - one that will bring out the true brilliance of an acoustic guitar. Studio acoustics will play a crucial role in the recording with, or without, ambience and natural reverb.

The location of the microphone depends on the sound you desire. As a starting point place it 6 to 8 inches away from the sound hole angled towards the frets to avoid the boominess of the sound hole.

Find the sweet spot by moving the microphone in this area, or move it closer to the frets and playing area and up and down the neck. If you have a studio assistant, get them to wear headphones and listen and communicate where you wish the microphone moved.

EQ out boominess using a high pass filter or EQ out some 100 - 250 KHz. Avoid using the pickup electronics' equalization and make sure the EQ is disengaged or flat, unless of course you want to achieve a certain sound by using it.

EQ the acoustic after you have found the optimum microphone location. Add some 8 -12 KHz for some brilliance.. If you can, avoid too much eq. Rely instead on good room acoustics and player position. good mic placement and your ears. Any EQ should be subtle.

You might like to combine the sound of the pickup but watch out for phasing when combining mic and di in the mix. If you have a phase meter in the studio refer to this regularly during the recording process.

Acoustics live

In a live situation avoid over using the EQ on the guitars' electronics panel. More effective EQ can be affected at the console.

As a side note, a DI will convert the pickup signal, which is generally a high impedance signal, to a low impedance signal suitable for long runs down multicore. If the acoustic is close to the mixing console (side of stage mix - duo scenario), then it is possible to go straight into a line input using your phono guitar lead. It is always prudent to go into a DI in all cases. Some acoustic guitars have no pickups or they are poor quality in which case you will have to use a microphone - and a good one at that.

In a live situation you need to choose a microphone that has good gain before feedback and off-axis rejection. A good condenser microphone is preferred but sometimes not suitable due to their high sensitivity on a loud stage, but should be used before a dynamic is chosen. If the guitarist uses in-ear monitors the task of mixing foldback is easier.

Often in use is a 'Feedback Buster' which is a rubber sound hole insert that improves the gain before feedback level - makes it possible to play louder before it feeds back. The only downside to this is that it does change the sound to a degree. In a live situation it is not so apparent; however in the studio you would not use one. Some guitars with multiple sound board holes allow you to block off air flow to holes to control unwanted frequencies and feedback.

When using a radio transmitter with an acoustic guitar.... first things first, make sure it has a new set of batteries, usually either 9 volt or AA's. Secondly, check the set up of the transmitter to ensure that the guitars' output does not drive the radio transmitters' input into clip or the receiver into over-modulation. Radio transmitters, by law, are not allowed to modulate outside of its prescribed bandwidth. The RF output (in Mw) is limited allowing an ideal 100% modulation on the carrier and anything over this is subject to severe limiting, possibly distortion. Depending on the make and model, some transmitters will have input level attenuators, some a 20db pad or like the Sennheiser SK50 - 7 steps of attenuation. Also the antennae of the radio transmitters should not be touching metal objects or covered in heavy costume.

There should be some headroom at the input stage to allow for performance dynamics. Use gentle compression at a ratio of 3:1, with a medium attack time and slow release to sit the acoustic in the mix and try not to over-compress.

• Thankyou to Vince Vozzo at John Reynolds Music City.

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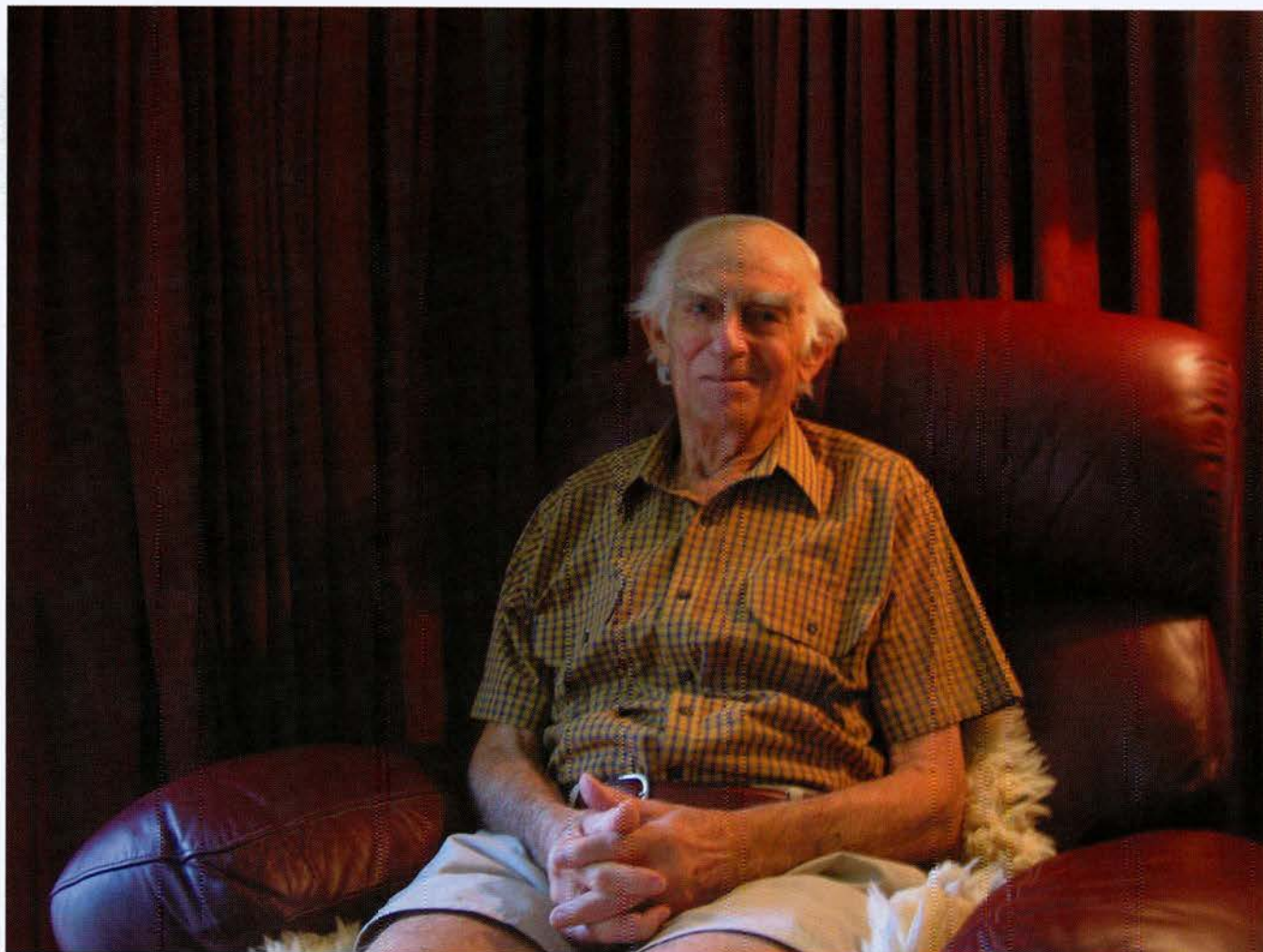
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The Life of Jack Singe

A living tribute to a true industry pioneer

By John Grimshaw

For those that have only worked in and experienced the entertainment industry of the last ten years, some of the most important people in the history of our industry may be unknown to you. Reg Bartram, Dennis Irving, Jack Singe, Roger Barratt are big names from an era of technical production that is still recent history. Some are quietly retired, some have checked out and some are still working today after many, many years.

John Grimshaw recently had the opportunity to sit down with Jack Singe in his home in Brisbane as he remembered back over nearly 70 years devoted to theatre, film and television in Australia. Jack has certainly seen better days, with illness and age finally catching up. Infirmity does not sit well with Jack, who was always an active person, both in mind and in work. Despite the obvious effort it takes to recount his history, the passion for the industry still twinkles in his eyes as he related stories of times, theatres, people and war.

In a life that spans working for innumerable theatrical productions, working through World

War II as a technician for military entertainment units, setting up ABC television and more recently around 20 years trying to prevent architects from making the mistakes they seem to love to make as they design venues, Jack has certainly been busy. He is also one of those very rare breed – an elder technician.

J.C. WILLIAMSON

1936, Sydney. A teenage Jack finds work with J.C. Williamson's. At the time, J.C. Williamson's is the most important and certainly the largest of the theatrical companies in Australia. They own theatres and equipment, they produced and staged shows, and if you wanted to get into the industry, that was where you needed to be. This work then led to a couple of years working on touring tent shows. In very few years, Jack had begun to pick up many of the skills of the senior technicians. But all of this was put on hold when World War II interrupted everything.

With his age, he was conscripted soon enough, but his talents saw him enter the infantry corps working in the newly formed

entertainment divisions. His experience in technical production had him working as a part of the biggest and most complex "production" companies the country has seen.

WAR CONCERTS

At the time, the war effort was spread over vast distances. Initially stretching from Africa and through Europe, the war soon also engulfed Asia as Japan made moves to spread out. As Jack started work in the army, the entertainment units were all state based and uncoordinated with each other. However, given the initial experience of operating concert events for the troops in the middle-east, the military centralised the operation and created the biggest production company this country has ever seen – even to now.

Jim Davidson and his dance band – all from ABC radio – were seconded into the army, with Jim given the task of creating and managing the soon to be formed 22 "Concert Parties".

The Facewood Film Studios in Maroubra, Sydney were taken over to become the Headquarters of the entertainment unit, where all of the new staff were trained. Each

Concert party needed stages, props, costumes, power, lights, audio, musicians, performers and so on – all set up to tour.

These were pulled together at the studios, and each Party was dispatched across the country and around parts of nearby Asia to entertain the troops. Building this unit up was no small task, as it involved hundreds of people, many tons of equipment, and huge resources to keep it all operational. Jack employed the skilled he learned in the touring tents shows to help prepare these touring live shows, replicating the design of these touring stages.

The military had the power to 'appropriate' any equipment or people it needed to serve the war effort. So it was that Jim Collins, the General Manager of Greater Union cinemas, suddenly found himself a Major. He was tasked with the job of creating mobile cinema units to entertain the troops. The fleet of Nestle delivery vans that used to deliver chocolate around Sydney and many other similar vehicles were converted into mobile 35mm cinema projection booths – with the projectors coming from cinemas that the war office would choose. A cinema would get a letter sent to the management, telling them of the appropriation, and the projectionist would get a similar letter telling him to report for duty. More than 170 of these cinema units were able to deliver more than 400 performances a week to troops stationed around Australia and into the Pacific.

"These units were a vital part of the action to keep up morale and were stationed in some remote parts of Australia where boredom was a problem, and in forward positions where bombing and strafing were an every day event."

ON TOUR, WORLD WAR II STYLE

Jack found himself working both in the workshops preparing the live and cinema tours, as well as out on the road running the shows. The performing troupes were sent out all over the country from Sydney. The tours would return home, rest up, and then go out again. Though a number of these tours were relatively short, Jack was sent out for an extended tour of duty. Two concert parties and five cinema units were sent to New Guinea. Jack was deployed to Milne Bay in Papua New Guinea, around two weeks after the Japanese were pushed out of the area. For fourteen months, the cinema would show movies and news reels to the troops, to as many as 17,000 troops at a time.

For the live concerts for the troops, the descriptions given by Jack hark back to that old BBC television series "It Ain't Half Hot Mum". Men dressed as women, special guest performers from the mainland, hard work, heat, rain, bogging trucks, and so on. The equipment was certainly spartan – four outdoor style PA horns for audio and a simple 100W amp, a mobile stage that was set up and moved and set up again. Despite this, the group of men that filled the entertainment unit were able to stage up to 500 performances per week across Australia and Papua New Guinea. These performances included many of the top performers at the time – George Wallace Jr, Smokey Dawson, Michael Pate, and Gladys Moncreif.

It was dangerous and hard work, but it was not to last forever. Jack saw the war to its conclusion, finally handing over his equipment to the official Army disposal unit, and then leaving to find work in the fledgling Australian movie industry.

FILMS

On the back of his work and experience during the war, Jack was asked to Production Manage two major feature films that were to be made by Charles Chauvel - *Sons Of Matthew* and *Jedda* (the first Aussie film shot in colour). Both of these shoots were to be predominantly outdoors, and required significant logistical problems for Jack.

On the *Sons Of Matthew* shoot, a large natural formation in the Gold Coast hinterland called the "Natural Arch" was going to become part of one of the central pivotal moments in the movie – a water rescue during a storm. The natural arch is not accessible by road. In fact, the Natural Arch is located at the foot of a mountain, and the only access was by a jerry-rigged flying fox that Jack organised. Into the

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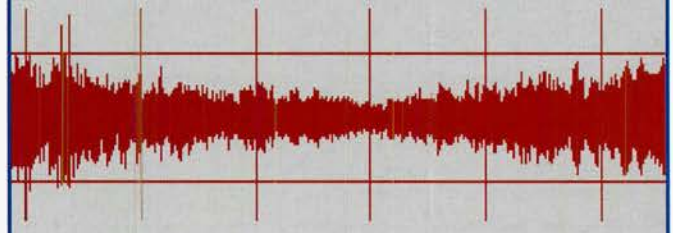
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Jack Singe, a terrific contributor

valley went tons of equipment – cameras, lights, generators, wind machines, fire pump on loan from a local brigade, staff, and such.

For the movie, they even dammed up the creek to flood the area. The water level was raised up from about 60cm deep to about 2.2m. It is doubtful that the current National Parks personnel would let this happen today. This was the way things were done back then. Problems had to be solved on the spot, and so long as you took a little care along the way with how it was done, then no one would be hurt. This was Jack – troubleshooter extraordinaire.

The war and film experience brought him to the roles of Production Manager and Technical Manager for a number of the major production companies, including the Tivoli Circuit, Celebrity Theatres, J. C. Williamson Theatres, National Opera, and the Italian Opera Company.

STARTING ABC

Jack had worked in almost every major performing venue in the country, and so was known by every important production person at the time. It should have come as no surprise when he was recommended by a number of people to head up the creation and running of the studios when the ABC decided to dabble in that strangle medium – television.

Head hunted by the ABC's General Manager (T. S. Duckmanton), early in 1956 Jack was appointed Supervisor of Production Facilities for ABC Television Services Sydney. This role meant that Jack needed to find and supervise more than 300 staff, both temporary and permanent, to fill the responsibilities of production. Jack oversaw all production planning, and organised design, graphics, staging, props, special effects, wardrobe, makeup, lighting, sound and film operations. With little or no existing skill base to draw on staff, Jack had to devise training and implement for his new crew.

Other than the designs for the BBC studios in London, they had no other clues for how to set up the studios, so Jack simply put it all together. When the first broadcast finally ran on November 5 in 1956, Jack was the Production Manager for the show.

From day one, television ran with a full suite of programs to fill the day. Drama, Opera, News, Current Affairs, Children's Education, Kindergarten, Ballet, Light Entertainment, Gardening and so on. To manage this, the Gore Hill studio swung immediately in to 24hr, 7 day a week production.

The second studio in French's Forest ran two shifts a day, 6 days a week. With these shows only running during the day, set was removed in the late evening, studio cleaned up and new sets through the early morning so that the next day's shows could start up with the morning broadcasts. The work was an endless procession of preparation for the

coming shows.

From 1956 to 1963, Jack continued working for the ABC in Sydney – as well as running his company Theatrical Service Company from 1948 to 1963.

In 1963, Jack appointed himself to oversee the setup two ABC studios in Queensland – Rockhampton, Townsville and then the Darwin studio. At the time, there were no landline links between the stations, so each had to be able to produce its own shows, as well as running tapes that arrived from Brisbane and other studios. These regional studios were, in effect, smaller versions of the Sydney operation. During this time, Jack also travelled regularly to the other studios around the country, and was called upon on number of occasions to act as the Federal Director of Production Facilities.

THEATRE CONSULTANCY

By 1981, Jack had decided that it was time to

move on from the ABC. His work concentrated on his theatre consultancy work, giving advice to people building new venues and altering existing ones. There were at least 80 major projects during this period of Jack's life – a period that some people these days would call the retirement years.

Jack has been an energetic contributor to our industry. In the same living room where this writer interviewed Jack, Brisbane's Warana arts festival was coordinated and organised for the first eight years of its life. Jack was the festival's Chief Marshall for 20 years.

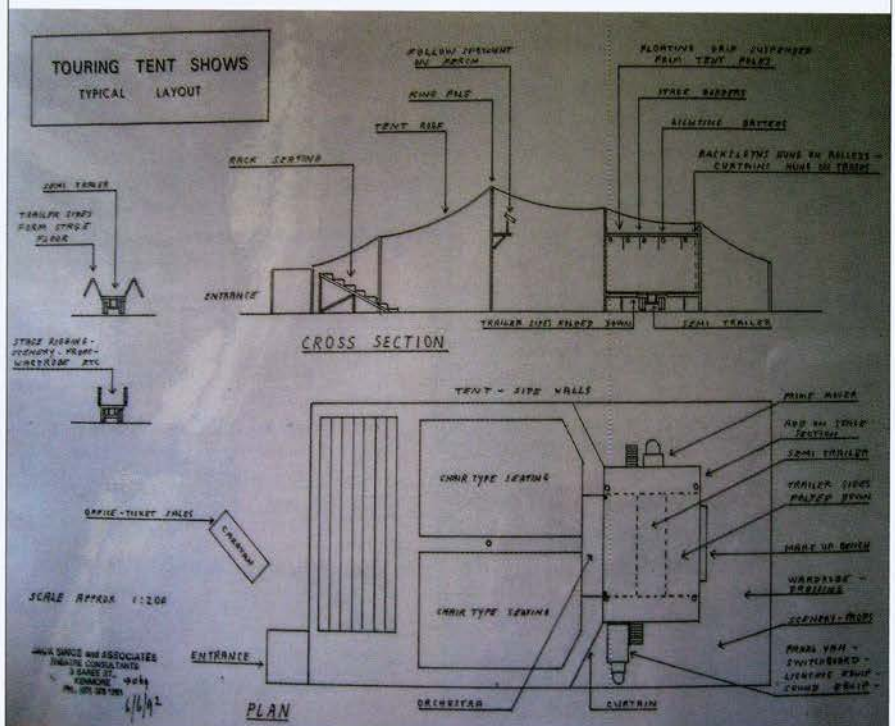
Today, Jack is not his best. Weak from the exertions of the interview, he closes his eyes, but I can see that he is pleased to have finally been able to tell at least part of his story. The family tell me that he has not been this animated and happy in many weeks, and I am grateful that I can give at least this much to a man that helped shape our industry.

Touring Tent Shows - the first semi trailer

In the late 1930's, Bert Lennon decided to take his production on the road using a new technique in Tent Productions. Whilst overseas, he had observed touring tent shows built around motor vehicles which made the companies very mobile and cost effective. Bert imported from America three buses and trailers, plus a semi-trailer built as a portable stage, complete with curtains and lights. It was one of the first semi-trailers seen in Australia.

Of particular note is the specially designed tent. The roof over the semi-trailer stage is higher than traditional tent designs, with four "quarter" poles at each corner of the stage area. The floating grid was assembled on the stage floor, and then hauled up using four block and tackle units – one on each of the four "quarter" poles. This allowed the grid to move with the tent roof in windy conditions.

