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Cover Photo – The Australian company of Harry Potter and the Cursed Child. Photo credit: Matthew Murphy.

Contents Photo – RoboSpots in New League for LOL Worlds 2020 Final. Photo credit: Riot Games

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Distance No Object For Allen & Heath dLive

dLive mixes the show from over 2,000km away



What do you do when you have an event to mix overseas but you can't get there? With Covid travel restrictions limiting movement between locations, sound engineer Rich Bryant had to think not just outside the box, but also outside his country, when it came to mixing a broadcast feed from his studio in Sydney, Australia - a distance of 2,258km, and two time zones, from the venue.

Held every March, the annual Passionate Women's Conference is New Zealand's largest event for Christian women. The convention attracts thousands of attendees, plus international guest speakers, to the prestigious Michael Fowler Centre in Wellington for a mixed programme of music,

worship and spoken word presentations.

"Normally I'd travel to Wellington to mix the broadcast, but that was not an option this year due to the quarantine requirements," explains Rich. "After talking to Andrew Crawford at Australian A&H distributor TAG

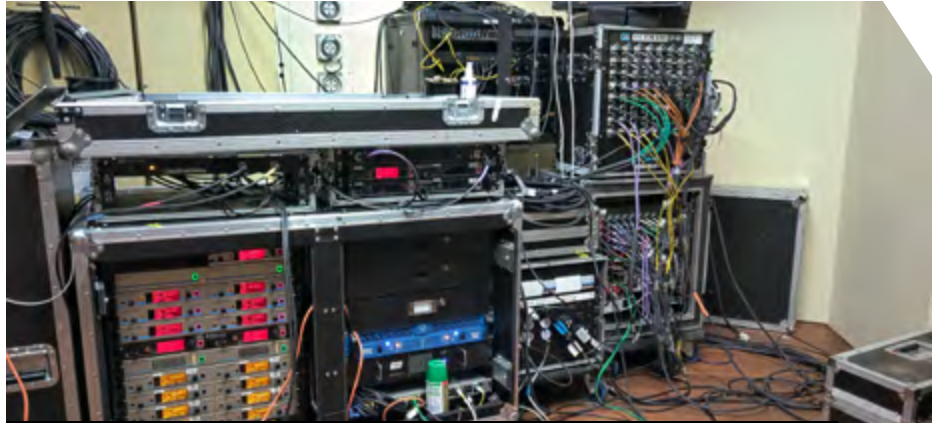
about the network control capabilities of dLive, plus the minimal requirements for additional equipment and infrastructure, we proceeded down that route."

With onsite support in Wellington provided by local hire company Lampros Sound, a dLive DM64 MixRack was deployed at the venue for Rich to control remotely from his Sydney studio. The DM64 was fitted with a Dante card for interfacing with the onsite AV network, plus a Waves card for virtual soundcheck and additional output processing.

The DM64 was connected to a dLive S7000 control surface in Sydney via a secure VPN connection, managed by Riverbed's SD-WAN service, using the integrated network ports on both units. Luke Sheaves of Riverbed was on hand to provide IT and network support in Sydney, with Alistair Lambie of Lampros Sound monitoring the connection on the New Zealand end.



Sound engineer Rich Bryant mixing the broadcast feed for the event from his studio in Sydney, Australia - 2,300km away



The racks at the venue in NZ, showing two DM64 MixRacks providing sound for FOH, MON and Broadcast. The Broadcast rack was controlled by Rich in Australia

Audio and video monitoring of the broadcast feed in Sydney was provided via an SRT stream to Rich's iPad, arriving with less than 150ms of latency, ensuring he could react quickly to the performances taking place across the Tasman Sea. Additionally, Rich utilised Audiomovers software, fed by the Waves card in the DM64, to monitor the Solo/PAFL bus with a manageable latency of 200ms. The Intercom Unity app, running on a second iPad, was used to handle comms between Rich and the technical team in the venue.