The ability to use the semi-trailer as a staging platform made the whole setup much faster and easier. The entire production could be erected in six hours, more than halving the existing time. Dismantling took only 3hrs. The shows could best be described as "Musical Revue".



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by Craig Anderton

Phonic T8100 Tube Vocalmax

Go for the glow

Type: Tube mic preamp/EQ
Price: A\$550 (est)
Contact: www.phonic.com

Mic ins: Transformer, DC-decoupled XLR with phantom power
Mic input impedance: 3k ohms
Line ins: Transformer, DC-decoupled 1/4" TRS jacks
Line input impedance: 50k ohms balanced, 25k ohms unbalanced
Maximum input level: +10dBu mic, +26dBu line
Gain: +10 to +60dB
Outs: Balanced XLR and 1/4" TRS, with -10/+4 switch
Maximum output level: +22dBu
System bandwidth: 18Hz-30kHz, ±2dB

Phonic's T8100 has an understated look and feel; it falls under the preamp category of "here's gain, a tube, and some EQ." As a result, the price is remarkably low for a stereo device with transformer-coupled balanced inputs and a pair of 12AX7s.

The front panel duplicates controls for both channels. Switches cover highpass filter (80Hz), phase invert, and phantom power on/off. Knobs adjust gain, tube timbre (from "cool" to "warm"), output level, low-frequency (80Hz) boost/cut, high frequency (12kHz) boost/cut, and midrange boost/cut. The boost/cut controls are all detented, and have a range of ±15dB.

The midrange frequency is variable from 400Hz to 8kHz, but there's no bandwidth control. Also, the high and low controls are peak controls, not shelving. As a result, the EQ is not for surgical adjustments, but more for general tone-shaping with a tube vibe.

SOUND JUDGEMENT

When I first plugged a dynamic mic into the T8100 and turned on power, I was concerned that I had the wrong voltage — the tubes looked like the filaments were about to explode. But it was just the old "lamp behind the tube" trick to add some visual appeal (I guess real tubes don't glow enough for consumers who want their preamps to scream "Hey! There's a tube in here!").

Once I got that sorted out, it was time to experiment with the sound. And I must say, the T8100 sounded very good with my voice. The timbre control's "warm" setting doesn't do over-the-top distortion, but adds a subtle crunch that actually sounds more like you're adding compression than distortion. The "cold" setting didn't get a lot of use with my voice, but did well with guitar amps and percussion where I just wanted to capture the sound, not add "character."

However, the noise level isn't negligible. Even with the input and output levels turned down, there's a small amount of residual hiss. But it's when you start making the sound more interesting through use of the timbre control and some upper-mid EQ that the hiss becomes more prominent. I found the high-frequency boost was also touchy about noise — if you turned it up a tad, there was a nice high-frequency lift. Turn it up more, though, and it made any noise obvious.

Despite the lack of a bandwidth control, the midrange EQ was more effective and useful than I thought it would be. The resonance is gentle, which I prefer — narrow bandwidths work with a more limited range of sounds. The highpass filter is fairly effective, but doesn't seem too steep. Engaging the filter doesn't change the sound's "natural" vibe, but if you need a steep cutoff to deal

with "p"-popping, you're probably better off doing it elsewhere. Most of the time, the midrange EQ handled my needs, with the high and low controls reserved more or less for touch-ups.

My only real reservation concerns hiss. Being careful with the control settings (e.g., don't add too many highs) goes a long way toward keeping it under control, and I also found Adobe Audition's noise reduction tools excellent for post-processing. If you're willing to tweak the controls, you can usually find the sweet spot that gives the sound you want and sufficiently low noise.

The bottom line is that the T8100 added some depth and color to my voice, while also doing double-duty as a straight-ahead stereo preamp for other sound sources; and the EQ, while not spectacular, worked well. And certainly, the price is right. The T8100's performance belies its price. **EQ**

Strengths:

- Well-controlled tube sound with "character"
- Cost-effective
- Includes highpass filter and 3-band EQ with sweepable mid
- Timbre control is very useful

Limitations:

- No bandwidth control on mid EQ band
- No variable input impedance for matching mics
- Hissy with certain control settings

THE T8100 HAS A TOUCH OF "OLD-SCHOOL" LOOK, THANKS TO ITS ANALOG VU METERS AND GLOWING TUBES.



Mindprint Envoyce mkII

by John Krogh

Price: A\$1,500 (est)

Contact: Mindprint,
www.mindprint.com

Strengths:

- Flexible design
- Clean, clear mic preamp
- Each band of EQ can be engaged separately
- Optional DI-Mod allows for computer integration and stereo monitoring

Limitations:

- Front-panel knobs feel crowded
- Preamp section doesn't employ the tube

Mindprint first rolled out their single-channel Envoyce in 1998. With the mkII update, they've taken a flexible preamp/EQ/tube compressor design and improved on it in several ways, not the least of which is an optional digital interface called the DI-Mod USB.

The DI-Mod USB interface sports a S/PDIF coaxial output, a stereo TRS out, and a USB port, which can function as an input or output, depending on how you set it up with the included utility program or from within your host recording app. The S/PDIF connection can carry the Envoyce's output or the output from your computer; additionally, the analog out

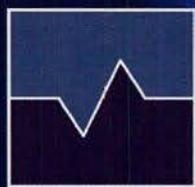
can be used for stereo monitoring. Essentially, all you'd need for single-channel recording and stereo playback is a laptop and the mkII.

The mkII's input and processing sections remain much the same from the original. Analog line ins and outs are on balanced XLR and balanced/unbalanced 1/4" jacks. In addition, insert and send jacks are provided, allowing you to process the input signal with external gear. The insert comes before the compressor and EQ sections.

The EQ isn't the typical low and high shelving paired with a sweepable mid. Instead, all three bands are "bell-shaped" parametric, and have

different behavior for boost and cut. When boosting, the bandwidth is wider for a "broad stroke" result, whereas when cutting frequencies, the bandwidth is narrower for more surgical control. I found the EQ behavior to work well. In cases where I wanted to warm up a sound, boosting by 1-2dB did the trick (a little went along way, especially when engaging the tube saturation in the compressor section).

As a tonal shaping device, the mkII is impressive. Its preamp sounds clean and focused, the EQ is smooth, and the compressor is capable of going from nearly transparent to rude, depending on how hard you drive the tube. If you're in the market for a sub-\$1,500 recording channel, the Envoyce mkII is worth serious consideration. **EQ**



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by Mitch Gallagher

Universal Audio LA-610

Two legendary components in one box

Type: Tube channel strip
Price: \$3,500 (est)
Contact: Universal Audio,
www.uaudio.com

Channels: 1

Components: Tube preamp, 2-band shelving EQ, optical compressor/limiter

Connections: Mic input (balanced XLR), line input (balanced XLR), instrument input (unbalanced 1/4"), line output (balanced XLR)

Maximum gain: 77dB (mic), 40dB (line)

Microphone pad: 15dB (switchable)

Frequency Response: 20Hz–20kHz, ± 0.5 dB

Input impedance: 500 or 2k ohms (mic), 2.2M or 47k ohms (DI)

Low shelf EQ: 70, 100, or 200Hz, ± 9 dB

High shelf EQ: 4.5, 7, or 10kHz, ± 9 dB

Noise floor: –72dBu (line, unity gain)

Time for a math lesson: A Universal Audio M-610 tube mic preamp has a list price of \$2,400. One of the company's LA-2A optical compressors lists for \$5,995. Put the two together, and you've got a grand total of \$7,395. So how the heck have they managed to put out the LA-610 — basically a combination of the two products — for \$3,500 list? Even compared to the \$4,995 Universal Audio 6176 channel strip — a combination of the 610 and the 1176 compressor/limiter — the LA-610 is surprisingly inexpensive.

Granted, the optical compressor in the LA-610 isn't quite the same as the venerable LA-2A, but it's very close. The compressor uses the same T4 optical cell as is used in the LA-2A, and provides response similar to the original. Unlike the LA-2A, the LA-610 doesn't have sidechain high-frequency adjust, nor can you link two units for stereo operation. And, unlike the 6176, you can't use the preamp and compressor independently. (You can, of course, bypass the compressor/limiter, or use the line input to feed the compressor, but you can't use the two sections on separate

signal paths the way you can with the 6176.)

Are those differences enough to explain the relatively low price? Who knows . . . and really, who cares? What's important is that Universal Audio was able to accomplish the task. (Okay, according to Universal Audio, there are other reasons: the LA-2A is laboriously hand-wired, contains some very expensive components, etc.)

THE TOUR

EQ reviewed the LA-2A and M-610 in the past (April 2001 and June 2001, respectively), so I won't re-hash what's already been written. Instead, let's take a quick tour of the LA-610. The preamp section has selectable input impedance, 15dB pad, phase invert, and phantom power. Gain is set using two knobs; a 5-position Gain control, and a large Level control.

Two bands of shelving EQ round out the preamp section, High and Low. The EQ has ± 9 dB of gain for each band, and each can operate at one of three frequencies. For the high EQ, you can choose among 4.5, 7, and 10kHz. For the low EQ, you have 70, 100, and 200Hz.

The T4 optical compressor/limiter offers

extreme ease of use; there are only two knobs required: Peak Reduction and Output Gain. Both are nice and big for easy adjustment. The last two controls on the front panel set the T4 to compression, limiting, or bypass, and determine where the meter falls in the circuit. Speaking of meters, the LA-610 has a cool backlit analog VU meter. There's a recessed meter calibration pot on the front panel. The review unit's meter was slightly out of calibration when it arrived; a quick tweak brought things into alignment.

Around back, things couldn't be more straightforward: There are line and mic XLR inputs and an XLR line output. A front-panel 1/4" jack accepts instrument-level signals. The input selector knob lets you choose among mic input at 500 or 2,000 ohms, line input, or Hi-Z (instrument level) input at 47k or 2.2M ohms. This allows you to have all the inputs connected at the same time; just select the one you want using the knob, and you're ready to go.

THE SOUND

As with the M-610 and 6176, the LA-610 preamp's Gain and Level controls interact. The Gain control is a 5-



IT DOESN'T GET MUCH SIMPLER THAN THIS: MIC INPUT, LINE INPUT, AND LINE OUTPUT. THE INPUTS (INCLUDING THE FRONT-PANEL INSTRUMENT INPUT) CAN ALL BE CONNECTED AT ONCE; SELECT THE ONE YOU WANT USING A FRONT-PANEL SWITCH.



THE LA-610 PROVIDES A COMPLETE CHANNEL STRIP BASED AROUND UNIVERSAL AUDIO'S 610 TUBE MIC PREAMP AND AN "LA-2A-STYLE" OPTICAL COMPRESSOR/LIMITER.

position switch, offering -10, -5, 0, +5, and +10dB increments. Changing this switch not only changes the input gain, but also affects the tube's harmonic distortion. The Level control is a continuous knob; setting it higher and the Gain control lower results in a cleaner sound, turning Gain up and Level down makes the sound rounder, warmer, and more "tube-y."

The EQ is useful for basic shaping, but isn't designed for "surgical" purposes. The EQ gain is set using 11-position rotary switches; the smallest switch increment is 1.5dB, so don't look for fine control over tonal shading here.

The compressor is similar in response to an LA-2A. The manual describes it as slightly more colored sounding than the original, and I'd have to agree — to my ears it's a tiny bit more aggressive. But it's still a nice, smooth compressor,

especially when used for minimal gain reduction. As on the LA-2A, there are two operating "modes": compression, which is gentler with a lower ratio, and limit, which has a higher ratio.

Combined, the preamp, EQ, and compressor offer a tremendous range of sonic shading. You can set the LA-610 for transparent, clean operation, or you can punch things up, adding substantial girth to the input signal.

But even when running clean, the LA-610 adds a roundness to the signal and subtly tames strident highs. I tracked vocals, acoustic and electric guitars, and electric bass into Pro Tools using the LA-610. In every case I was thrilled with the result. On mic-level signals, the LA-610 preamp provides great dynamic response, good presence, and even frequency response.

After tracking, I ran the

signals back out through the LA-610. Even with the compressor bypassed, and the EQ set for no boost or cut, there's a subtle character added to line-level signals. The EQ is easy to dial in for broad tonal shaping. The LA-610's high EQ is sweet, without harshness. The low EQ is round and smooth.

Setting the compressor couldn't be easier: Set the Peak Reduction knob for the amount of compression or limiting you want, then adjust the Gain control to make up for level lost due to processing. Easy. The meter can be switched to display the preamp output level, gain reduction or compressor output — a big help for getting the levels where you want them. A nice addition would be a signal present/overload LED on the preamp input.

TRUE VALUE

Remember our math lesson from the beginning of this review? No matter how you run the numbers, the LA-610 works out to be a pretty good deal. Basically, buy a 610 preamp for \$2,500 and Universal Audio throws in an LA-2A-style

compressor/limiter for an additional \$900. (These are list prices, of course; you'll likely find lower street prices.)

Not bad at all considering the sound quality and versatility this buys you. You get a tonally flexible tube preamp, two bands of shelving EQ with switchable frequencies, and a smooth, high-end compressor/limiter.

Whether you're after transparency or thick, punchy tones, the LA-610 can deliver. Use it as a channel strip, a mic or instrument preamp, for EQ, or as a compressor. No matter how you set it up, you'll get low noise, great-sounding results.

Add it all up, and you get a great value. That's the kind of math I like best. **EQ**

Strengths:

- Tube preamp with variable input impedance
- Optical compressor
- Hi-Z (direct) input
- Excellent value
- Tonally versatile preamp

Limitations:

- Can't link two units for stereo
- Can't use preamp and compressor independently
- No sidechain

THE PREAMP PORTION OF THE LA-610 INCLUDES TWO BANDS OF SHELVING EQ. EACH BAND CAN BE SET TO ONE OF THREE FREQUENCIES.



AMS-Neve 1073

by Lynn Fuston

Is this the perfect reissue of a classic preamp/EQ?

Type: Preamp with 3-band EQ

Price: A\$7,500 est

Contact: AMS-Neve,
www.ams-neve.com

Frequency response: 20Hz to 20kHz,
±0.5dB, -3dB at 40kHz

Distortion: less than 0.07%, 50Hz to
10kHz, at +20dB gain

Noise: less than -83dB at all line
gain settings

EIN: better than -125dBu at
+60dB gain

EQ

High-frequency: ±16dB fixed
frequency shelving at 12kHz

Low-frequency: ±16dB shelving with
selectable frequencies of 35, 60,
110, and 220Hz

Mid-frequency: ±18dB peaking,
fixed 'Q' with selectable center
frequencies of 0.36, 0.7, 1.6, 3.2,
4.8, and 7.2kHz

Highpass filter: 18dB/octave slope,
switchable between 50, 80, 160,
and 300Hz

The Neve 1073 is probably the most famous and possibly most desirable preamp in the history of recording. Designed by the Rupert Neve company in the early '70s, it has earned its place as the "gold standard" among preamps. This discrete transistor mic/line amp with 3-band EQ and highpass filter may not be the flattest, cleanest, or fastest preamp design, but it epitomizes the Neve "essence," endearing it to engineers and producers worldwide. When I gathered seven world-class engineers together for the 3D Audio *Preamps in Paradise* video and asked about a "desert island preamp," three of the seven said without hesitation: "Neve 1073." With hundreds of preamp options available today, finding so much agreement is testament to the desirability and sound of the 1073. I called Fletcher at Mercenary Audio and asked him which preamp he thought is the most copied, he retorted "Copied? Or copied well? The 1073 is without a doubt the most copied mic pre, however it is very rare that it is copied well." The legendary big, punchy sound of the 1073 is well documented so I'll stick to comparing the reissue to the original unit, to see how close AMS-Neve came to duplicating the vintage 1073.

Realizing the number of 1073 copies out there, along with the skyrocketing prices for originals, AMS-Neve decided to re-issue a new 1073. However, I think the



FIG. 1. THE FRONT PANELS ON THE TWO UNITS ARE SO NEARLY IDENTICAL THAT YOU HAVE TO KNOW WHERE TO LOOK TO TELL THEM APART. NEW ON THE LEFT AND OLD ON THE RIGHT.

word "re-create" is more accurate. When I pulled two reissued modules out of the shipping box, I thought there had been a mistake. I was to get an original (old) 1073 and a recreation (new) 1073. But the two I had here were identical. Closer inspection revealed minor differences. The "vintage" unit seemed to be in pretty good repair, somewhat rare for vintage Neve modules. The knobs on the old unit were dirty and the frequency-select rings had grease pencil on them where the original paint had worn off. The knurled knob on the new one was shiny, while the old one was dull. And the highpass filter knob was darker blue on the old one. Other than that, they looked absolutely identical, so close in fact that I put marker tape on the front of the new one so I wouldn't

confuse them. (See Figure 1.)

Next it was time to go under the hood. I pulled the units from the case, a sturdy 3U box that includes power supply, XLR inputs (both line and mic) and outputs on the back, along with power frequency/voltage select and a power switch. On the front, there are LED indicators for +24V and +48V, along with phantom on/off select for each module and a pair of output level trims. The modules look exactly like every other Neve module I've had — the Amphenol connector on the back, with a Lo/Hi switch on the rear for the 300/1200 ohm mic input impedance, and completely encased in metal. I did notice one thing that struck me as funny: On the old module was a bright red sticker that said "Original old unit." Obviously I wasn't the only one who had





FIG. 2. HIS TAG ILLUSTRATES HOW SIMILAR THE TWO UNITS ARE. IT WAS MARKED SO PEOPLE COULD TELL THEM APART.

difficulty telling them apart. (See Figure 2.)

Next I unscrewed the sides, slid them off, and got to the heart of the matter. (Even the screws are interchangeable between old and new.)

The first thing I noticed as I placed them side-by-side was the similarity of the printed circuit board (PCB) traces. A big aspect of preamp design, which some clone-makers overlook, is component placement and PCB design. When copying an old design, you can use the same components in the same circuit but lay out the PCB differently and end up with a unit that sounds totally different. The routing and size of the signal traces can have *that much* influence on the sound. Conversations with many well-known preamp designers has confirmed this to me. So I was delighted to see that the PCB boards looked absolutely identical, apart from the



FIG. 3. THE IDENTICAL TRACES ARE ATTRIBUTABLE TO USING THE ORIGINAL PCB ARTWORK FROM THE NEVE ARCHIVES. NEW (LEFT) AND OLD (RIGHT).

color of the board material. (See Figure 3.)

When I asked the technical design department at AMS-Neve about the PCBs, they informed me that "the PCBs look identical because they are made with the original tape PCB artwork, carefully stored over the years and now in use again. All original PCB drawings are used." Chalk one up for "historical accuracy." That made me wonder if the same was true for the accurate reproductions of the front panels as well. The word from AMS-Neve? On those "it was more difficult because we had to spend a great deal of time matching today's CAD fonts with the original hand-produced artworks." Original artwork or not, to my eye the front panel is indistinguishable from the original.

The next thing I noticed was the looming (the way the cables are routed and wrapped

between individual PCBs). This aspect is just as significant as the PCB layouts and I was pleased to see the cables were positioned and wrapped exactly like the original. The faithfulness to the original design and construction is overwhelmingly evident. (See Figure 4.)

So lots of similarities. Now let's talk about some differences inside. I noticed a difference in the potentiometers and resistors between old and new, as you can see in the images below. The old carbon track pots, corroded over the years, were replaced with newer conductive plastic pots on the re-issue. The larger brown resistors on the old were replaced with smaller metal film resistors, bluish in color. (See Figure 5.)