It wasn't just the broadcast sound that

relied on dLive. Back in the venue, another DM64 configured for multi-surface operation was used to handle both FOH and MON duties, with a pair of S7000 control surfaces deployed for engineers Andrew Forde (MON) and Simon Faisandier (FOH). Two DX168 expanders were added to feed performer IEMs and provide additional AV I/O, with Waves and Dante cards utilised for audio transport and additional processing.

"What started as an ambitious endeavour ended as a resounding success," reflects Rich. "It was a truly ground-breaking

weekend, and we couldn't have done it without the dLive, and the support provided by TAG, Lampros Sound, and Riverbed".

"The conference livestream was a total success, with the client and Rich both very happy with the results," adds Andrew Crawford, Product Specialist at TAG. "It was great to see the dLive platform deliver these results with minimal infrastructure and readily available products. It was a pretty amazing experience to sit here in Sydney and watch Rich mix a conference that I knew was running live in New Zealand, over 2,000km away."




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Chameleon takes on even more PROLiGHTS PanoramalP AirBeam



Australian weather can be unpredictable, from searing temperatures to dust storms and intense rain events. With so many outdoor events held every year, production suppliers know they require sturdy, IP65-rated lighting fixtures that will perform flawlessly no matter what weather event is thrown at them.

Chameleon Touring Systems has it all figured out, relying on PROLiGHTS IP-rated gear. That strategy led them to purchase another 24 PanoramalP AirBeam fixtures to add to the huge stock they already have in their inventory.

As well as being weatherproof, the PanoramalP AirBeam is an incredibly powerful beam and searchlight, featuring CMY colour mixing and multiple prisms, the

PanoramalP AirBeam delivers big, impressive beam looks.

“Our PanoramalP AirBeams have been popular and this year they have been on several key events already,” commented Tony Davies, managing director of Chameleon. “Their massive output is very impressive, and they deliver some great outdoor searchlight and big air looks.”

Designed to make a statement, the PanoramalP AirBeam can truly make an event stand out or fill a large outdoor space with spectacular beams. So far this year, Chameleon has deployed them on Halo Townsville, Australia Day at Sydney's Circular Quay, Australian Ninja Warrior, and The Royal Easter Show.

“These are all high-profile events and it's important to have a fixture that is reliable - especially when you're live to air!” added Tony. “Our crew love them because they're small and easy to rig, and, of course, maintenance-free. It's also good to have Show Technology as the Australian distributor as we know they always have our backs. The service from them is impeccable.”

The Panorama IP Airbeam features a powerful 440W Osram HTI lamp combined with a 167mm HD front lens for a chunky, bright 2° beam. An extensive set of effects including linear CMY mixing, rotating gobo wheel, static gobo wheel, circular and linear prisms, linear frost and focus.

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In '83, the active live music scene in Sydney provided an opportunity for a keen young audiophile to worm her way into the biz, unloading trucks, and learning to rig, patch and tune PA systems.

There was a fair few detractors (“I tell ya, there’s no room for a chick on the road... unless she’s on her back” or “Nah, leave that for the boys, love. You take this snare drum, and put it on stage.”), but an astonishing amount of support and acceptance – Yogi, Michael Orland, Jeff Stewart, Arthur Allaylius, Kim Hasanik, were early mentors, but there were many more.

What a wonderful job – hours 2pm-2am, plus commute, 4 – 5 days a week, each day leading up to the thrill of the band stepping on stage and breathing fiery life into the day’s labours. There were scary stints with established bands – Kevin Borich, where the gaps in her ability were sometimes patently obvious to the artist, and even the punters (she had to learn, quickly, the mysteries of tuning foldback). She worked with many up-and-coming indie bands, and a bunch of lost-in-time acts you’ve probably never even heard of.

Exciting times. How cool to be paid to do this for a living!

In between gigs, she joined crews of hired muscle, unpacking semis for big touring acts. A punishing pace, but she loved it, proud to be gaining acceptance as a female on the crew.

In the early '90s she got a “proper job” as sound hire staff of Grafton’s Sound, eventually becoming Hire Manager, still assembling and loading PAs, but with a home-life too.