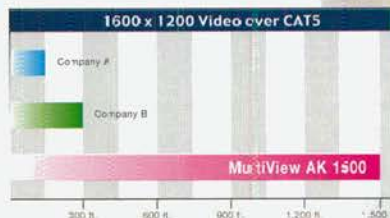
Probably the most influential things to the sound of the 1073 are the audio transformers. On the new module, although



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AMS-Neve 1073

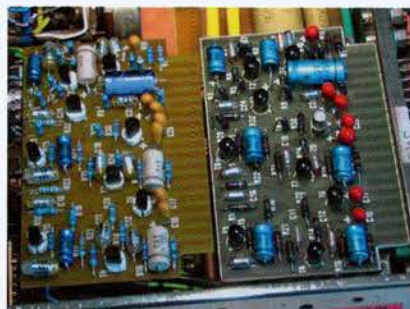


FIG. 4. NOTICE THE IDENTICAL COMPONENT LAYOUT, MAKING IT DIFFICULT TO DISTINGUISH NEW (LEFT) FROM OLD (RIGHT), EVEN WITH THE ORIGINAL CAPACITORS ON THE OLD BOARD, WHICH SHOULD BE CHANGED FOR BETTER PERFORMANCE.

identical in size and color, the transformer case markings were different. I asked the AMS-Neve team to explain these three differences. (See Figure 6).

Simon Daniels, Product Marketing Manager of AMS-Neve responded: "Originally Neve used "Plessey E" carbon track potentiometers, but during 1977 a new range of pots was introduced after extensive evaluation. These were manufactured by SFER Nice, and had better performance, especially in terms of noise and life and they were physically much smaller. Today we still use the white SFER PA11 pots, which have conductive plastic tracks and gold plated contacts, and give excellent audio performance, longevity, and linearity.

"The resistors used today are metal-film and exactly the same specification as the ones used in the original units. They are available from our suppliers and component size is reduced.

"The original transformers were co-designed in 1968/69 by Neve and Marinair Fader of Harlow, who then manufactured the transformers for Neve. As Neve expanded in the 1970s, a second supplier was required and so another local (to Cambridge) transformer manufacturer (St. Ives Windings) produced transformers of the same design. So Neve used both suppliers.

"The transformers used in the current AMS-Neve built modules are to the same

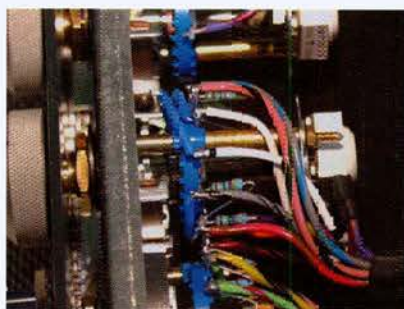


FIG. 5. COMPARE THE NEW METAL FILM RESISTORS AND SMALL POTS (TOP) WITH THE OLC BROWN RESISTORS AND CARBON POTS (EOTTCM).

design and from the same factory in St. Ives in Cambridgeshire. (The parent company name is now changed to Carnhill, the name on the current transformer).

THE ULTIMATE QUESTION

It's time for the ultimate question: What does the new module sound like compared to the original?

After detailing all the similarities, you may not be surprised to find that it sounds like a 1073. Using the old and new pair of stereo sources such as piano, no noticeable differences were detected between left and right channels. I ran tones to check conformity of gain staging and it was right on. I compared the two equalizers by ear and found that the curves and values of the EQ sound identical. In studio use, I did spot a few differences: The switches for EQ and phase on the old Neve modules are notorious for the scratchy sound they make. The new ones feel the same but don't make that annoying noise. The frequency select

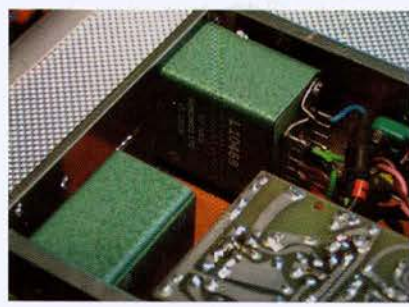


FIG. 6. NOTICE THE IDENTICAL SIZE AND PLACEMENT OF THE TRANSFORMERS AND THE IDENTICAL PCB LAYOUT. NEW (TOP) AND OLD (BOTTOM).

switches on the old modules go "chunk" when you turn them. On the new one they feel lighter and go "click." The boost/cut knobs on the old 1073 are very heavy and you have to purposefully "twist" them. On the new one, they feel lighter and you can just turn them. The old rotary highpass switch is actually easier to turn than the new one. As you can tell, I'm reaching to find differences — no one would expect 30-year-old switches and pots to operate like new ones. Besides, none of this will have any impact on the sound of the unit.

All in all, I think AMS-Neve has done a spectacular job of recreating a classic. The new module is worthy to wear the Neve symbol and the 1073 name. Those who purchase one won't have "vintage Neve" bragging rights but they won't have old gear frustrations either. They will certainly be entitled to say, "I have a Neve 1073" without reservation. EQ

Strengths:

- As faithful a reproduction as possible, with identical PCBs and identical or better components
- Has the classic 1073 sound with better reliability/longevity
- Will work side by side with vintage 1073 modules in existing racks
- Output level control and switchable phantom power on front panel
- Only slightly more expensive than original 1073 modules

Limitations:

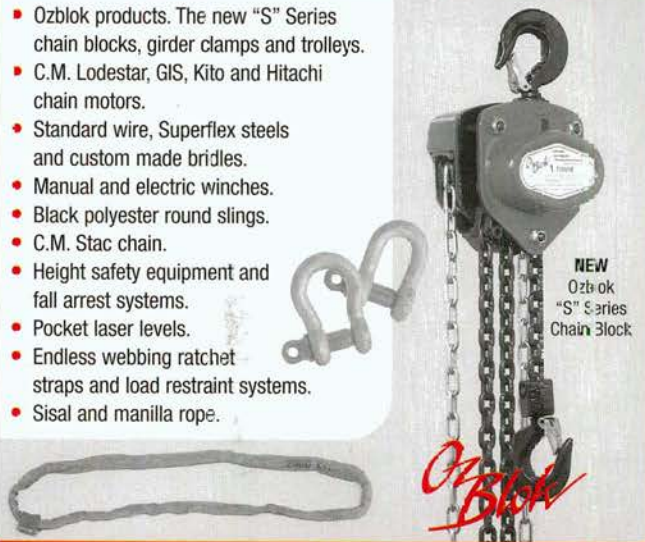
- No front-panel power switch
- No boost/cut value markings, only dots, just like original 1073
- Expensive

Clones and Transformers

The topic of transformers in Neve clones is worthy of attention since the transformer has such a large effect on the sound. Carnhill is the company that supplies the majority of the "clones" with their LO 1166 output transformers (a few of the "cloners" use original transformers). AMS-Neve tested the LO 1166 transformers and says they found an unacceptable level of low-frequency distortion. Robin Porter, one of the original Neve staff involved with the first batches of 1073s, finally got Carnhill to build transformers that conformed to Neve specs. Only Neve has access to these output transformers, which the company says are a major contributor to why the AMS-Neve reissues are so close in tone and texture to the original modules.

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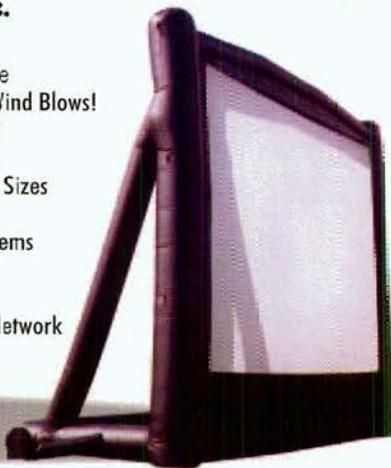
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by Craig Anderton

The software takes E-mu's sampling expertise into the virtual world, while the hardware provides serious I/O and effects — all at a price that looks like a typo.

E-mu Systems Emulator X Studio

The hardware sampling experts go virtual

Type: Sampler/audio interface/software bundle

Price: A\$1,200 est.

Contact: E-mu Systems, www.emu.com

Platforms: Windows 2000 SP4/XP SP1

Minimum system requirements: 512 MB RAM, PCI 2.1 slot, adjacent PCI slot for sync daughterboard, 1.5GHz PIII or AMD processor, 1024 x 768 display

Analog I/O: six 1/4" TRS balanced ins, eight 1/4" TRS balanced outs (software selectable +4/-10), 2 combo mic/line ins with TFPro mic pres, stereo headphone out, RIAA equalized phono input, 4 stereo minijack alternate outs (these parallel the eight balanced outs; intended for driving powered speakers with surround applications)

Mic Preamp: +10 to +50dB gain, switchable +48 phantom power

Digital I/O: S/PDIF 2-in/2-out transformer-coupled coaxial, 2-in/3-out optical (software switchable AES/EBU, S/PDIF, or ADAT. In ADAT mode, offers 24 bits with 8 channels @ 44.1 or 48kHz, 4 channels @ 96kHz (S-MUX compatible), 2 channels @ 192kHz. FireWire 400Mbps port.

MIDI I/O: 2-in/2-out (32 channels)

Sync: internal crystal sync at 44.1, 48, 96, 192kHz, external sample rate sync (ADAT, S/PDIF, opt. or coax), word clock (75ohm switchable termination), SMPTE in/out, MTC out

A/D-D/A converters: 24-bit linear, 192kHz

Resolution: 16-/24-bit @ 44.1, 48, 96, 192kHz, 32-bit floating point internal processing

Modes of operation: standalone, VST plug-in

Bundled software: 4 CDs (over 2GB) of sounds, PatchMix DSP, hardware-accelerated FX library

Format support: EOS, Esi, Etl, Emax II, Giga, Akai S1000/3000/5000, HALion, EXS24, SoundFont 2.1, WAV

Drivers: ASIO, WDM (for interface only), DirectSound

Copy protection: periodic CD insertion

There are a lot of native soft samplers, but the E-mu Systems Emulator X Studio package (EX for short) is a hardware/software bundle: PCI card, sync and I/O daughtercard, nice I/O breakout box, sampler software, sampler format conversion software, and hardware-accelerated effects. It actually samples — it's not just for playback — and works as a VST plug-in or in standalone mode.

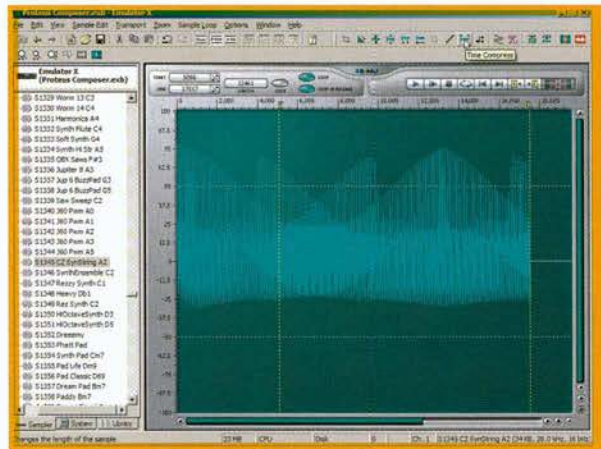
Tying the software to hardware has significant strengths, like tight integration,

SAMPLE EDITING HAS EXTENSIVE OPTIONS, WITH PLENTY OF SCREEN SPACE TO SEE WHAT YOU'RE DOING. YOU CAN ZOOM IN UNTIL YOU SEE EACH INDIVIDUAL SAMPLE.

zero-latency mixing, and hardware effects that don't tax your CPU (although the hardware doesn't have infinite DSP — you can run out of effects). This is the same high-quality hardware

used in E-mu's 1820M, and features a ton of I/O.

On the downside, basing the hardware on FireWire connectivity would have been more transportable. (Although



THE PATCHMIX DSP APPLICATION (LEFT) PROVIDES 32 CHANNELS OF ZERO-LATENCY HARDWARE MIXING/MONITORING, AND A VIRTUAL PATCH BAY WITH FX INSERTS. IN THE BACKGROUND IS THE EMULATOR X'S VOICE EDITING WINDOW, WITH ONE OF THE 54 FILTER TYPES ABOUT TO BE SELECTED.

there is a FireWire port, it doesn't relate to the sampler — it's just a thoughtful bonus.) Still, PCI slots aren't going away any time soon, and the exceptional performance justifies tying into the computer's insides rather than going through external I/O.

INSTALLATION

The package installed easily and worked immediately. There are some unexpected extras: A headphone splitter, MIDI DIN to mini-DIN adapter for driving modules with non-standard MIDI connectors, and a power supply cable extender (the PCI card gets its power from the computer's power supply.) Everything you need to get going is included.

THE HARDWARE

The specs sidebar gives the specs, but it's worth mentioning that the breakout box is classy, with good build quality and connectors. E-mu gets extra points for including a phono preamp; DJs, rap, and hip-hop artists will appreciate this for sampling classic vinyl. Unless you need more I/O, this is as good an audio interface as you'll find in this price range . . . and probably some higher price ranges too. And of course, having a hardware interface means you can hook up a mic or line out and actually sample.

THE SAMPLING SOFTWARE

There are no real surprises regarding architecture. A browser tree locates presets and samples, and a large window offers different pages that show various aspects of the sampler (voice editing, voices and zones, and links among presets). What is surprising is the interface's efficiency — everything is visible and easy to edit, without taking up too much space — and drag-and-drop is well

supported. If you've worked with samplers before, it's a cinch to get around. The only reason you need to read the PDF manual (there's also a printed, fairly limited quick start manual for both the interface and sampler) is to pick up on the extra goodies that aren't obvious.

As this is an E-mu product, there's a major emphasis on filtering — 54 types, and you can morph from one filter to another. Under the hood, there's also the option for high-quality transposition if you're stretching samples over a wide range. E-mu has always had the recipe for transposing samples and making them sound good, and they've ported that over to the EX. There are also plenty of modulation options, along with flexible routing.

PATCHMIX DSP

This application ties into the hardware, providing zero-latency mixing and effects that don't load down the CPU. A large window shows effects parameters for editing, but you can also show inputs and outputs, and do patching. There are effects inserts per channel and master inserts; the number of each depends on how you're using the EX DSP resources.

But these aren't only for effects: Right-click on a slot and you can insert a trim control, peak meter, signal generator, or insert an additional send or send/return (yes, use an external in and out in the breakout box to insert some vintage piece of hardware sitting in your rack).

There's the usual stuff too, like meters, level controls, mute and solo, etc. PatchMix DSP isn't just an accessory, but a useful part of the system. And, with a recent driver update (version 1.60), the PatchMix DSP

effects can show up in your VST host (named "E-mu Power FX"), with automation.

SOUNDS

There aren't a lot of dedicated EX libraries, but the supplied format translation program works quite well. The bundled sounds also rate highly, particularly the X-Producer CD. REX file import isn't supported, but if you have ReCycle and save the file in Akai format, EX can import it and map slices to the correct keys.

HEY, BUT WHAT ABOUT. . .

We just can't cover everything. The file management deserves props, and the automated sampling functions are brilliant if you're into making your own samples. Then there's the sample editing DSP — time and pitch stretching, bit reduction, compression, and much more. And yes, there's positional, velocity, and controller crossfading for the various zones, which can be up to 128 layers deep. (Also note that if your budget is really cramped, the standard EX package that's based on the 1212M audio interface costs about A\$500; it omits the sync daughterboard and some I/O.)

Bottom line: It's a helluva package at a helluva price. E-mu has rocked the hardware sampling world for over 30 years, and their no-holds-barred entry into the virtual realm easily earns them an EQ Award. **EQ**

Strengths:

- Cost-effective
- Excellent quality (sound and hardware)
- Actually samples, not just playback
- Useful effects don't load the CPU
- Extensive editing options
- Disk streaming, or load in RAM
- Lots of realtime control options

Limitations:

- PCI-based system not as "transportable" as FireWire
- Wants a high-power system
- Windows-only
- Limited export options (EOS bank or EOS floppy bank files)



As we go to press, E-mu has announced version 1.5 of the Emulator X software. This free download offers integrated software effects at the preset and multisetup level (these are in addition to the existing hardware-accelerated effects), auditioning of sounds straight from disk, and a new Single View Screen that allows users to quickly search and dial up sounds in seconds. For more information, visit E-mu's web site.

by Barry Rudolph

Trident 4T Celebration Channel Strip

It's a party in a rack

Type: Channel strip with stereo monitoring facilities

Price: A\$1999 est

Contact: www.tridentaudio.co.uk

Format: Single-rackspace

Connections: Balanced XLR and 1/4" microphone input, 1/4" instrument input, stereo monitor input (RCA), balanced XLR output, 1/4" stereo headphone output

EQ:

Low: Shelf selectable 50 or 150Hz, ± 15 dB

Mid: Sweepable 100Hz to 10kHz, ± 15 dB

High: Shelf, selectable 7 or 10kHz, ± 15 dB

EQ Magic: Simultaneous boost/cut of 100Hz and 10kHz (DI only)

Compressor: Selectable ratio 4:1 and 30:1. Adjustable threshold and release

Trident's 4T Celebration channel strip is a party — a 1-rackspace *soirée* that

commemorates designer John Oram's 40th (4T, get it?) year in the pro audio business. Useful for live performance, studio recording, and mastering applications, the single-channel 4T has a separate direct instrument input (DI), a mic preamp, a 3-band equalizer, a compressor/limiter with metering, and stereo monitoring facilities.

For live gigs, you can play guitar or synth through the instrument input, sing along using the XLR mic input and mix these two signals along with a stereo backing track coming into the rear-panel line level inputs. When recording at home, this stereo input can be used for monitoring your DAW's soundcard output. A pair of 4Ts will also work as an analog stereo mastering chain since the XLR mic inputs will accept up to +23.5dBu line levels.

The brushed-aluminum front panel is ergonomically laid out with 12 aluminum knobs, 10 push buttons, two 1/4" jacks, an on/off switch, and a wristwatch-sized VU meter that's amazingly easy to read. This is one densely packed front panel — yet it's easy to use.

STEREO MONITORING

There are two RCA input jacks on the rear panel for connecting the stereo output of a CD player, DAT deck, or your DAW's output to the 4T. The Mon level knob controls the monitor level (of this stereo input) to both the

4T's front-panel headphone jack and the rear-panel output jacks. The output signal of the 4T Channel also comes out of the stereo output jacks at the same time. It shows up in the center of the pair if you're monitoring them panned left and right. I connected the 4T output jacks directly to my powered monitors and later switched to two input channels on my console.

Since there's no separate output jack (without the monitor input), if you want to record the channel's output only, you have to push in the Mon button. This separates the 4T output from the monitor mix feed. The stereo monitor mix now appears only at the headphone jack and the 4T's output only at the rear-panel jacks.

DI AND MIC MIXING WITH EQ MAGIC

The front-panel DI jack's signal and the rear-panel mic input mix together using the Instrument level and the mic Gain controls. The DI's preamplifier has an input impedance of 10-megohm and accepts up to +15dBu levels. Passive and active guitar/bass pickups and touchy piezo transducers all worked great.

The Direct button, when out, routes the instrument signal through the rest of the channel for EQ and compression. When Direct is pushed in, the instrument signal goes straight to the left and right outputs. This would leave the 4T's EQ and compression on the mic input only.