Eventually, as the live scene shrank, she scored a job in the sound department of the Sydney Opera House and stayed for 10 years, discovering all manner of non-rock-n-roll performance. She learned to mic orchestras, tap-dancers on bubble-wrap and once, even

the spines of a cactus for a plinkety-plink cactus solo with the Sydney Spring Ensemble during the opening of the Studio.

The march of time and demands of parenthood meant her working life morphed to operation at a bunch of annual regional music festivals, supplemented with local community gigs.

After about seven years of spending each January in Tassie operating the popular Cygnet Folk Festival, she made the move to live in that beautiful part of the world and six years further on, on April Fools Day 2021, ran – SPLAT – into the back of an 18 tonne truck, embedding her lower body into the front of her trusty HiAce.

Life can change in a split second.

Now, with the bulk of her legs and pelvis having been patched back together by some jolly clever surgeons, she’s trying to wrangle through the post-accident paperwork from her hospital bed, occasionally stopping to delight in the sight of one set of toes wiggling on demand at the end of the bed.

She is on the long slow healing process, managing, mostly, to keep a positive outlook.

She says:-

“Gratitude #1 - I will walk again, maybe even by the end of the year.

Gratitude #2 – No one was in the passenger seat. That side of my van is so pushed in that a passenger would mean that this whole story would include a fatality, and it DOESN'T, so YAAAY!

Gratitude #3 – The skilled crews who cut me free, choppered me to the hospital, and those

Get This Old Rock Chook Back On Her Feet!

surgeons who, over three days of induced coma, worked long hours to patch together the worst of the damage.

Gratitude #4 – For the care and kindness shown to me since by the frontline nursing staff. These legends should be running the country; they’d be way more competent than those posturing pillocks on Parliament Hill.

Gratitude #5 – You guys! The outpourings of concern have been numerous, and from all phases of my life. I’ve had great convos with colleagues from the whole length of my career. Thank you!”

Short-term, all she can do is lie in bed, and wiggle the toes of one foot, and – excitingly, her hips, just a little bit (new development, that).

A wheelchair has just appeared in the corner of her room and she looks forward to one day swinging into it, and...wheeee!

Before the crash, she was ¾ thru the building of a tiny house, using a skilled carpenter, and second-hand building materials sourced, over four years, from the recycling yard at which she now works. Well, DID work.

She would never have imagined that on the morning of the crash she would not return home for three months, and then, in a wheelchair, but the property is not ready for that.

We want Kathy to come home to a place she can comfortably spend the rest of her recovery in. We think she deserves at least that much.

All donations will go toward preparing a more liveable space in her property, for when she leaves the hospital, and for any preparations to help with rehabilitation for when she learns to walk again.

Please donate to Kathy O’Hara’s “Get This Old Rock Chook Back On Her Feet!”

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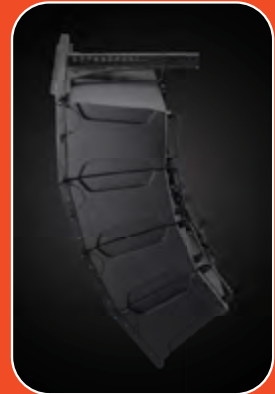
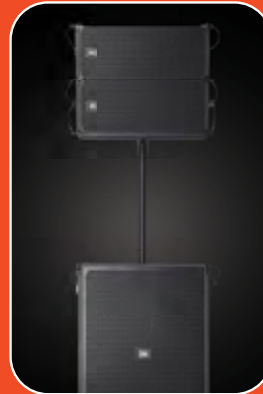


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Cutting Edge creates latest buzz with Edge Lab VP facility

Renowned for its collaborative ‘can-do’ approach to creative problem solving, Cutting Edge has been a leading provider of sound and picture post-production for the advertising, features and television industries, both in Australia and internationally, for almost three decades. The company recently announced Edge Lab, its newest venture in Virtual Production (VP) based in Brisbane. The facility is a research and development (R&D) hub for production industry professionals, developed in partnership with Big Picture, part of the NEP Worldwide Network, and motion caption integrator Logemas. Built with the highest quality components, industry standard Brompton Technology processing is used for the main LED screen as well as ambient reflection and lighting walls.