A nice surprise is something called "EQ

Magic." This is a very musical sounding shelving EQ that boosts or cuts 100Hz and 10kHz simultaneously using a single control. This is no-brainer EQ — just turn it to where it sounds good. The control has a center-detented "flat" position and only works in the instrument DI path. (Too bad; it would be useful on the other inputs as well!)

The next section is the microphone preamp, which has no pad, and has up to 60dB of gain adjustable with a mini-stepped level control. The frequency response is stated to be 10Hz to 100kHz, ± 1 dB. There are phase/polarity flip and phantom power on/off push buttons. The transformerless mic pre is the same as in Trident's S20 and S40 channels and is configured around an Analog Devices or THAT Corp chip but with enhanced biasing to keep it Class-A.

TRIDENT EQ AND COMPRESSOR/LIMITER

The equalizer section differs from the Trident S40 only in that it has three bands instead of four. There is a sweepable midrange section with 1/2-octave Q covering 100Hz to 10kHz. The high-frequency shelving section has two corner frequency choices: 7 and 10kHz. Low-frequency shelving is available at 50 or 150Hz. All bands provide up to ± 15 dB boost/cut.

The 4T's compressor/limiter has two ratio choices: 4:1 and 30:1. Interestingly, the meter indicates gain reduction

THE "EQ MAGIC" CONTROL ENHANCES THE RESPONSE OF THE 4T'S INSTRUMENT (DIRECT) INPUT.



DESPITE BEING DENSELY PACKED WITH CONTROLS, THE 4T'S FRONT PANEL IS EASY TO GET AROUND ON.

even when the compressor isn't engaged. This is good for live sound use: pre-set the compressor and then drop it in on cue using the Dynamics button. Compression threshold is continuously adjustable from off to -25dBu with attack time variable from 0.1 to 40ms. Release time is also adjustable from 0.05 to 3 seconds. Like the S40, the meter changes backlit color from blue for output level to green for gain reduction when toggling the VU/GR button.

IN THE STUDIO AND LIVE

First up were direct recordings of a Fender Telecaster guitar and a Roland JV-1080 synth. I had loads of gain available for both tasks and found the direct sound clean and noise-free. The 3-band EQ sounded good and precisely took the muddiness out of an organ patch. I mic'd up the Tele's amp with a Royer R-121 and blended it with the DI by using the mic gain control. There was no noise buildup and everything was in phase and sounded fat.

Recording direct bass got me using EQ Magic — my bass player loved what that little knob did! At about the 2-o'clock position, it bumped up the bottom for fatness and the top for air and attack. More recording gear should have musical controls like EQ Magic.

I liked the 4T compressor because I could get both a smooth leveling amp sound (4:1) for a soft ballad and then, for controlling very dynamic bass pops and slaps on a funk/dance song, switch over to peak limiting (30:1).

I had good luck recording both my large-lunged, male rock singer and my quieter, girl balladeer with the 4T. I used a Neumann U 87 without a pad for each singer. The 4T never folded up (overloaded) once, and adjusting the compressor was easy although there's no separate make-up gain control for matching the levels between compressed and uncompressed. For vocals, the compressor can be as gentle or as aggressive as you want. Vocals used the (very typical) 4:1 ratio

and I got full-sized vocals immediately without working hard at all.

At the club, the 4T is the greatest! Singers love compression and a touch of EQ to get over the crowd din. Placing the 4T right up front within easy grasp of the performer worked well. He now had the immediate ability to mix in his backing track to taste, which really won him over.

My only wish would be an effects loop for inserting a reverb/delay unit. I used the clever Direct button pushed in so that the direct guitar signal wasn't affected by the hard limiter setting I had for the performer's vocal.

The 4T is a clever bit of analog design that expands the idea of the dedicated recording channel for application outside the control room.

This worked out perfectly since he usually plays guitar through a Line 6 Pod anyway.

ALL THERE!

Trident deserves to celebrate with this multifaceted unit. The 4T is a clever bit of analog design that expands the idea of the dedicated recording channel for applications outside the control room. The sound of a Trident mic preamp, EQ, and compressor and the ability to mix and monitor your DAW or backing track along with your mic and instrument — what more could you want?

EQ

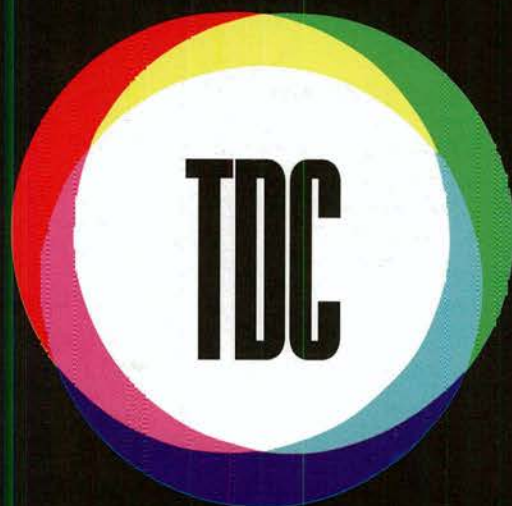
Strengths:

- Built-in monitor mixer
- Mic and DI internal mixing
- EQ Magic equalizer on DI input
- Complete recording chain in a 1U box

Limitations:

- EQ Magic only works on DI
- No insert effects loop
- No separate recording channel output jack
- No make-up gain on the compressor

leaders in visual technology



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by John Krogsh

PreSonus Central Station

Rackmount studio and headphone monitoring and talkback module

Type: Rackmount control room monitoring solution with built-in talkback microphone

Price: A\$1400 est

Contact: PreSonus, www.presonus.com

Monitoring audio inputs: three sets of balanced stereo 1/4", two S/PDIF (coax, Toslink)

2-Track outputs: L/R balanced 1/4"

Speaker outputs: three sets of balanced L/R 1/4"

Headphone outs: two stereo 1/4" outs, with separate level control

One of the Central Station's biggest selling points is its passive design: PreSonus designed the Central Station to be free of noise and coloration, so there are no integrated circuits or op amps.

Thanks to computer audio interfaces with software mixing features, many of us are going "mixerless" in our project studios. Instead of routing and monitoring signals through a hardware mixer, we're able to use software monitoring and breakout boxes with lots of ins and outs. Without a doubt, this kind of software mixing setup offers some advantages, but it presents some challenges, too. One of these is how best to route signals to control room speakers, headphones, and DAWs. A solution is some sort of monitor control unit, such as the PreSonus Central Station, which offers flexible input signal monitoring and a number of professional trimmings that put it ahead of the competition.

One of the Central Station's biggest selling points is its passive design: PreSonus designed the Central Station to be free of noise and coloration, so there are no integrated circuits or op amps, which can result in a more strident or "pinched" sound. And in fact, when I first patched the Central Station into my studio, I was pleasantly surprised by its open and smooth top end as compared to my Mackie 1604VLZ and Samson C Control (both of which use ICs, by the way). We're talking a subtle difference, but perceptible. It's not just hype — the Central Station is uncolored and clean as a whistle, which is what you

want in a monitoring solution. But there's more to the story, not the least of which is the routing capability.

OVERVIEW

Perhaps the first thing you'll notice from the front panel is its generous 30-segment metering. This proved extremely helpful for accurately gauging levels when recording signal from the main outs. No other box in this price range comes close, metering wise, to Central Station's resolution.

Some control room monitoring "hubs" are intended to sit on your desktop, resulting in a mass of cables draping off the edge and down on to the floor. The Central Station is rackmountable, so once your gear is patched in, all the cabling stays behind the rack.

What's more, PreSonus offers an optional remote control, which attaches via a DB9-pin connector and gives you access to nearly all the main unit's front-panel switching and level controls. It even has its own built-in talkback mic, so you don't have to worry about positioning the Central Station close enough to pick up your voice. The included cable is roughly 12', which should be adequate for all but the largest of project studio rooms. If need be, you can always connect multiple DB9-pin cables together with adapters. ▶

Central Station is equipped with five sets of stereo inputs (three 1/4" balanced analog, two 24-bit/192kHz S/PDIF—

one Toslink, and one coax), which amounts to a total of four possible sources that can be monitored by one of three sets of speakers. Interestingly, you can have sources patched into both digital inputs simultaneously. The unit automatically recognizes incoming sample rates and can switch between different fixed rates on the two inputs on the fly, which means you can monitor a DAT running at 16-bit/48kHz, and switch to monitoring a 24-bit/192kHz high-resolution source without any hiccups or having to adjust sample rate settings. Here again, this is one of several professional features that you'd be hard pressed to find on any other monitoring solution costing twice as much.

Each of the three speaker output pairs has its own trim control. In my opinion this is a necessity, especially if you like to monitor on consumer-grade speakers or through a home stereo as a "reality-check" reference. With other monitoring boxes, I've been frustrated by trying to match levels for comparison across several speakers, but with Central Station's speaker out trim controls, it's "set it and forget it."

In addition to feeding speaker systems, Central Station is intended as a means to bus mono and stereo signals to a recorder, so you can use it in place of a mixer, assuming you only record one or two channels at a time. On the rear you'll find left/right Main outs for patching into your multitrack, and left/right Cue outs, which can be used in conjunction with a headphone distribution amp.

It's important to realize the distinction: Cue outs have

YOU CAN SWITCH AMONG THREE SETS OF SPEAKERS: A, B, OR C. A AND B CAN'T BE ENGAGED SIMULTANEOUSLY; HOWEVER, SPEAKER C CAN BE ENGAGED WHILE SPEAKER A OR B IS ON — THE DOCUMENTATION SUGGESTS USING SPEAKER OUT C TO FEED A SUBWOOFER, THEREBY ALLOWING YOU TO MONITOR WITH AND WITHOUT A SUB AS YOU MIX.





CENTRAL STATION FEATURES RCA AND BALANCED 1/4" ANALOG INPUTS. NOTE THE XLR TALKBACK MICROPHONE INPUT, WHICH ALLOWS YOU TO USE YOUR OWN MICROPHONE IN PLACE OF THE CENTRAL STATION'S BUILT-IN MIC.

their own volume knob on the front, but there's no volume control for Main outs as they're meant to be patched into a recorder.

IN USE

I used the Central Station over the course of several projects, including mastering some of my commercial music spots for a demo reel, and producing several new tracks. As mentioned earlier, I was more than pleased with the sonics. In one case I A/B'd the output of my audio interface's analog main outs and the same signal source material routed into the Central Station's S/PDIF in. The signal converted from Central Station's digital input had slightly better depth and separation. Color me impressed. Bottom line: There's a purity to the Central Station's sound that, to my ears, is a notch or two above what you're likely to find with other affordable mixers or control room monitor sections.

I have a few complaints, though. There's no on/off switch, which is a bit annoying. As for the tactile feel of the

knobs and switches, the remote's talkback level knob was wobbly and loose.

More significantly, I have doubts about the build quality, and here's why: The power supply for the first unit sent to me failed. PreSonus sent a replacement, which also failed. At this point, I suspected something wrong with the Central Station's inner workings, so a second unit was sent. After about eight days, this unit failed. When I powered it up, the meters were completely lit up, even when no input signal was patched in. I spoke with several PreSonus reps, all of whom were just as stumped as I was. According to them, they've had no such problems reported by any other users. Maybe my studio is the Bermuda Triangle of gear failure (although no other device has failed).

CONCLUSIONS

I can't say for certain what caused all the weirdness I experienced. I searched online to see if users were complaining of similar problems, but I found no evidence of this.

So I'm left undecided. On the one hand, the Central Station sounds great, and has some features that put its competition to shame. It's a well-conceived box that offers an impressive amount of monitoring control. But then there's the whole question of quality control.

Fortunately, PreSonus stands behind their products, so if you do end up with a faulty unit, they'll be happy to repair or replace it without hassle. **EQ**

Strengths:

- Passive signal path design for low-distortion and noise
- 30-segment signal metering
- Optional remote control
- Two digital input sources can be patched in simultaneously, with monitor switching from front panel

Limitations:

- No surround monitoring
- No power switch
- Multiple input sources can't be monitored simultaneously

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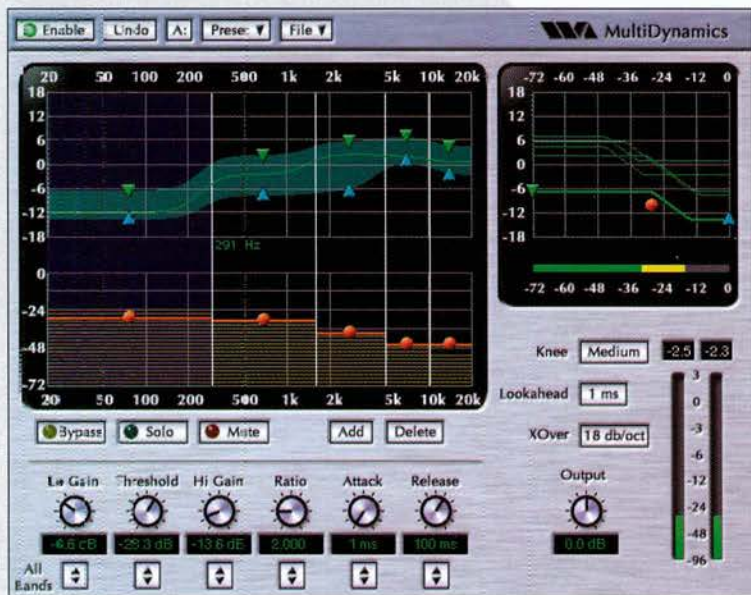


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BY KEVIN OWENS



Wave Arts MultiDynamics Multi-band dynamics processor plug-in

MultiDynamics (\$300 est) is a multi-band dynamics processor useful for mastering, noise reduction, volume maximization, de-essing, and special tweaks. The plug-in — Mac (OS 9: VST, MAS, RTAS; OS X: AU, VST, MAS, RTAS) and Windows (DX, VST) — provides up to six bands with independent compression or expansion/gating per band, and features per-band bypass, solo, and mute controls; visualization of input levels and dynamic EQ response; and mono or stereo operation.

Wave Arts, www.wavearts.com.



URS FullTec EQ 5-band EQ

Designed for and inspired by Digidesign's Icon console, the **FullTec Program EQ (\$999 est for TDM version; \$499 est for native version)** is a 5-band "super program" EQ. One band digitally recreates the Pultec EQP-1's low-frequency shelving with simultaneous boost and attenuation; three bands of peak EQ emulate the midrange boost and attenuation of the Pultec MEQ-5, and the high-frequency boost of the Pultec EQP-1a; and the fifth band features high-frequency shelving with simultaneous boost and attenuation. FullTec EQ is available on its own or as a part of URS's Everything Bundle (**\$4,500 est TDM; \$2,300 est Native**).

Unique Recording Software,
www.ursplugins.com.

Drawmer DSL424 Gate/compressor

The **DSL424 (\$1699 est)** combines two frequency-conscious noise gates and two soft/hard knee compressors with variable threshold limiting in a 1U, 4-channel box. Each channel can be operated as a hard or soft gate with switchable attenuation; in hard mode the DSL424 boasts fast but stable triggering and a specialized release contour suited to drums and percussion. In soft mode it functions as an expander capable of handling vocals and submixes. Other features include frequency-selective gating, filter-setting monitoring, a high-resolution bargraph display, balanced XLR I/O, and two 1/4" key inputs.

Drawmer, U.S. dist. by TransAudio Group, www.transaudiogroup.com.



Popless VAC-S3.5 & VAC-S6

Voice screens

Designed to control pops and sibilance before they reach the microphone, both the 3.5" **VAC-S3.5** and the 6" **VAC-S6** voice screens (**\$120 each**) — "VAC" stands for "variable acoustic compression" — clamp onto the suspension mounts of most spider-type microphones and feature a low-profile mini-gooseneck adjusting system for precision placement. Two acoustic screens are included with each pop filter, one for minimum filtering and one for increased filtering; you can control the amount of pop and sibilance filtering by using just one screen or adding the second screen and adjusting the distance between them.

Popless Voice Screens, www.popfilter.com.



Dynaudio BM 5A

Active nearfield monitor

The latest addition to Dynaudio's BM series is the **BM 5A (\$2,500 est per pair)**, a compact, 2-way active monitor that's powered by two 50-watt amps. It features a 6.7" woofer and a 1" soft-dome tweeter (both manufactured and tested in Denmark), and has a frequency range of 50Hz–21kHz. Its small footprint (7.3" W x 12.5" H x 12.5" D) makes it well suited for project studios, edit suites, and other space-challenged environments.

Dynaudio Acoustics, www.dynaudioacoustics.com.

ROSCO 1700 FOG MACHINE

This versatile machine has many applications in theatre, clubs and rental

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by Lee Flier

Yamaha SPX2000

The next generation of Yamaha's reliable favorite

Type: Multieffects processor

Price: \$2,500 est

Contact: Yamaha,

www.yamaha.com/proaudio

CONNECTIONS

Analog: stereo 1/4" TRS and XLR balanced inputs and outputs (selectable +4 dBu or -10dBu)

Digital: AES/EBU (XLR)

Other: USB, MIDI in, MIDI out/thru, word clock in (BNC), footswitch in

Sample rates: 44.1, 48, 88.2, 96kHz

Bit depth: 24-bit

Dynamic range (analog): 106dB

Presets: 97 factory, 25 "Classic," 99 user

Display: 5-color, 2x16 LCD

The Yamaha SPX series has long been a workhorse in professional studio and stage applications. The latest in the series, the SPX2000 represents a very well thought out and substantial upgrade, accomplished in a way that shouldn't alienate previous SPX users. It features an improved DSP engine, a new set of reverb algorithms, and a few other nifty additions such as color-coded backlighting on the LCD, which could really be handy for those using the unit in live stage applications. In general, Yamaha is well known for steadily improving and upgrading its products while continuing to support their existing user bases, and with the SPX2000, they have once again accomplished just that.

THE INTERFACE

The SPX2000 comes with most of the connections you'd ever need, including switchable +4/-10 level on the analog input and output connections (both XLR and TRS), AES/EBU digital connections with selectable sample rate from 44.1 to 96kHz, word clock, and MIDI.

Unfortunately, no S/PDIF connection is included, which was a disappointment to me, as my Yamaha AW4416 DAW doesn't have AES/EBU I/O. Fortunately, the SPX2000's converters are quite good, and I was satisfied with the quality through the analog connections.

True to SPX form, the front panel interface is wonderfully easy to use and very well laid out. One set of buttons selects, recalls, and stores presets while another set adjusts the parameters of each effect. Although the unit can be controlled via MIDI, using it the "old-fashioned way" is a breeze. The buttons are solid and sturdy, and Yamaha has done well by making the most used buttons the largest, while those not used as often (such as the bank selector) are smaller and out of the way. The 2-line, 16-character-per-line LCD is easy to read and uncluttered as well. Setting the tempo for delays and other tempo-based effects is simple using the front panel Tap button or an optional foot switch, as well as the usual method of entering numeric delay lengths. There's a

"compare" button that allows you to switch back and forth between the original preset and your edited one.

Effects parameters are easy to access, especially considering the number of parameters available for many of the presets. Rather than forcing you to scroll through a long list of parameters to get at a particular one, only the most commonly used parameters are listed by default. The more esoteric parameters are accessed by selecting the Fine button. Storing your tweaked sounds in the user preset bank, which will hold up to 99 custom presets, is simple as well. In general, I found the front panel well organized and intuitive to use, and users of previous SPX units will find it improved yet still familiar.

THE SOUND

There are 97 effects in the SPX2000's preset bank, including 17 new reverb programs based on Yamaha's new "Rev-X" algorithms, which the company says have been redesigned from the ground up. Also included is a "classic" bank featuring 25 sounds based on early SPX units.

Having used Yamaha's processors since the '80s, the biggest surprise to me was the quality of the reverbs. Even those based on the older algorithms sounded much improved over the previous units, possibly because of the



THE LCD CHANGES COLOR TO INDICATE THE TYPE OF EFFECT BEING USED.



THE SPX2000'S FRONT PANEL FEATURES A VERY EASY TO USE, UNCLUTTERED INTERFACE.



THE SPX2000 OFFERS A WIDE SELECTION OF I/O AND CONTROL CONNECTIONS

improved DSP engine and converters. Many of them sounded surprisingly natural, rich, and open. As someone who favors organic and vintage sounds, I'm hard to please when it comes to digital reverbs, but I found many of the 'verbs on this unit made me happy. The "Presence Reverb" gave a nice *Abbey Road* quality to ensemble vocal tracks — probably the best plate sound I've heard from a Yamaha box. Many of the room emulating 'verbs sounded natural and unobtrusive in a good way — i.e., like a room, not like an effect. Of course, there are also plenty of decidedly "unnatural" 'verbs such as gated reverb, reverse, and so on. These are the sounds that made Yamaha reverb processors famous, so if it's wild and wacky effects you're looking for, you won't be disappointed there either.

The delays are of very high quality, and I was surprised at the naturalness of some of the presets, such as vocal doubling. There's a variety of both stereo and mono delays, all of which are highly configurable to your tastes. There's also a large number of pitch-shifting effects which are

loads of fun. Presets such as "Grumpy Flutter," "Halo Comb," and "Roger on the 12" are great for producing heavily effected sounds such as harmonizing, octave dividing, and space alien noises. Great if you're doing post production, psychedelic or electronica tunes, or just looking to add spice and interest to a track. I enjoyed using these in a very un-subtle way on vocals, guitars, and keyboards, and the unit allowed me to do this without degrading the overall sound — something other inexpensive processors won't do.

The classic effects such as chorus, flange, phase shift, and rotary are clean and quiet. Depending on your tastes and application, you may or may not find them to your liking. As a guitarist looking for fat vintage sounds, these effects didn't do it for me — they were too clean and brittle. Those looking for cleaner and more modern sounds will love these effects, and keyboardists may find them more useful than guitarists or vocalists. It's also possible to tweak these presets, producing infinite varieties of sound. Likewise, I didn't find the

SPX2000's distortion or amp simulator presets useful — they just weren't "grungy" enough for my taste. I found them a little too "slick" for dirtying up a snare track.

My biggest gripe with the unit was the Bypass switch. Unlike some competing processors, which have multiple bypass switch modes, selecting the one on the SPX2000 simply turns off the effect, without the ability to mute the input signal. Therefore, what you'll hear is the original signal combined with the signal that was sent to the effect. If you're using analog connections, the latency introduced by the conversions to and from the unit means that the combined signals have a very noticeable "phasiness." In some situations, this renders the bypass mode essentially useless, as you can't do an actual comparison between the dry and effected sounds. Of course, there's a work-around: compare by simply muting the SPX's effect return channels on your mixer.

Yamaha also offers a software interface for this unit, the SPX2000 Editor, for Windows or Macintosh

computers. By connecting the unit to your computer via USB, you can edit effects parameters and also back up and restore your custom presets in libraries. This is a very useful feature, as it allows you to save different effects libraries for different projects, transfer your sounds to other SPX2000s in other facilities, and of course back up your work in case your unit's memory is damaged.

THE VERDICT

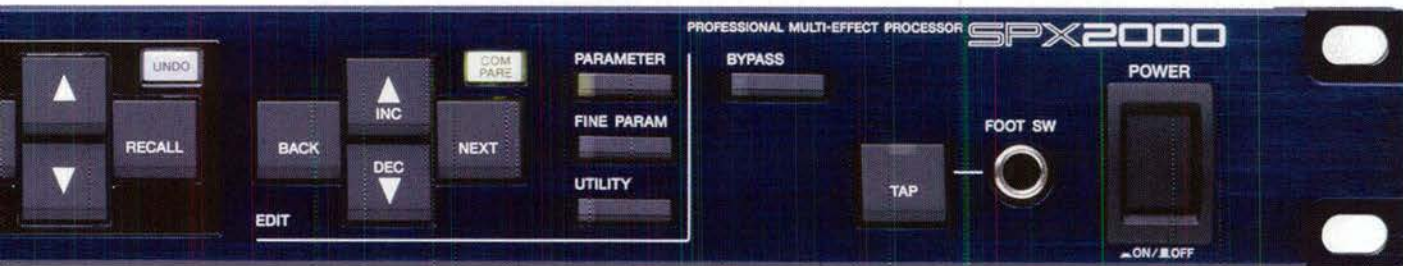
Overall, the Yamaha SPX2000 multieffects processor delivers an astonishing variety of high-quality effects in a single rackspace, at a reasonable price. It represents a big step up from many plug-in effects and cheaper outboard boxes. While it may not be your first choice for every single specific effect, the SPX2000 is a reliable "Swiss Army knife" that can serve as the "go to" box in a wide array of applications. **EQ**

Strengths:

- Excellent price-to-performance ratio
- Elegant, easy to use interface
- Wide variety of high-quality, highly configurable effects

Limitations:

- No S/PDIF connection
- Single-mode bypass switch can't mute input signal





The Primera Signature Z1 CD/DVD printer wins an EQ Award for its high print quality, ease of use, and great value.

by Mitch Gallagher

Primera Signature Z1

Price: \$280 replacement ribbon (black, blue, red, green are available), \$40 each or \$499/12. Printable CD-R, \$99/100; DVD-R (4x), \$90/50, DVD-R (8x), \$130/50

Contact: Primera Technology, www.primera.com

Strengths:

- Great print quality
- Compact
- Easy to use
- Inexpensive

Limitations:

- Monochrome printing only
- Mac support not yet available



Given how many CD-Rs, and lately, DVD-Rs, many of us burn, wouldn't it be nice to have a more professional looking label solution than CD markers and stick-on labels? There are CD printers out there, but they tend to be expensive. Primera Technology has a much more cost-effective solution in their \$139.95 Signature Z1 thermal printer.

The Z1 is tiny — only an inch or so bigger than a DVD case.

It connects to your Windows PC via USB 1.1 or 2.0. The included CD contains the drivers and print application. Installation

on my machine went off without a hitch.

The software app provides a template with up to four print "areas" on the disc (top, bottom, left, and right) where you can type text or import graphics. Text layout can be curved to follow the disc shape or straight. You have control over font, font size, bold, italic, and a few other text parameters.

The Z1 uses a thermal transfer process. Ribbons are available in black, blue, red, or green. Only one ribbon can be installed at a time, so you're limited to monochromatic printing. The ink is waterproof (I tried washing it off) and doesn't smudge, even immediately after printing. You can, of course, scratch off the printing if you try.

Printing is reasonably fast — about 26 seconds per

"area," so a complete disc should take less than two minutes to print. Primera says that each ribbon can print at least 200 "areas," which works out to around a dime per area (at ribbon MSRP; the exact number depends on how densely each area is printed). The 200dpi print quality is crisp and detailed. You can print small fonts and tiny images without problem. Continuous blocks of print come out nice and solid.

I love this little gadget. It's the easiest, least expensive way I know of for getting truly professional looking CD labels. It would be nice if it could do multi-color printing, but hey, for under \$140 list price, I'm not going to complain much. The Signature Z1 is a definite EQ Award winner. **EQ**

PSP Nitro

by John Krogh

Price: A\$299 est

Contact: PSP, www.pspaudioware.com

Strengths:

- Impressive sonic modulation options
- Flexible signal routing
- Extensive modulation control
- Large library of utilitarian and inspiring, creative presets

Limitations:

- None to speak of



Nitro is billed as a filter plug-in, but make no mistake: The term "filter" doesn't do justice in describing what's possible with this sonic blender. First, the basics. It runs under Mac OS X and Win XP, and is compatible with AU, VST, RTAS, and DX. Nitro is equipped with four effect processor sections, called operators, each of which can employ one of 17 algorithms, most of which cover a range of filtering options.

Lowpass, highpass, bandpass, Moog models, comb filtering, etc. are all on-hand. In

addition, you'll find bit reduction, down sampling, waveshaping, phase shifting, multitap delay (with separate times for left and right), auto

panning, and "stereoizing" options.

Signal can be fed from one section to another, but we're not just talking your conventional serial or parallel processing. No, it goes way beyond this. Each operator can be routed serially and in parallel in a variety of ways. For example, you can split a signal off to separate operators with independent level control, create feedback loops, pile filter on top of distortion on top of filter, and so on.

Along the top of the center panel is a tabbed menu, where you can access pages for setting up signal routing and modulation options, choosing operators, tweaking envelopes, and selecting presets. From the CFG (configuration) tab, for example, you'll find a signal path matrix where you can define custom routings, or

choose from 11 predefined schemes.

One of Nitro's strengths is that in addition to a wealth of built-in mod sources and destinations, many aspects can be adjusted in real time using standard MIDI controllers. There's even a "learn" function.

I found it completely intuitive and easy to work with — creating custom patches was a snap, but to be honest, I had little desire to roll my own, since Nitro ships with 192 presets divided into three banks of 64. Whether I was hunting for wild ways to mangle drum loops, sprinkle a bit of chorus onto an acoustic guitar, or add interest to a lead vocal, I found plenty of patches that fit the bill. In short, if you're in search of new sonic "special sauce" to add to your plug-in collection, Nitro should be first on the list. **EQ**

by Mitch Gallagher

Digidesign ReVibe

The next step in room-modeling reverb

Type: Modeling reverb plug-in

Price: A\$1999 (est)

Contact: Digidesign,
www.digidesign.com

Platform: Mac OS X, Windows XP

Format: TDM

Minimum system requirements: Pro Tools HD Accel, Pro Tools TDM 6.2 or higher

Copy protection: iLok

Version reviewed: 1.0

Sample rates: up to 96kHz

Channels: mono, stereo, LCR, LCRS, Quad, 5.0, 5.1

Instances/chip: 2 (44.1/48kHz) or 1 (88.2/96kHz)

Room types: 200+, in 14 categories:

Studios, Rooms, Halls, Theaters, Churches, Cathedrals, Plates, Springs, Chambers, Ambiences, Film and Post, Large Spaces, Vintage Digital, Effects

Tested with: Macintosh dual-2GHz/G5, OS X 10.2.8, Pro Tools HD2 Accel, Pro Tools v6.2

For many years, plug-in reverbs sounded good, but many users felt that the software 'verbs couldn't quite keep up with their hardware counterparts — the quality just wasn't there. But recently, a new generation of convolution and modeling reverb plug-ins have hit the market. And we've finally got the computer/DSP horsepower available to run those plug-ins without sacrificing the performance of our DAW systems.

Among the new offerings is ReVibe from Digidesign. ReVibe is a TDM-format plug-in that runs exclusively on Digi's Accel hardware. The plug-in offers a broad range of sonic ambiences: 200+ different modeled rooms divided into 14 categories such as Studios, Halls, Plates, Churches, and so on.

This type of plug-in requires a lot of juice to run, so it's no surprise that even on the state-of-the-art Accel chips, you can only run two regular (44.1/48kHz) or one high (88.2/96kHz) sample rate instance. Of interest, though: the same DSP is required whether you are running a mono, stereo, or

multi-channel version of ReVibe (more on this below).

TWEAKABILITY

You're given great control over the reverbs produced by ReVibe. You can set the level, spread, and predelay for early reflections. You have much more control over the reverb tail. First, you can set the "Coloration" of the tail; which applies a complex filter to the tail, modeling the response of various rooms and effects.

A graphic display gives you access to a 2-band EQ, and "Color" parameters which determine the decay time of high and low frequencies. The Contour display shows the current "shape" of the reverb, both early reflections and tail.

More "traditional" reverb parameters are also accessible, such as decay time, diffusion, and so on. A stereo chorus can be applied to the reverb tail, and a stereo width control uses phase inversion to create everything from narrow stereo to extremely wide stereo 'verbs.

No matter how many channels of reverb you ask

for (mono, stereo, etc.) all five inputs and outputs on ReVibe are always active. In stereo, for example, you can mix the center channel in as a phantom center image, and you can add in some of the rear channel signal for additional depth to the ambience.

LIKE BEING THERE?

What matters most, of course, is the sound of the plug-in's reverb. Fortunately, ReVibe delivers. You can create everything from dripping, luscious washes to thin metallic ringing to short, tight ambience. The sound is quite realistic (unless you choose to make it artificial).

ReVibe is far from a 1-trick pony. It excels at creating different kinds of sounds, each of equally high quality. Because of this, it's a good value despite its relatively high price — you're not just buying a few presets you can only use in certain situations.

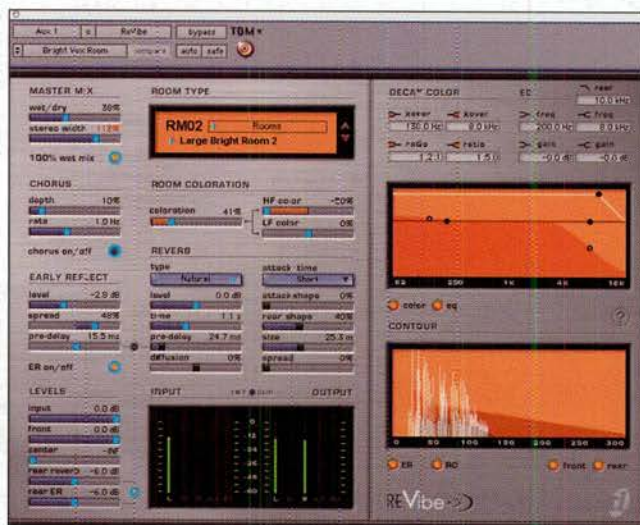
Everyone's impression of what an ideal reverb should be is different, and is context-sensitive — it changes depending on what you're processing and on the song the 'verb is sitting in. But with its tremendous versatility, ReVibe can cover a lot of ground. In every case I was able to find a ReVibe reverb that worked — and that's the whole point. **EQ**

Strengths:

- Broad range of included rooms
- Powerful sound-shaping options
- Easy user interface
- mono-5.1 channels
- Excellent sound quality

Limitations:

- Only runs on Accel hardware
- No support above 96kHz sample rate



REVIBE'S USER INTERFACE IS CLEAN AND SIMPLE, BUT OFFERS A LOT OF AMBIENCE-TWEAKING POWER. THERE'S A GREAT DEAL OF CONTROL FOR SHAPING AND COLORING THE REVERB TAIL.

by John Krogh

CM Labs SixtyFour

Get a handle on your studio's signal routing

Type: Automated analog audio switcher/router

Price: A\$4,999 est

Contact: CM Labs, www.cmlabs.net

Audio I/O: 32 balanced inputs and outputs divided into banks of eight channels on DB25 connectors

Memory locations: 90

Other interfacing: RS-232 and MIDI I/O for remote control of routing functions

Dynamic Range: 119dB

Noise Floor: -92dBv

I've used patchbays on and off through various incarnations of my studio since I purchased my first digital multitrack recorder (an Alesis ADAT) twelve years ago. Though I had no regrets about selling the old blackface, I just can't part with certain pieces of gear. And while I do most of my mixing "inside the box," I still prefer incorporating outboard dynamics, EQ, and effects. Sometimes there's a certain inspiration factor I get from working with a hardware tube compressor or Neve EQ, for example. In other situations, I may find myself reaching for that favorite flanger algorithm from my trusty Roland RSP-550 because I haven't found a plug-in equivalent.

It may be considered "old school" to some, but I like using my outboard. However, recently it's become an increasingly "messy" process compared to the ease of working entirely inside a software recorder. (Maybe I've finally been spoiled by instant recall.) Since I've added CM Labs'

SixtyFour 32x32 audio router, it's all changed. Simple in its purpose, this admittedly unglamorous (yet convenient) piece of gear has transformed the way I work in my studio. The SixtyFour has replaced my patchbays and has made interfacing with all of my outboard an uncluttered, uncomplicated process.

OVERVIEW

Housed in a 2U case, the SixtyFour is essentially a point-to-point audio switching "hub" for interfacing line-level gear without having to physically patch and repatch. Routing a source (input signal) to an output destination is easy: Press the input signal's source switch, then press the destination switch for whatever out you want it sent to. Sources and destinations can be grouped in stereo pairs, with control for left/right balance — convenient if you work with 2-channel devices and synths.

The rear panel sports four female and four male 8-channel DB25 connectors (all

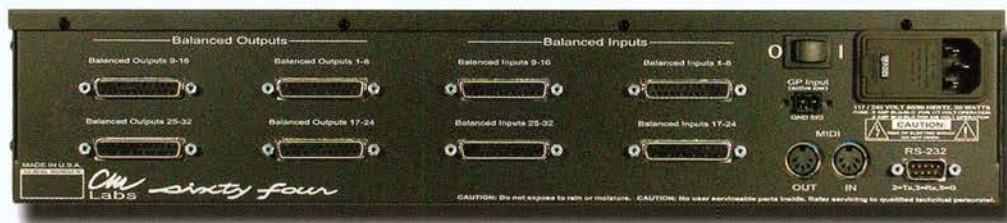
balanced), for a total of 32 inputs and outputs.

Any input can be routed to any number of outputs — great for multing snares and kicks — but the SixtyFour won't sum input signals. (If you're looking for external summing, you'll have to look elsewhere.) There are 90 memory locations for storing patch routings, and each routing assignment can include gain settings (+10/-96dB) for each input and output — handy for optimal level matching among your gear.

The SixtyFour can't switch an unbalanced signal to balanced (or vice versa), but by using the gain control for an input and its associated output, you could effectively raise a -10 signal to +4. This is important to note if you have consumer gear, such as a CD or DVD player, that you want to incorporate into your pro-level monitoring setup.

Up to four SixtyFours can be daisy-chained via the RS-232 port or via MIDI I/O for patch control over a whopping 128 ins and outs. (Note: Audio can't be sent

SIXTYFOUR'S FRONT PANEL CAN BE "LOCKED" TO PREVENT CHANGING PATCH SETUPS BY INADVERTENTLY BUMPING THE CONTROLS. THE LED METERING BELOW THE FOUR MODE BUTTONS CAN SHOW INPUT OR OUTPUT LEVELS (SWITCHABLE FROM METER MODE).



MULTIPLE UNITS CAN BE DAISY-CHAINED FOR PATCH CONTROL VIA MIDI OR THE RS-232 CONNECTOR.



across multiple SixtyFours via MIDI or RS-232, but you could always reserve some inputs and outputs on each machine in a network so you can patch a signal from one SixtyFour to another.) “Slave” units can be controlled from the “master” SixtyFour. For remote operation, you can use CM Labs’ MotorMate Console, or you can send hexadecimal MIDI data to switch presets, change levels, etc. I didn’t have a MotorMate for the review, nor did I have the patience to program and send hex data.