Whether it is end-to-end post, 7.1 Dolby Digital mixing, DI or remote operational setups, Cutting Edge is able to facilitate all its clients’ needs across commercial, television

and feature film productions. Now, the company can also tap into the latest technical innovations in VP with its Unreal Engine powered virtual production stage with a high

resolution 12m by 4m LED wall and moveable LED side panels.

The set up comprises a Uniview Tekken 3mm main LED screen with two Tekken 3m by 2.5m ambient reflection walls and a further two ROE Visual CB5 5mm ambient lighting walls. The entire system runs on four Brompton Tessera SX40 4K LED processors and four Tessera XD 10G data distribution units.

“Because our LED stage has been built with high quality components and is powered by Brompton processing, we are able to achieve realistic virtual environments that help with experimental shooting and environment creation,” says Cutting Edge CEO Michael Burton.

Josh Moffat, Special Projects and Business Development at Big Picture suggests that the premium LED Volume technology that Edge Lab is offering is the “latest buzz” in virtual production. “The work coming out of these spaces is set to create a new standard in filmmaking,” Moffat says. “We know production companies will want to try out this new technology and take advantage of all it has to offer. We’re looking forward to our partnership with Cutting Edge and being able to showcase this to the local market.”

Currently, Edge Lab’s Head of Virtual Production, Tim Schultz, is holding demonstrations and workshop sessions for creatives and industry experts looking for a full virtual production experience tailored to their specific production needs. “Our team wants to collaborate with creatives in



the R&D phase of a project so that, if virtual production is a viable solution, we can help the production team configure a suitably scaled VP studio wherever they need it," explains Schultz.

On the 19th of March the team was honoured to invite The Visual Effects Society (VES) members to attend a virtual production event workshop at Edge Lab. The event was hosted with partners at Big Picture, Logemas and ARRI, and demonstrated

Unreal Engine integration with a large-scale LED stage including real time camera tracking and various lighting techniques. The key objective was not only to showcase the latest technologies, but also to discuss best practices with VES, the entertainment industry's only organization representing the full breadth of visual effects practitioners in over 40 countries, in order to find ways for all the relevant departments to work effectively together in the new exciting field of virtual production.

"Queensland is fast becoming the centre of a large film production scene. Edge Lab opening is proof of that," concludes Moffat. "We are really excited for Big Picture to be one of the main technical companies driving virtual production development here in Australia. We're looking forward to working on some amazing projects and with Brompton Technology as our chosen LED processing solution for VP applications, we know we'll deliver great results."

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Virtual Production Screen Innovators Fika Entertainment Partner with LED Screen Giant Woohah Productions

Australian virtual screen production services and facilities provider Fika Entertainment has forged an exclusive partnership with the fastest growing local LED provider, Woohah Productions, joining forces in offering end-to-end virtual production services.

Under the alliance, both parties will leverage their respective resources with Woohah providing access to its collection of large-scale LED screens in combination with Fika's Alchemy Pipeline realtime virtual production capability and content services.

"As one of the largest providers of premium LED hardware and live performance hardware in Australia, we're very excited to be working with Fika Entertainment to expand our hardware offering to the film and television industry and make this technology accessible to a range of content creators," said Woohah's CEO, Arosh Fernando. "We have the capability to work with a client to create a bespoke setup that will facilitate the project-specific shot coverage needed."

Fika Entertainment is a virtual production company with operations in Melbourne and the Gold Coast, offering realtime animation and VFX for live action productions, motion capture and the creation of a range of immersive ancillary products.

In response to industry demand, Fika Entertainment is currently developing their Gold Coast studio facilities, which will also form a Queensland base for Woohah Productions. The new facilities will enable walk-in LED shoots onsite for smaller scale productions such as television and commercials and compliments Fika's cornerstone cutting-edge studio in Melbourne. "We are really excited about having a home base in the Gold Coast to offer our hardware solutions to the industry there," said Fernando.

"This level of responsive LED capability is transformative for any type of production. Limitations posed by geography or weather, or access to a particular space to shoot a sequence, can be removed," Fika Entertainment CEO Kris Maric said.

"Under the alliance we have the capability to rapidly integrate practical set elements and realtime VFX via our proprietary Alchemy Pipeline software linked with Woohah's

walk-in LED wall set-up and to enable anyone to produce content in innovative ways. Fika's expertise in realtime content creation, together with Woohah's hardware and infrastructure experience allows us to really simplify and streamline the realtime LED setup and shoot process, saving time and money in production," Maric added.

At Woohah's Melbourne studio, a permanent three-sided LED wall has already facilitated a range of commercials and livestream events, and the company regularly sets up large-scale events around Australia.

"We are delighted to be partnering with Woohah Productions to push the hardware boundaries of what we can offer to our live action production partners," said Maric. "Our interest is to support creatives to access the technology that has revolutionised the film industry, and to facilitate the creation of CG content that allows for storytellers to innovate through the inclusion of virtual production as part of their processes."

From television commercials to full-scale live action film productions, LED screens are becoming the ubiquitous tool for content creation on a large-scale. Since Disney's The Mandalorian catapulted the technology to celebrity status, LED screens have become an accepted part of film production due to the flexibility they allow for the production team and the ability to place actors in any imagined world - real or virtual.

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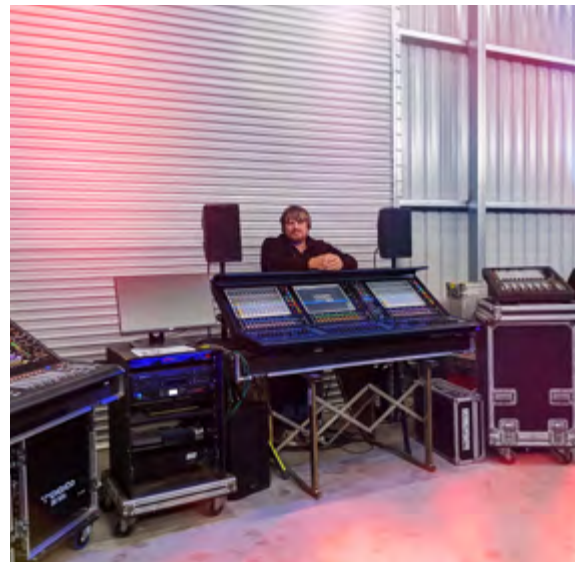
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PMLS gets futureproof with DiGiCo's Quantum 338

Professional Music & Lighting Systems (PMLS) are a production company based in Hobart, with a focus on high-end touring, education and premium corporate events. PMLS were among the very first handful of companies in Australia to get their hands on DiGiCo's latest flagship console, the Quantum 338.

DiGiCo's latest digital mixing solution sports a host of new mix and interface features, representing a dramatic step up in processing power and connectivity. With a sleek new look and design enhancements across the board, the Quantum 338 is quickly being added to many production company's 'most wanted' lists.

Director of PMLS, Nick Morse, says the company was after something to fill the role of a touring and hire rig with extended I/O, and chose the Quantum 338 after being wowed by its design features. "The three-screen workflow and 32bit local inputs are something we really like, and the improved screen brightness and GUI is very impressive,"

he says. "If we combine the Quantum with DiGiCo's SD-Rack, we have something that can handle a large amount of I/O and which has the processing capacity to treat all that audio too."

"We're devoting time to getting up to speed with the new features, and from the short time we've had it, I can already say the 338 looks like the way of the future. The new Nodal Processing and KLANG integration are things I definitely see us making good use of. I think the technology behind KLANG is an important development, one that might even become an industry standard. When that happens, we'll be ready."