It’s a little unrealistic to expect users to stop in the middle of recording or mixing to create a hex program change — I’d love to see a software utility for handling SixtyFour’s hex programming

sources and destinations. I found the resolution of the 12-segment LEDs enough to get an idea where my levels were at, but ultimately I relied on my DAW’s metering for more accuracy when recording.

IN USE

I was first turned on to the SixtyFour when I was preparing to go on tour. I needed an audio switcher that I could use to switch between my two computer playback systems, which were running in tandem. We were traveling to Germany, Thailand, and China, which meant my gear was going to get a real-life road-style workout. I’m happy to report the SixtyFour functioned flawlessly and made it home safely

couple of months, jiggling and tugging on cables, and I haven’t had any problems with the SixtyFour’s interfacing.

Once I had my racks wired into the SixtyFour, I decided to print custom labels for the four I/O “scribble strips” on the front panel. CM Labs has an Excel spreadsheet template for the labels on their website, but I wasn’t able to open it on any of my four Macs. So instead, I measured the strips and made my own template in less than ten minutes.

With everything in place, I started creating basic recording and mixdown presets. I made one that took the line output from a tube mic preamp into a compressor, and from there into one of the inputs on my computer’s audio interface. I made a similar preset that split the output from the preamp to a reverb unit and the compressor — that way I could send vocals through reverb and monitor this in headphones while tracking the signal dry through the compressor. I then turned my attention toward mixdown presets.

I have a Folcrom 16-channel summing mixer that also uses DB25 connectors, so one bank of SixtyFour’s outputs were fed into the first eight channels on the Folcrom. This way I was able to process four stereo subgroups from my computer using various hardware effects and return them to the Folcrom via the SixtyFour.

I worked on several projects, recording and mixing using nearly all of my outboard — a first in probably two years! As I write this it’s been over two months since adding the SixtyFour, and I couldn’t be happier. It’s given a new lease on life to my hardware processors. If you’re anything like me, and you prefer working with outboard but hate the hassle of patch cords and conventional patchbays, CM Labs’ SixtyFour could be the answer. **EQ**

Strengths:

- Easy to use
- Multiple units can be daisy-chained
- Lots of gain
- Input sources can have multiple output destinations

Limitations:

- Inconvenient MIDI remote control programming

The CM Labs SixtyFour has given a new lease on life to my hardware processors.

behind the scenes. Of course, if you simply *must* have remote control, one less obtuse option would be to set a hardware MIDI controller to send hex patch changes (assuming your controller is capable of this). In any case, I found it easy enough to work from the front panel. (According to CM Labs, a free Windows-only utility for programming the SixtyFour remotely should be available by the time you read this.)

Speaking of which, creating routings, setting levels, and saving presets from SixtyFour’s Spartan front is simple and straightforward. From left to right, the four square black buttons are for accessing Save, Route, Level, and Meter modes, respectively. A single continuous rotary encoder (*i.e.*, knob) is used for dialing in levels and selecting presets.

Metering can be engaged for both

without malfunction. Suffice to say, I was impressed by its build quality.

When I returned home it was time to wire up my three racks of gear. Not having a supply of DB25 snakes on hand, I toyed with the idea of making my own — a pinout diagram is provided in the documentation, and CM Labs offers DB25 connectors from their website. In the interest of getting up and running quickly, I opted to go with prebuilt snakes from Pro Co. With my snakes in hand (no jokes, please) I began patching the many gozintas and gozoutas. I noticed the connectors on SixtyFour’s rear panel moving within the chassis as I connected the snakes, which caused me some initial concern over whether the cables or connectors might work loose. My fears were not borne out, however. I’ve gone behind my racks a number of times in the last

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Sydney: Feb 21. 2 nights/week for 15 weeks. Mon and Wed, 6.30 - 9.30pm
Melbourne: Feb 7. Mon and Wed nights, 6.30 - 9.30pm, for 15 weeks
Brisbane: 3 x one week blocks, starting Tues 29 March for 5 full days, thence Mon 20 June to Fri 1 July inclusive.
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Sydney: 2 nights week (Tues/Thurs), 3 weeks. Start Tues 14 March.

Stage OH&S course

Cost: \$180. Bookings: 1-800-635-514
Sydney: 2 nights, Feb 21 and 23.
Melbourne: 2 nights, Feb 7 and Feb 9.
Brisbane: Tues 29 March. 1 full day
Adelaide: Mon April 18. 1 full day.



ADELAIDE AFFILIATE:
Dean Lewis.
Facilities supplied thanks to Novatech Productions



BRISBANE AFFILIATE:
Steve Beck.
Facilities supplied thanks to Brisbane Sound



MELBOURNE AFFILIATES:
Tiny and Robyn Good, ShowTech Australia, Braeside

Special thanks to these supporting organisations for assistance with facilities or equipment in the last year: Lots of Watts • Chameleon Touring • Norwest Productions

- Fairlight • Hillsong Church • Technical Audio Group • ARX • The Resource Corp • Yamaha
- Australian Audio Supplies • Mackie • Jands • LSC • Total Concept Projects • Amber Technology
- EVI Audio Australia • Brisbane Sound • SOS Communications • Riverside Theatres



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Sound Master Class 1 (nights) Learn 3 mixing consoles incl 1 x large format digital. 10 x Tues / Thurs nites, start 8 March. (Pre-requisite: Basics or Basic lighting experience.)

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The Plug-in Problem

T hird-party or “add-on” plug-ins are great. They give our favorite DAW applications additional power, flair, and creative spice. However, because they’re essentially little applications installed within a host application, unexpected problems can sometimes occur.

Many plug-in developers offer demos so you can try their product for a limited period of time. When these plug-in demos expire, an alert typically appears telling you that the trial period has expired and to either remove or purchase the product. In rare cases, these demo packages can cause problems, such as application freezes.

Other problems occur when a plug-in or bundle of plug-ins is either corrupt or incompatible with your software. If symptoms arise where your host application

In Mac OS X, it’s easy to remove plug-ins . . . once you know where they exist in your system.

has a problem while using or loading a plug-in, you might experiment with disabling (at least temporarily) certain plug-ins. Here are some tips on finding, disabling, and removing plug-ins when you have a problem.

MAC

In Mac OS X, it’s easy to remove plug-ins . . . once you know where they exist in your system. For most applications look in the following location (see Figure 1): *Macintosh HD > Library > Audio > Plug-ins*.

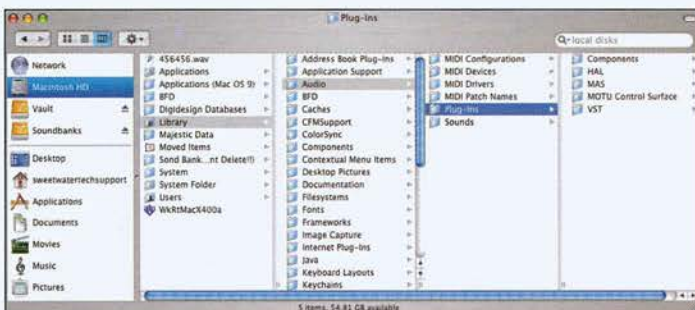


Figure 1

Check in each folder (“Components,” “MAS,” “VST,” etc.) for plug-ins that you’ve added (see Figure 2).

These folders will also contain plug-ins that came with your host applications, so check documentation to see what’s included. You can drag any questionable plug-ins to your desktop, then try launching the application again. If you have no errors or problems, you’ll know that one or more of the items you removed either had a problem



Figure 2

or its demo period expired. If you know a plug-in is bad, you can drag it to the Trash to delete it. If it’s a plug-in you’ve purchased and removing it helped your problem, check the developers website for updates and other solutions, or contact tech support.

For Pro Tools 6 users, plug-ins are stored elsewhere. In recent versions, an alias of the Pro Tools plug-ins folder has been placed in its applications folder (*Macintosh HD > Applications > Digidesign > ProTools*).

WINDOWS

Don’t worry, I haven’t forgotten Windows users! The most common way to remove demo or problem plug-ins is to click *Start > Control Panel* and choose *Add/Remove Programs*. Read through the list and find plug-ins or their developer names. Choose an item and remove it to uninstall.

Some plug-in developers include their own uninstaller for their product. You can check by clicking *Start > All Programs* and looking for an uninstaller for the plug-in in question.

BE LEGAL

One last tip: Cracked or illegally copied plug-ins are bad for reasons beyond the moral/legal issues. Plug-ins are frequently “cracked” by changing significant parts of their programming code. I’ve seen entire DAW’s go down thanks to one cracked plug-in. Trust me, it’s not worth it. Remove cracked plug-ins and be the better for it. **EQ**

Todd G. Tatnall is the Senior Tech in Sweetwater’s Technical Support department.



The Lighting section of CX magazine

High End go it alone

High End Systems are without representation in Australia, after splitting with distributor ULA. The two firms issued a press release after the LDI trade show late last year, and are now saying nothing else.

First, the release:

After more than three years of proudly representing High End Systems in Australia and New Zealand and successfully launching new products including the innovative Catalyst and DL-1 systems, ULA and High End Systems business have grown different directions. Says ULA's Managing Director Cuono Biviano, It has been a difficult decision to make, but one that must be made. With continuing and rapid technology development in the industry, it is not only important to be at the leading edge, but vital to be highly competitive to meet clients requirements across the spectrum. To this end we must continuously focus. That said, we do wish High End all the best for the future."

In the short term, ULA will continue to provide service assistance to clients, with High End Systems to announce arrangements for ongoing

(continued on next page)



Gronk of the year award

The only thing more dumb than climbing a 3 metre truss section that has no baseplate is doing it without any kind of safety harness. Oh, and also emailing the photo to CX. We decided to save this moron the grief by covering his stupid face. Hopefully if he is still alive and didn't jump or fall, he can reflect on the things boys do, and grow up.

KIDS, don't try this at home.

Chameleon expand into massive complex

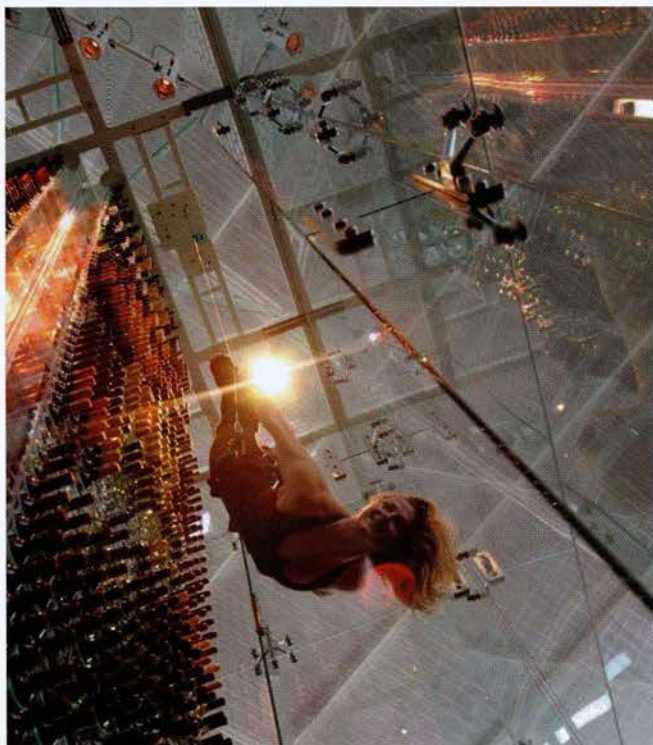
The picture doesn't really show the scale. The new Chameleon Touring Systems facility in Sydney's Erskinville is large. Very large.

According to Chameleon boss Tony Davies, (pictured at right) the firm had all its inventory spread around the previous premises, under different roofs. At presstime Chameleon owned 950 moving lights 'of current manufacture', not counting waggly mirrors.

They recently added 100 Vari-Lite s, making VL a strong second runner against their fleet of Mac 500/600 and 2000 fixtures.

The new facility has a yard which more than accommodates the four or five pantech's they own, plus separate truck access for smaller loads and driveway hires. Not evident in the photo are separate areas for ALE (manufacture) and the moving light hospital.





Wine not beer as well?

We like this idea! Away from the theatre and into the public domain, Stage Technologies Ltd has provided wine waiters with the power of flight. A new 6.5 tonne glass wine tower, which holds over four thousand bottles of wine, has been designed and installed by Edwin Shirley Staging for the Radisson SAS hotel at Stansted airport.

To order wine at this venue is to initiate a live aerial performance, where 'wine angels' fly up the face of the 13-metre tall tower and descend with your desired bottle. To achieve this Stage Technologies have supplied four BigTow winches that are controlled by radio linked operator pendants. These handheld, wireless pendants enable the wine angels to control their own movements up and down the tower. Their 2-point hip harnesses allow them to turn upside-down and swing from side to side whilst performing choreographed routines.

Wine Angel Lorraine Sadler is an experienced performer, having worked on a flying trapeze and high speed flying at the Millennium Dome. The wine tower differs from her previous experiences and although the height is not a problem, the tight space makes it harder to choreograph and manoeuvre, however over time they have discovered many more imaginative ways of working.

"A different experience, a different challenge!" comments Lorraine, "We mostly control each other, as it is easier to perform and great fun, the customers are really impressed, gobsmacked! It's unique"

The main difference from theatre Performer flying systems is the complexity of the control and operation. The wine tower needed simple and easy control, up and down and stop when the button is released, a huge contrast from the sophisticated software Stage Technologies have developed for performances such as those at the Millennium Dome and currently in use on Mary Poppins in the West End and Cirque du Soleil productions in Las Vegas. The wine tower needed to be operated by staff with no or very little prior knowledge or experience of automation technology.

A diagnostic display panel was supplied to aid with troubleshooting, enabling the system to be handed over to the hotel with confidence that they could resolve any problems easily and safely. Edwin Shirley's creative design, combined with Stage Technologies experience in live performance, has produced a centrepiece that has pushed the boundaries of interior design for bars and restaurants. But we at CX want this system for beer too.....

High End go it alone (continued from previous page)

support in the Australasian market.

So what does it mean?

CX understand that HES have recently returned to profitability, after some very tense times. There has been considerable movement of staff at the Austin, Texas HQ. HES has progressively lost market share in the moving light business to Martin, the Danish firm. And the relationship with Whole Hog deteriorated prior to the Hog 3 coming to market.

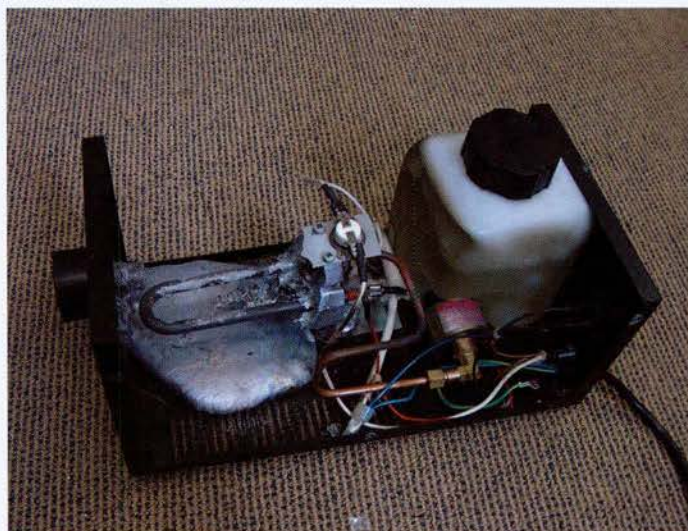
All in all, HES has had a raft of problems, centred on cost of manufacture and in some cases reliability of product.

Recently HES changed sales management, and put a guy into the role who comes from the IT industry. It is rumoured that his strategy is to go direct, in the manner of Dell, and sell product into each market. The outcome in doing this is to either reduce the price of the product, due to eliminating the local distributor's margin, or to increase gross profit per item sold, by maintaining the price of each item.

In any case, the lack of information about future arrangements can only be worrisome for HES customers.

Warning: Fog Machine Meltdown

Last year we alerted readers at our website as to a nasty electrical issue with a certain product of hazy origins. Under legal duress, we withdrew the warning, bloodied but unbowed. This year we are horrified to illustrate what may happen when the thermostat fails to switch off the heating element. Every fog machine is capable of this kind of meltdown, but we suspect machines that sell for \$99 at Dick Smith may be slightly more susceptible. The two risks associated with this are fire, where nearby things catch alight, and electrical where there is no residual current device (RCD). In both cases, death is a possibility.





Australia Unites, and 3200 assist

When Network 7 decided to unite the TV industry and the viewing nation for a Tsunami disaster benefit concert, they called 32 Hundred Lighting. Owner Iain Reed (pictured at right) has been a TV lighting director, so he understands the sometimes conflicting needs that arise when televising a stage show.

While we have called the firm '3200' in our headline, they are actually known as 32 Hundred Lighting, the name derives from the colour temperature of a tungsten halogen lamp. They are a Sydney based firm who also have a decent audio inventory.

Iain Reed assumed the task of Lighting Director for the concert. He assembled his own equipment, and got some more from Chameleon.

CX spoke to operator Richard Neville.

"We actually got completely free reign with the lighting, and had a lot of comments on the gobo selection because they were patterns that have really not been seen on TV a lot - 3200 are one of only a handful of companies that both own Stage Zooms and also refit their entire moving light inventory with custom gobos based on each event to ensure that the best possible gobos are available for use. Clint (Dulieu) and I make sure that we've got the best effects for each show."

"Obviously with the gig starting at 6.30pm we had a few hours of daylight to compete with, so the

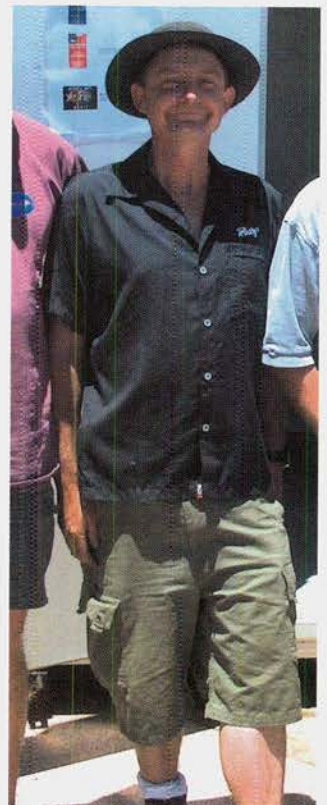
first few acts (Killing Heidi and Noiseworks) were lit very brightly and straight down the barrel of the cameras. As it got darker, I got a chance to program some more interesting and intricate stuff for Alex Lloyd and Guy Sebastian."

"Iain (Reed) and Graham Rowland (TV Director) chose to have a black backdrop to start which was then dropped to reveal a cyc as it got darker. This meant that the black drop would hide the lighting and camera crew during the day and provide a greater contrast to the acts on stage. When we revealed the cyc for Killing Heidi, it opened up the space and gave me the chance to play with the cyc a bit more - over the course of the show the lighting changed from simply providing washing effects to more detailed, arty looks."

The show looked outstanding on TV, the stage was dominated with a giant phone number, made in the Work Vision orange colour, which is a really deep orange bordering on red.

The only lighting snag came at the end when one of the compares David Koch decided that he'd stand behind a truss upstage OP, to do his lines - and in the ten seconds that he was there there wasn't much the lighting guys could do to get light in there!