PMLS were originally considering adding a DiGiCo SD10 to their equipment line up, which already includes an SD9 and SD12, before being won over by the Quantum 338's impressive feature set. Morse notes that DiGiCo is his console manufacturer of choice



when it comes to high-end live applications. Having used DiGiCo technology to spearhead experiences like Falls Festival and Dark Mofo, and on artists such as Rūfūs Du Sol, Tash Sultana and Guy Sebastian, and more recently with the Quantum 338 for artists such as Holy Holy, Spiderbait, and Pete Murray, PMLS is delighted to be able to add its new

console to its regular rotation of production hardware. Most recently, the Quantum 338 (along with an SD11) was used by PMLS for the 'Basin-ish Concert 2021' (26th and 27th March) which included artists like Bec Stevens, Kim Churchill, Boo Seeka, Spacey Jane and Ball Park Music.

"The majority of clients will specify a DiGiCo and we work a lot with Waves plugins, so our choice to keep upgrading in the DiGiCo realm was an easy one," Morse concludes. "The consoles have a transparent sound, and you can make the workflow as simple or as complex as you like. I feel we've now got something suitable for every scenario."



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Upgraded technical production for The Thebby

Opened in June 1928, the Thebarton Theatre was considered the premier venue for concerts, films and theatre performances in Adelaide. As the years have passed by, the Thebby (as it's locally known) has become treasured by artists and concert goers alike. It has a place in the hearts of many which stirs up nostalgia; the memories of a first gig or indeed the essence of the live music experience. The Thebby has faced many challenges in its time, and recently has faced two of the largest – the widening of South Road and the impact of COVID.

Sitting adjacent to the north-south arterial spine of Adelaide, South Road, the Thebby, located in the inner west suburb of Thebarton, is close to the CBD but enjoys its suburban location which gives great access to music fans from across the city. This location has more recently proved problematic with the encroaching road of progress endangering its very existence. In 2019, a battle to save the Thebby from demolition from the expanding South Road gained international attention which ultimately has resulted in the alternative solution of tunnelling nearby. This reprieve was welcomed and celebrated but no one could foresee the impact of COVID that saw the near extinction of events held at the Thebby from March 2020.

The Thebby remained resilient and, in February 2021, saw the return of live events along with an upgraded technical production installation by long-time in-house production provider, Novatech Creative Event Technology. The shutdown during COVID proved the ideal time to reinvest into the Thebby with Novatech redesigning the installation and fully revamping the production with an improved audio and lighting system that is worthy of an iconic music and performance destination.

Celebrating 20 years in business, Novatech has been a long-term partner of the Thebby and saw the chance to upgrade the venue as part of their long-term support of the arts and live music. The installation was designed with

touring acts in mind and what would be used on the majority of shows. An industry leading audio system from L-Acoustics now includes a 16 element K2 line array for FOH with six KARA, 12 SB28s, two ARCS Focus and four 8XTs. 115XT-HiQs are used for stage monitors with FOH audio control being taken care of by a Digidesign D-Show with sidecar.

Lighting features a Wholehog 4 for control and fixtures including Martin Mac Vipers, GLP Impression X4s, SGM X-5 LED Strobes, Kupo blinders and Base Hazers on stage. This gives a highly flexible and versatile lighting solution to meet most riders. Each gig is easily supplemented with additional lighting, audio and vision equipment from Novatech's vast inventory as well as technicians as required.

In upgrading the technology Novatech's Managing Director, Leko Novakovic, remarked "We're proud of our long association with the Thebby and, more importantly, saw this as an ideal time to improve what already is a sought-after live performance destination. We wanted to upgrade the installed technology to give concert promoters, production managers and artists alike the best possible base installation for their shows as the recovery from COVID starts the long and hard road."

The Thebarton Theatre recently received \$4m in new funding via the State Government's Local Government Infrastructure Partnership Program for non-production related projects. This sets the scene for further refurbishment of the beloved venue, which has recently had its air-conditioning upgraded. The future is bright for the Thebby, and Novatech looks forward to contributing to further upgrades in the near future to ensure it remains the live music venue of choice in Adelaide.

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LETTERS

Your Bulletproof Backpack Livestreaming Setup

by Benjamin Powell

Let me set the stage for you; a client you're doing a basic AV gig for next week has suddenly decided that they want to live stream their presentation to YouTube, and they don't want to have to pay a fortune for an entire tech team. Of course, they said that their "Nephew does streaming all the time from their bedroom, so it can't be that hard."

I'm sure we have all had this story in some shape or form over the years. I want to let you know that in this case, it's not that far from the truth. Live streaming can be pretty low tech to set up and start. However, doing it right and doing it at a quality that your clients will still be happy paying for is another story.

So in this article, I want to talk about the essential gear you need to run a high-quality backpack live stream that you can quite happily charge clients for and still have them come back for your services.

We will discuss the pros and cons of some off-the-shelf gear and some software that you will need, and then, in conclusion, I will tell you the best setup for a multi-cam stream that your clients will be happy with.

So before we talk about gear, we need to address the three components of the event; the internet connection, encoding, and vision management.

The internet connection

Possibly the most critical and overlooked aspect for your clients and venue will be your internet connection. One of the worst options you have is connecting to the venue's Wi-Fi. There are a million reasons why this is bad, so I'm just going to say DON'T. Connecting to the venue LAN is ok, but it will be limited in speed at many venues, may have some network restrictions on it, or in the worst case, they will try to charge an exorbitant fee for it.

Your best option is to work with an internet bonding service. What that will do is give you some hardware to insert the hotel LAN cable, connect to the hotel Wi-Fi, and insert several mobile SIM cards across multiple different network providers. All those different internet connections get bonded together to give you a super reliable and fast connection, so no matter what happens to one connection, you have all the others to use.

For a professional set up you can look at a service like Terradek cloud, with their Vidu device, that will run you up about \$1000 for the hardware. They have a subscription fee for the bonded internet, and as their bonding hardware is also a video encoder, there are benefits to this device over others.

Or you can use a cheaper service like Speedify. They don't have the hardware, but their software will allow you to connect multiple mobile phones, LAN, and Wi-Fi on your laptop.

In both cases you will still need to pay for your mobile data, but when the entire production hinges on you being able to output the data, you need to be sure you have this part locked down.

Encoding

Video encoding is the process of preparing a video for output by ensuring it meets encoding and decoding (that's what CODEC stands for) formats and specifications. This includes converting from one format to another and cleaning up any artifacts that may be leftover during production. During a live stream, you will need to encode the live vision you are getting from your cameras into something that can be sent over the internet to be distributed to the video service.

If you're not using the Terradek Vidu and locked into their encoder/bonding service, then you can look to the Blackmagic products to do your encoding.

There are two products from Blackmagic that are excellent options, and it depends on how fancy you want to be with your streaming. If you are going to run a single camera, then I recommend looking at the WebPresenter. The WebPresenter converts your camera output into a virtual webcam that you can put into software. If you have SDI out only on your camera, you will need to get an SDI to HDMI converter as they only take HDMI in, but this is more than enough for live streaming.

If you want to be fancy and want to do multicam, I would recommend using the Blackmagic ATEM mini or ATEM pro. This allows you to have a hardware vision switcher with four HDMI inputs, two audio inputs, and a monitor.

Going the ATEM route is the best option as it solves a few issues that you will have with audio capture if you don't have audio in on your camera that can pass through to the HDMI. You can use one of the two 3.5 jacks to post in audio.

Vision management

At this point, you have got your camera, audio, and encoder all passing video through to something, but you need now to compile it all into a single data stream that can be sent via the internet to YouTube. The easiest option is to use a laptop with one of three software options; Vmix, OBS, or Streamlabs OBS.

All three options are primarily free but have slightly different functions and skill levels to use. If you want a more robust, well-built, and broadcast-level tool, then go with Vmix. There is a bit of a learning curve, but they have been around for a while and have excellent support and guides online, so it's worth looking at if you think you will be doing a lot of streaming.