The main feed - (stage) power was 300 amps per leg, and power on the second feed (host stage, crowd lighting, FCH and BOH) was almost 100 amps per leg. Lighting crew almost 400 amps per leg total.



Australia Unites

LIGHTING INVENTORY

- 18 Clay Paky Stage Zoom 1200
- 10 Martin Mac600
- 5 Studio Due Citycolor 2500w
- 104 Par64 MFL
- 14 Par56
- 9 1k 4-way Polaris
- 4 8way molefay
- 10 Pacific 1k 12-28deg
- 10 Castor 2k Fresnel
- 2 Selecon Arena 2.5ks
- 4 1k Fresnel
- 2 4k HMI Arri Fresnel
- 2 2.5k HMI Arri Fresnel
- 2 Robert Juliat 2.5k Aramis Spots
- 2 Jem Stage Hazer
- 2 Jem ZR33 Fogger
- 1 Hog II Console with wing
- 10 HP12 Dimmer Racks
- 1 HP6 Dimmer Rack
- 5 Powerlock Distro
- 7 12 way 10A Distro



LIGHTING CREW: Martin Bezv, Jon Tidswell, Jon Knctt, Clint Culie (System Engineer), Richard Neville (Operator/Programmer), Anthony Sweatman, Matt Kosorok.



GrandMA Micro

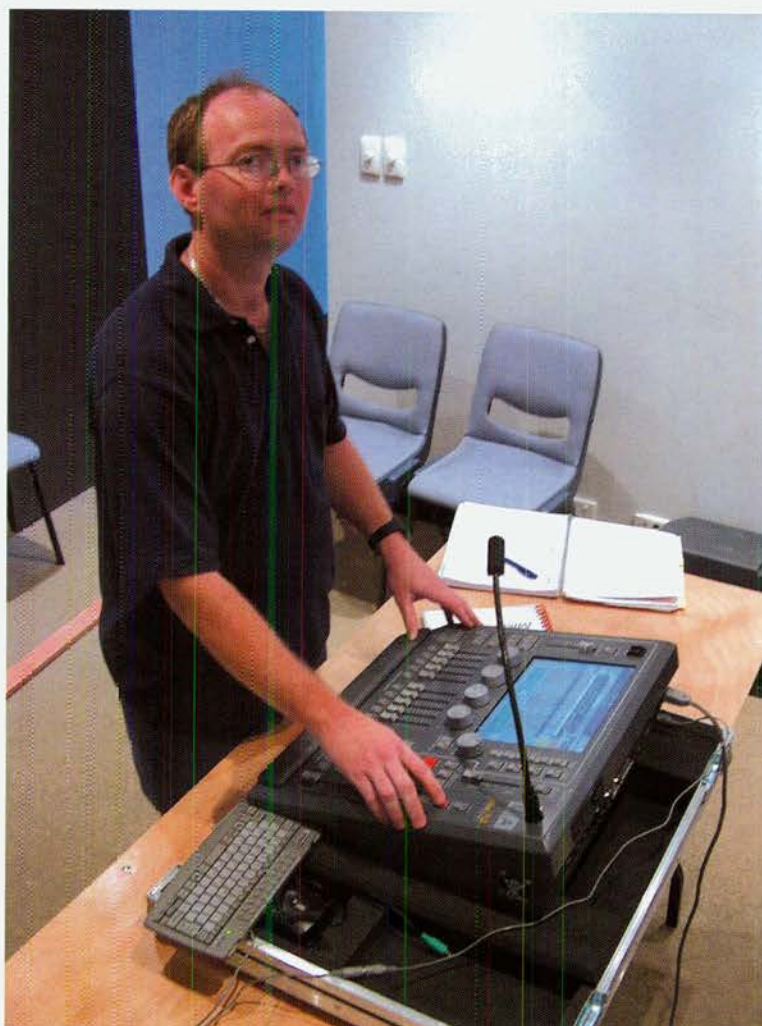
A small but powerful console for moving lights. Julius Grafton reports:

Max Argent has invested in a new lighting console – a Grand MA Micro. He brought it into the CX test facility for a looksee. Max is a fully qualified service technician, and he also owns Max Sound, which consists of himself, and a 2 tonne truck full of lighting and sound. Max is a Sydney based *free-range* production company.

The Micro is what the name implies, a very scaled down Grand MA lighting console, with many of the features that have endeared power users to the German console. The Grand MA is at home driving very large events and concerts. Micro is the latest spin off, it joins a family of Grand MA derivatives – the Light, and the UltraLight are pitched above the Micro.

It's worth stating for the record that your writer is not a lighting operator, least not on anything modern. My lighting career was based on the Strand SP 40 and the JL 36. Max is also not a lighting operator. My college was about to run the first lighting console operation course from the new training package a week or so after Max came. Looking at the Grand MA Micro reinforced how important training has become, because without it, you will not make lights work using a modern memory console.

In physical form the Micro is very pleasing. It has a hardy German military feel, with a bright touch screen and a bunch of solid feeling encoders, faders and buttons. The ergonomics appear most excellent. It is small, but not to the degree an operator feels silly sitting in front of it.



There are two DMX outputs, so 1024 channels can be driven straight away. You can drive more from the Ethernet port, if you have Ethernet to DMX hardware. There is a DMX input, which Max asserts allows the Micro to interface with another console.

Max had the Micro for a fortnight when I saw it just before New Year, and he had already done about a dozen shows on it. We booted it up, and timed 43 seconds until it had loaded the default file – which was the previous show. With a show loaded, you have already defined what is connected, where it is patched, and you've almost certainly loaded a library of sequences for your moving lights and dimmer actions.

43 seconds boot time is not good. A Jands Hog 1000 takes around 9 seconds. Naturally you will always run a UPS so you are not caught out with a power failure - but if you need to restart after a software snafu, you wait.

MA Lighting have made their Grand range popular by the ease of PC interface. Max likes the ability to set up a show at home on his laptop, especially with the stage visualisa-

Please turn the page >

Reviewed



tion feature. This lets you kind of see what your show will do, once you position your rig onto a stage plan. You can add smoke and strobes, and then play the sequences and see what they are doing.

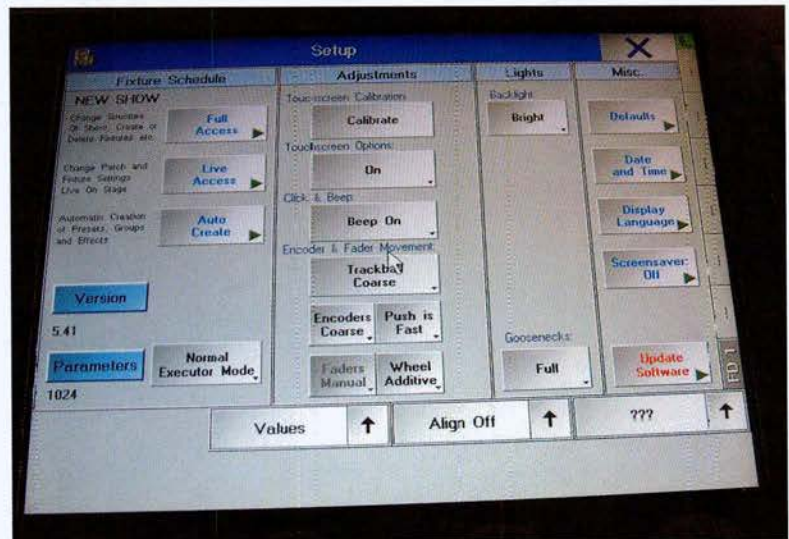
Without a show loaded, you need to start at the beginning and define some things. Max and I figured you'd need some time, maybe an hour or more, depending on what you are going to connect to the console. You choose your fixtures from the library onboard. Max had already updated his library, and software, to Vers on 5.4.2. You do this either from your PC after you've downloaded from the web, or on floppy disks if you are remote from anything.

Then you go patch, if you select all your moving lights, or a group of moving lights, and then select a starting channel, the Micro does the counting for you. By way of example, we put 2 Mac 250 (Mode 4 build) onto the patch, starting at channel 30. Because these movers need 13 dmx channels, Micro did the math. For the sake of the demo, Max put a 12 channel dimmer on channel 1, and Micro knew to allocate channels 1 to 12. I'm sure every other memory console does this too.

We selected DMX stream 1A, corresponding with what was plugged in at the back. Then we loaded sequences from the library, so that one sequence was to pan the movers inwards, with one inverted so they moved in from each side of the stage. We set up a bunch of similar things.

To run the board, there are many ways to call up your cue. There are 10 Executor Faders (love that German style folks....) each with a button and dual LED underneath. You can toggle through a set of sequences using the button, then when you fade up the fader, it dims up the movers and executes the movement. Likewise you could have a bunch of dimmer commands on one Executor, each like a whole scene. I think I could run a show on the Micro if I had someone to train me for a few hours beforehand.

Aside from the 10 Executor fader and button pairs, there are another 20 Executor buttons, which could be programmed to activate sequences or just run a cue. There are four rotary encoders which get used more in the setup, to define your own sequences or refine stored sequences. One encoder can operate pan, one can do tilt, and so on.



First screen on bootup (top) gives you the option to load a previous show.

Screen in middle: the initial setup screen.

Bottom: one of many views.

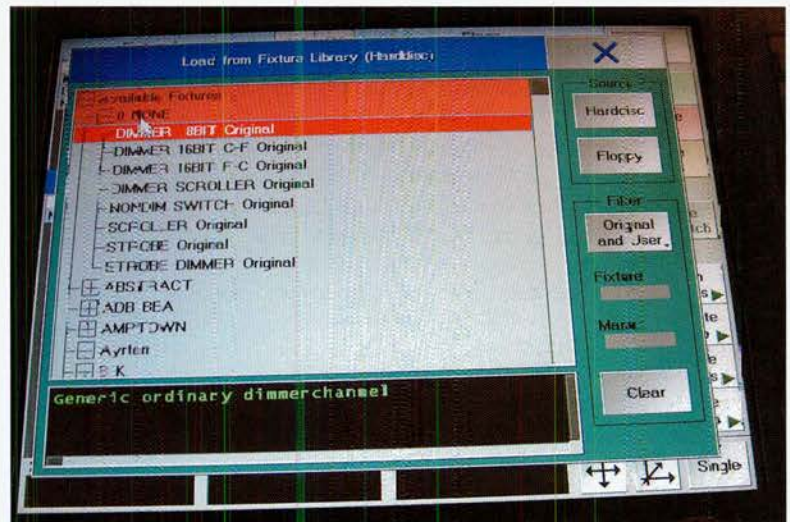
Reviewed

There is a master encoder at the right of the screen, one of its functions is to scroll up and down through menus. Max has invested \$20 in a little PS2 keyboard which he uses to punch names and descriptions into the console – along with a conventional mouse. This saves poking at the touch screen with a styli pen. Of course you can still use the touch screen anytime as well.

Various views can be selected for the screen, including one with a big clock, and you can select a full stage view if you choose to use the inbuilt visualization feature.

Naturally almost all hardware features, faders, encoders and buttons do many things, defined by software. We've just detailed some functions and features here.

There are also some differences in what MA Lighting call certain things, such that they have a thesaurus of meanings that compare (Jands) HOG terms with MA Lighting terms. An example: In Hog parlance, a 'Cue List' is a 'Sequence' on MA. I found the download at the Australian distributor site, www.showtech.com.au



SUMMING UP:

We like:

- The feel
- The look
- The screen
- The visualiser
- The space invader game!

We don't like

- The price (around 20 grand list but less on the street)
- Complexity at first glance
- The bootup time (43 seconds)

Stage visualisation on screen (top).
Dimmer selection from Library (below)

CHAMELEON TOURING SYSTEMS

LIGHTING PRODUCTION & HIRE



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- ★ SEARCHLIGHTS
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Chameleon Sydney have moved premises

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Rentals: 02 8596 7200 Fax: 02 9557 5445

BRISBANE
45 O'Connell Terrace Bowen Hills QLD 4006
Tel: 07 3854 1511 Fax: 07 3854 1563
Email: br.an@chameleon-touring.com.au

www.chameleon-touring.com.au

High End Systems DL2 'digital light'

Reviewed by Richard Cadena

"We pursue preservation. But the old order is doomed. We value permanence. But permanence is the last refuge of those with shriveled imaginations. We practice change. But 'change' is not nearly enough." — Tom Peters, from his book "Re-Imagine!"

In the hypercompetitive entertainment lighting industry, constant innovation isn't just a good idea, it's the law of survival. Whether or not you innovate, you can bet your competition will. So why not out innovate yourself and be your own best competition?

High End Systems (www.highend.com) is proving to be their own best competitor with the introduction of the DL2 digital light, even though the folks at High End might argue that it is a different creature than the DL1 and not really direct competition. Still, when companies compete—even with themselves—the consumer wins. In this case, the DL2 brings several innovations over its predecessor.

DL2 is the third generation digital light from High End (don't let the "2" throw you off), the first being the Catalyst and a projector with an orbital mirror head attached. The main difference between DL1 and DL2 is that the latter has an integrated digital media server built right into the base of the moving yoke fixture. It looks and acts like a "conventional" automated light instead of a decentralized command center. That makes it far easier to travel, taking up less truck space, and to set up. You don't have to run video cables between the FOH and the lighting rig; it is controlled from a lighting console via DMX. In fact, if you trust wireless DMX, then you don't even have to run DMX cable because it has a built-in Wi-Fi connection. Nor do you need to make room in an FOH rack for the media server. It's all right there onboard the fixture. You can literally just hang the fixture, power it and go.

The onboard media server is Windows XP-based, a departure from the Mac-based Catalyst digital media server. It's also a departure in that it is built around a 3D environment with the ability to import and manipulate 3D objects. Not only can the object be moved in 3D space, but so can the viewer's perspective also be moved.

There are two object layers and one mask layer. It comes with a library of digital art and it can store custom files that you can upload via the wireless link using the wireless media content management application (CMA). Some of the effects include color swapping, edge blending, magnification of an image, scaling on the X-, Y-, and Z-axes, color mixing and keystone correction. It can also tile images with each image having its own point of view. The edge blending feature allows several DL-2s to project a seamless image to create a large panorama by way of a variable soft edge focus. Playback speed can be varied and the input source can be switched from a lighting console. And if you like the media server onboard the DL2, you can always buy it as a stand-alone media server. High End is offering the media server portion of the DL2 as the Axon v2.

The DL-2 ships standard with an integral remotely controlled EXview



HAD™ CCD camera. The camera has a zoom range of 18X which allows for a very long distance focus. With the help of the onboard dimmable, remote controlled infrared diode array fitted in the housing, the camera is capable of taking pictures in total darkness. It's great for special effects or allowing the operator to see what is happening onstage during dark scene changes. The camera directly feeds into the server to allow for the manipulation of images that can then be projected live or recorded to the hard drive for later playback.

One effect in particular that drew a lot of attention at the show was the creation of interactive images using a video feedback. When camera images of the projection are fed back into the server they can be manipulated and create interesting effects.

The media server capabilities are rich in features but the big question on most people's mind is that of the brightness. The DL2 houses a 4500 ANSI lumens projector. An ANSI lumen is an average measure of the luminous flux as defined by the American National Standards Institute. The standard takes the average flux over nine equal areas of the projection in order to take into account the non-uniformity of the illuminated area. Interestingly, the new projector in the DL2 has an increased contrast ratio of 1100:1 over the DL1, which has a contrast ratio of 800:1. This fact should not be overlooked. The contrast ratio plays an important part in the perception of brightness as evidenced by the projector shootout at InfoComm 2004. At that trade show there was a side-by-side comparison of eight different video projectors, each with different ANSI lumen ratings. Surprisingly, the projector that appeared to be the brightest was not the one with the highest ANSI lumen rating but the one with the greatest contrast ratio. If that's not enough to convince you, then consider the display at LDI. At the show, the DL2 was projected along side of the Studio Spot 57E and the DL1s and DL-2s were often brighter when projecting similar colored images.

DMX control of the camera zoom, focus, orientation, shutter speed and white balance is provided and multiple DL-2s can be synchronized to move together and/or to play back content in synch. For total blackout control, a mechanical iris is fitted in the housing. The yoke is capable of 400 degrees of pan and 270 degrees of tilt, and the fixture weighs 108 pounds.

Since being introduced last month at LDI, the DL2 has beaten every other potential competitor to market even before they have had a chance to compete with the second generation digital light, the DL1. To be sure, there just might be some competition in the works. Robe quietly previewed a digital light prototype at the show, possibly signaling their intention to enter the market. Martin is easing into the digital arena with the Maxedia and it's only a matter of time before more digital lighting finds its way into the field. Until then, High End, DL1 and DL2 are swimming in open water.

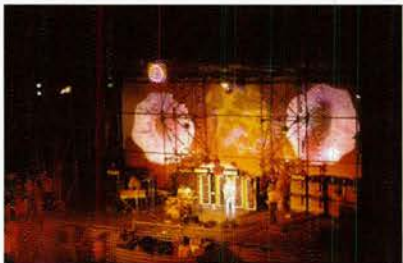
Yesterday Year



The ESP desk



Stage at Surbury '74



OFFICIAL: The FIRST rock lighting board unearthed

Peter Evans writes:

In 1959 I started in the lighting department at GTV Melbourne at the tender age of 19. It was not long after starting at GTV that I started to do some rock lighting on the side. The need for a compact desk with plenty of facilities for this type of work led to many discussions after work with electronics wizard Ian Whirelaw who also worked in GTV's lighting department. Ian offered to build a desk to my requirements if I paid for the parts and development work. This was agreed and, by 1971, the desk had been built and was in regular use at local venues under the banner of the "ESP Lightshow".

The desk (pictured at top) had a 32A three-phase inlet with its own phase metering and breaker facilities. It had on

(continued on next page)

My life in psychedalia

IN 1973 there were two kinds of lighting. Stage Lighting in the Theatre (say it with a prim and proper English accent like this: *Thea-a-tre*) or psychedelic lighting. Neither camp spoke with the other. The latter attracted me.

The first time I went to a venue and saw a band it was at a place called The Arts Factory, run by Johnny Allen. He went on to run the Aquarius Festival. The Arts Factory was a hippy gig, a warehouse in Sydney's Gouburn street - a few blocks up from Chequers Nightclub.

Most seminal bands from the era played at 'the Factory' - Billy Thorpe and the Aztecs, Bakery, Madcer Lake, Company Cain (get it?), Tully, Taman Shud (the 69'ers (really!)), the La De Da's Spectrum, SCRA, Harvest, the Battersea Heroes, Captain Matchbox Whoopie Band, Chain... the list goes on.

Lucky me, I ingratiated myself with Eddie VanDerMadden - the leader in the lighting collective. Actually, Eddie wasn't the leader by name. No one was. Everything at the Arts Factory was run on contemporary hippy principles. Things were airily debated with lots of 'maaan', 'cool', and 'kosmic' punctuation. Hippies were called 'heads' back then.

The whole alternative head nation worked on the premise of lots of talk and no real physical action. The Arts Factory was really the embodiment of an alternative movement which was about 5 years behind San Francisco and London.

The lighting system at the Factory comprised 1 x Part 23 profile scot for the stage, 12 x 4' UV tubes for the crowd, and a cyc with lots of projected things.

Projection was everything.

From a scaffold tower at the rear of the warehouse, at least three and sometimes five overhead projectors were operated by serious heads. Two Pyrex dishes were used, one slightly larger than the other. Liquid dies, one oil-based, one water-based, were poured into the first dish, filling it one third full.

The second dish was held in both hands and lowered into the first. At the appropriate depth, it would squish the dies, and being different in origin, they would combine. Moving the dish produced mesmerising swirling patterns, projected onto the cyc.

After a while, the colours got dull or the combination got boring, so the liquid was thrown into a bucket. Being a collective, no one was empowered to empty them. Sometimes a whole bucket load would be kicked over, and dribble through the floor onto the stoned hippies underneath.

Eddie wasn't terribly interested in the overhead projectors. Other hippies would operate these, fuelled by lengthy sprints of Acapulco Gold or best of all, Brown Acid. Maybe both.

Eddie was an inventor. His projections were from 'De Machines' as he called them, which he made in his squid rooms in a boarding house. Some of Eddie's machines were very simple. He removed the heat filter from a slide projector, and let it slowly melt a hard coloured slide.

Another simple idea: Eddie made a disc out of Polaroid plastic. Then he put a static slide of Polaroid into the gate of the slide projector. The slide was covered in random bits of clear standard sticky tape. When the Polaroid disk was rotated through the gate, just in front of the static slide, it made for this weird polarising rainbow hued effect.

The machines got more complex. Eddie had 3 Prisms on a turntable in front of some projectors. They threw twisted, distorted images through the venue. Presumably the hippies and heads, who were usually reclined on pillows on old ratty Persian carpets, changed the dose of whatever they were on to coincide with the lightshow.

Hugh and Bani McSpaddon had a similar lightshow operation in Melbourne, at the T. F. Much More Ballroom. I never did find out who or what the T. F. was.

I guess the most impressive thing about the lightshow at the Factory was how the band were just a part of the whole experience. Doug Parkinson or Billy Thorpe or anyone famous at the time would just do the gig, lit with the one feeble scot, while the weirdness was projected on the screen and even all over the band.

When the Factory was closed, Eddie wandered off and wasn't seen again. If anyone knows of him, please drop me a line.

- Julius Grafton

FIRST rock lighting board unearthed

board 12 x 2kW dimmers, 6 x 2kW variable speed flashers, 6 x 2kW audio-modulation channels (each with its own input so you could mic up a musician's amp and then light him with the output of his individual instrument), 6 x 2kW line switches (for items like projectors that could not be dimmed), a dimmable worklight, and inbuilt talkback.

Later on, a drive circuit was added for the mother of all strobes (12 Xenon tubes).

All the 240V patch sockets were on the back of the console. Above each of the twelve dimmer channel faders was a set of paddle switches. These had three positions - up was latching and on, centre was off, and down was spring-loaded and on. The switches were fairly large and could be played like a piano key. These, I believe, were the first "flash-buttons" in Australian lighting.

Many years later, while working for Lighting Corporation in Melbourne, I was given the task of retrofitting a Strand desk with flash buttons for "Men at Work", at which time the concept was already ten years old!

This custom lighting desk was used at Sunbury '72, '73 and '74.

I decided not to tender for '75 as I had recently married and bought a house - a good thing as, like everyone else, I would not have been paid!

By now, I was working full-time in the Audio Department at GTV9. (While sweating away at "Festering Hall" in Melbourne doing follow spot on "Blood Sweat & Tears" some years before, the combination of an amazing band and the first Clair Brothers sound system to come to Australia won me over to audio, in which I have primarily worked ever since).

Around 1976 the custom lighting desk was sold through a colleague to a Church somewhere in Kew - I wonder where it is now!

I'm still working in the industry 35 years on - my hair might not be as long and is a lot whiter than in those exciting fledgling days of rock and roll lighting, and I might wear suit more often, but I will never forget the early 70s and all the changes they brought.

Sadly, Ian Whitelaw, whose electronic genius did much for my early lighting career, died a few years ago.

• Are YOU in your anecdote? Better still, do YOU have pictures from the hazy past? If so, please email your pix and your words to mail@juliusmedia.com

Source 4 Revolution

Reviewed by Julius Grafton

This really is the moving light for theatre. ETC have married the Source 4 - an intense and compact profile spot - onto a platform which provides remote DMX operation. Nothing too wild so far. But the Revo also does everything virtually silently. That's what the theatre dudes want.

Another thing that is very theatrical is the scroller. If you want to change colour with a traditional moving light, you blend glass. Revo goes back to the colour gel, on a scroller with 20 frames.

Mike Griffith from ETC told me that some pastels just don't render as well when done from glass. And theatre lighting designers are obsessed about hues and tints and EXACT renditions of colours.

Unlike most conventionally lamped devices, Revo has a 77 volt QXL lamp. This enables ETC to offer the same fixture in all global markets. It also ensures that the fixture has exactly the same light output, on any power grid, anywhere. ETC claim around 11,000 lumens from the Revo, more than you get out of a Source 4. The lamp is rated at 750 watts, and is good for 300 hours.

Our picture (below, right) shows the lamp going in, it has a unique and clever housing which allows the lamp to be changed without opening the unit. The reflector is the same as the one used for the Source 4 Junior. Essentially 95% of the light ends up going out the lens, with the heat departing the rear of the reflector.

CX understand that Ushio and Osram are playing

with a 1,500 hour life lamp, which would produce reduced output.

Dimming is internal, so you use the Revo like any other mover, and allocate a bunch of DMX channels to control parameters.

When you buy a Revo, you get to choose options. The fixture has two options slots in the optical chain. Into these you may fit a gobo module, allowing 3 gobo's plus open white. There are two gobo modules available, one for fixed gobo's, and one that rotates and indexes. Indexing means you can rotate the gobo, then stop it, and it will remember where it stops.

There is an Iris module, and a Shutter module. Obviously you can't fit a gobo module, plus an iris module, plus a shutter module - but why would you? The optional colour scroller fits on to the front of the Revo.

Modules like these are great news for lighting department heads everywhere, since you only need to fit what you need to a given luminaire.

The other important spec is the beam spread, with Revo you have a 15 to 35 degree zoom ability.

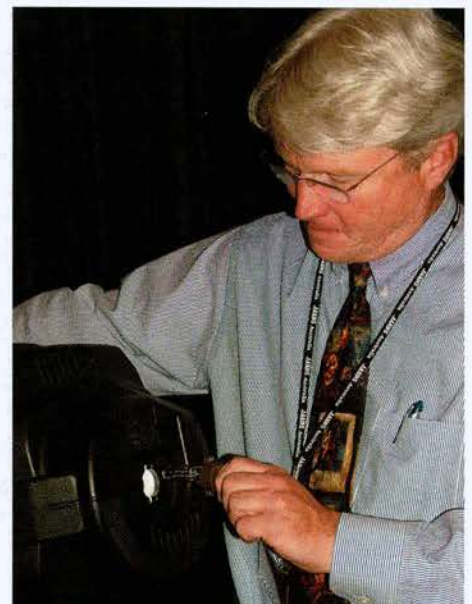
The fixture weighs about 33 kilograms before you put modules in, and as much as 41kg fully optioned.

Revo wants a maximum of 31 dmx channels when fully optioned with a colour changer.

In summary, it does plenty, but with a theatrical feel. We like it!



Mike Griffith from ETC showing the neat lamp assembly. No tools required!



25 Years (or more) of Automated Lighting

These might be your father's lights!

By Richard Cadena

Over the last few years, something very unique has happened in the entertainment lighting industry. For the first time in history, there is a reasonable possibility that the automated lights being operated just might be older than the lighting operator.

2005 is the 25th anniversary of the VL0, the prototype that preceded the VL1. The VL0, as it was later dubbed, was the light that launched a thousand lights and an entire industry around them. Oddly enough, it was the creation of company that was mainly known for concert sound production and later became involved in lighting.

Showco, a Dallas-based rental and production company, was founded in 1970 by Rusty Brutsche, Jack Calmes and Jack Maxson. As with many industry companies, they began as a band who found that their PA system was in higher demand than their music so they started renting it out. As they grew, the industry grew around them and they went into the lighting business to meet the demand created in part by the British invasion. In 1978 they had the idea to build a color changing PAR can.

"We tried many different ideas," says Brutsche. "from a high speed semaphore mechanism for moving gel frames, to a system of pneumatic powered cylinders to move the gel frames using compressed air, to a liquid dye system using three colors of dyes in chambers that could be varied in thickness to vary saturation and hence color change. None of these ideas proved to be practical."

Enter Jim Bornhorst, who, at the time, was the head of the Showco sound engineering group. Bornhorst examined the problem and, taking a page from John Tedesco and the Phoebus Ultra Arc follow spot, he decided to try a new light source. Rather than to start with a 1000-watt PAR lamp, he used a GE Marc 350 metal halide arc lamp. The Marc 350 had an integral dichroic glass reflector that acted as a cold mirror, deflecting the visible light towards the front of the lamp and a great deal of the infrared light, which contains most of the heat, through the reflector and away from the lamp. Not only did this lamp help manage the heat in the optical path, but its elliptical reflector also created a focal point for which to focus an image, something that a PAR with its parabolic reflector cannot do.

But Bornhorst was more concerned, at the time, with color change.

So he put some gel in the focal plane only to observe that it quickly burned a hole right through it. But something in his pool of knowledge would soon lead to a solution that exists to this day.

Bornhorst was something of a photography hobbyist and he was familiar with the coated glass reflectors used in film development equipment. So he pulled out an Edmund Scientific catalog and ordered some dichroic filters to experiment with. Along with Tom Walsh and John Covington, they found the filters could handle the heat and did a wonderful job of coloring the light.

The team soon developed two ways of building an automated color changer. One method was to fabricate three color wheels and put them in series with the optical path. By using one or a combination of filters they found that they had a

great range of quick-changing color. This was the color changing mechanism that eventually found its way into the VL1, VL2 and the VL6.

The other method they discovered for changing colors was to align a series of three dichroic filters in the optical path and tilt them to gradually crossface the color. This was the design that was eventually used in the VL3, VL4 and VL5.

Things were going well with the development of the color changing fixture when, one day, a group of Showco employees went to lunch at a barbeque joint in Dallas called Salih's Barbeque.

"The group," says Brutsche, "consisted of Jim Bornhorst, myself, Tom Walsh, John Covington, Tom Littrell (from Showco lighting) and one of my partners, Jack Maxson. We were discussing the new color changing light and out of the blue Maxson says, 'You know, if we can make it change color, we should also make it move.' We all stopped eating like that EF Hutton ad and said, 'Of course, what an obvious thing to do.'

Twelve weeks later, the VL0 was born of "hand made parts and model airplane parts." Tom Walsh and Brooks Taylor build a controller to run the light. It could store 16 cues and operated on a digital serial link using a microphone cable.

Brutsche subsequently called Tony Smith, the manager of the rock and roll band Genesis, and told him about the prototype. He asked if he could show it to Tony and the band, knowing that they were always on the cutting edge of production. Smith agreed, and on December 15, 1980, Brutsche and Bornhorst flew to London and traveled to the English countryside where the band was recording an album in preparation for an upcoming world tour. Upon their arrival, Smith suggested that they set up in an old barn next to the studio.

"The barn was nearly 300 years old. The oak beams in the ceiling were like steel and we had difficulty securing the prototype luminaire to the beams. It was cold, about freezing, with no heat in the barn. When we first fired the unit up it was so cold none of the parts would move. But as the bulb heated the unit up it started to work. We programmed four cues, the beam shooting to each of the four walls in a different color. We asked the band and Tony to come out and while everyone stood there shivering we executed the four cues. Mike Rutherford



made the first comment; "By jove, I didn't know it was going to move!"

Having secured the go ahead from the band, they went back to Dallas to begin building 55 units for the inaugural run.

Before they left that day, Brutsche and Smith were discussing the details of the business end of the agreement they had just made. Brutsche mentioned that they were trying to think of a name for the new lighting system. Smith commented, "How about Vari-Lite?" Thus was born the name that changed the industry.

The first show at a bullfighting ring in Barcelona in September, 1981 triggered a series of events like a chain reaction. Dan English, of Morpheus Lights, tells about his first introduction to the technology.

"We were doing a Journey show in Seattle. It was J.R. (John Richardson), his brother Bruce and myself on the lighting crew. We were subbing in the lights because their lights were out with somebody else. Ken Mednick, who was their lighting designer, was driving us over to the show, and he said, 'I just heard about this show in Europe with Vari-Lites!' He had all these ideas about prism lighting and we thought, what the hell is this guy talking about? In the meantime, J.R. was thinking, 'Hmmm, I think I can do that.' And by the time I got back from the tour, Bruce already had a light moving around."

The Richardson brothers had both attended engineering college at Berkeley and they knew their way around electronics. So they took a PAR can and built some mechanical arms that were driven by servo motors. But one of John's most significant contributions, according to English, was his idea for control.

"It's not that hard to have servo motors and mechanics to hook it up to a spotlight to make it work. But it's all about the control system. And this was '81. But John said, 'We can get one of those Kliegl Performers and make one channel be each attribute; make one channel the shutter, one channel the size...And that was it. Once that figured that out, then they built their first lights."

They proceeded to dissect and study the optics of several short throw follow spots, eventually building their own luminaires that "looked kind of like a shoe box" using sheet metal. The color change was accomplished with solenoids tripping a boom with gel colors. The lamp source was a Marc 350 and the power supply was in a separate enclosure.

"The first time we used them was for Paul Anka in Las Vegas," says English.

Soon afterwards, those first six lights were used on a Devo tour, the first significant tour with PanaSpots, English says.

"That was pretty startling because people weren't used to seeing these lights. The show was set up with a lot of symmetry, and, of course, with Devo it was pretty dramatic. It was a great looking show. (Lighting designer) Candace Brightman and I saw that show and that's when she went, 'Oh yeah, I'll take those.'"

By October 1982 they were already building the second generation of the PanaSpot with a single gobo and seven colors. That December, English was operating the lights on the Grateful Dead tour.

"It was rather difficult at first because, unlike Devo, the music was a little more ethereal. We had a great time figuring out new and different effects. But it was great because they really didn't care what we did. At first we thought, 'Maybe we shouldn't move these things much.' But of course, that all changed."

Since the PanaSpots were operated with a Kliegl Performer console, they performed a little differently than Vari-Lites.

"They had these things on the Kliegl called the Gold Cue that would load every playback window for you and start things running. So you could run multiple loops. Whereas the PanaSpot wasn't as sophisticated as the Vari-Lite stuff, the control, being a theatrical controller, gave it a different level of sophistication. That turned people on in the television market and that's why it started taking off there."

About the same time, a regional sound and lighting company in Springfield, Missouri was touring with bands like Huey Lewis, Pat Benatar, Alabama, Talking Heads and Chicago. John Gott, the owner of the Dyna-Might Sound and Lighting, saw something on his radar that got his attention.

"I saw some Vari-Lites at an early Genesis show," Gott said, "when they were first starting to come onto the market in the early '80s. We were getting excited about what we were doing with little portable lighting systems and I said, 'This is going to be the future of lighting.' So

I started figuring out how to dump lots more big money down a black hole. [laughs]"

At the time, Dyna-Might had about half a dozen employees and they started building prototypes of moving lights, designing some of the electronics in house and sub-contracting it out when they needed to. The company added employees to keep up with the growth.

"We started off with a yoke, and I contracted a satellite dish company to do some of the original engineering design. We used DC servo motors with analog control. Then we built a controller that had joysticks and memory positions that were analog sets – you'd set trim pots to a position and you'd move the joystick and it would go to a position and stop there. You had limit settings, basically, left and right, up and down."

Their first production run was a PAR 64-based moving yoke light called a Moto-Yoke. They built and sold 500 units. Next came an ellipsoidal-based unit, built around a Times Square 1000-watt ellipsoidal, and eventually they built an arc source fixture called the Moto-Arc.

"Probably 70% of our product went out of the country. They went to Europe and Asia – we had guys flying in here and wiring in hundreds of thousands of dollars trying to get product. We were growing like crazy. We had 35 people by '87 just cranking out product like crazy."

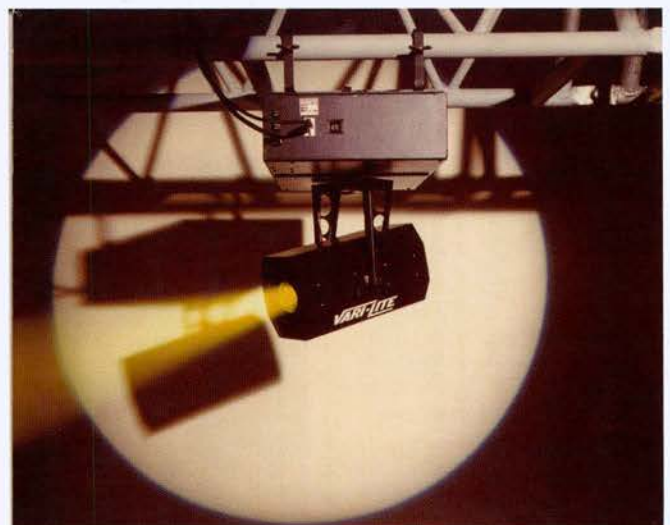
But by the late 1980s, the automated lighting competition really started heating up and by 1990 SLS decided to get out of the moving light business. Today, they manufacture a line of audio products.

There were many more automated lighting manufacturers to come and even a couple that came before the Vari-Lite. Just before the Genesis demo, a company in France named Cameleon Lighting started building a large moving mirror fixture called the Telescan. It had a successful run for many years and could be found on several large concert tours.

Even before that there was the Cyklops. Cyklops was a moving mirror fixture that was the brainchild of LD Stefan Graf and electrician Jim Fackert. In 1971, Graf grew tired of local follow spot operators who could not operate a follow spot when he was touring with Grand Funk Railroad. He confided his frustration with Fackert, who suggested that they build an automated follow spot. Before long Graf had four modified follow spots which were operated by joysticks from the wings of the stage. The original four fixtures plus four more went on to serve in Graf's production company for many years to come.

And if you want to go back even further you would find that George Izenour built some automated lighting based on the Fresnel fixture during the Korean War. Still, in an interview with Raymond Kent (A Spin Around Moving Lights, ©2001, High End Systems), Izenour says, "The idea is not original with me. It's been around a long time."

Automated lighting as we know it—dozens of parameters, smaller, lighter, brighter and relatively less expensive over the years—is the culmination of years of development and competitive one-upmanship. But the first Vari-Lites were probably the industry's single most influential product development. Still, don't be surprised if you come across some moving lights one day only to find that they once were operated by your grandfather.





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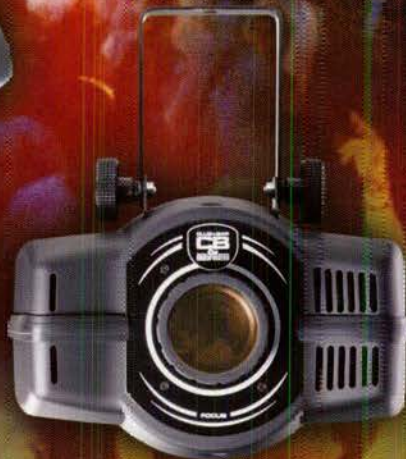


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