If you want a super simple and functional tool that works, then go for OBS. This software takes what you put in, allows you to do some simple switching, and then send it to a single destination. It's no-frills but is used by literally thousands of streamers with very few issues, so it's a great place to start.

Lastly, Streamlabs OBS is a customised version of the vanilla OBS software that allows you to use widgets to enhance video production. It's used a lot by gaming streamers, so it is skewed that way for what their widgets can do, but if you want to experiment a little to make the production a little more interesting, this may be worth trying.

Each of these software packages has a one-click YouTube connection. Still, they also allow you to stream to another platform such

as Bettercast, so regardless of where your client wants you to send the video, you can accommodate them.

In conclusion

I have spoken in brief about how and what you need to consider if you're going to do a client live stream, but now I'll talk about how I put a gig together that works, is easy to transport and is very cost-effective in setting up.

The gear list

1. Laptop with OBS installed - I have a dual boot computer, so one operating system has only OBS, Chrome, and drivers on it, and no other software. This makes the set up a little more stable. It also means that you will only need to have one single input of the ATEM video and ATEM audio, and you can manage the entire event from there.
2. Two cameras with HDMI output - I have Canon EOS100 mk2s on sticks and lock one on the podium and the other locked as a wide shot to the audience for some flavour.
3. Radio lapel mic - take the transmitter and have that in an output of the desk, then have your receiver plugged into the ATEM audio input. Doing it like this means that you're not bound to just the presenter, so if they want to play audio from their computer, you are going to have that on the stream as well.
4. ATEM mini - This little hardware unit makes vision mixing so simple. HDMI in two cameras and the passthrough from the presenter's laptop/ projector (slides). With that, you can do single button PIP of slides, some ok transitions, and you're consolidating the audio and video into one USB input of your computer.
5. Internet bonding - I built a multi-sim bonded internet device using a Raspberry Pi, some USB sim card Wi-Fi devices, and the Speedify app. But you can just as quickly USB two mobile phones to your laptop, then using Speedify as well, bond the hotel Wi-Fi, LAN, and the two mobile phone data plans to ensure you have a decent connection.

That whole setup is pretty easy to make, and you don't need to use the same cameras as I do, but you can build this entire kit for under \$2000 if you shop around. You can be streaming for clients, and it's going to look slick, sound great and be very easy to manage and maintain.



NEW GEAR

Avolites Diamond 9

Avolites has launched its new flagship Diamond 9 console in two versions: D9-330 and D9-215. Bringing a new distinctive look and feel to the console, The D9-330 boasts 11 ultra-bright touch screens, including 3 main workspace screens, 3 for media preview, and specific screens for attribute control and softkey short cuts. The brand new motorised touch sensitive Penny & Giles faders and new encoders each have their own RGB bar graphs so levels can be monitored at a glance. There's also a return of the backlit integrated keyboard.

Australia: Showtools www.showtools.com.au or (02) 4646 1199



Astera AX2 PixelBar

The AX2 PixelBar is a linear wash fixture with wireless control, onboard battery, individually addressable LEDs, ultra-high colour rendering, digital colour calibration and a 21-degree beam. It comes complete with a range of rigging tools to provide solutions for multiple lighting applications and sectors, from concert touring to live events to TV productions and architectural and installations.

Australia and New Zealand: ULA Group
www.ulagroup.com or AU1300 852 476 / NZ+64 9 218 6532

Bose AMM

Bose Professional's new AMM multipurpose loudspeaker line includes two full-range loudspeakers, the AMM108 and AMM112, and a companion subwoofer, the AMS115. The AMM108 utilises a coaxial two-way design with a 1.7-inch compression driver and 8-inch woofer; delivering 110° x 60° coverage with 128 dB peak output. The AMM112 is also a coaxial two-way design, with a 3-inch compression driver and 12-inch woofer, delivering 110° x 60° coverage with 131 dB peak output. The AMS115 subwoofer runs a 15-inch transducer with low-frequency extension down to 35 Hz, producing 130 dB peak output.

Australia and New Zealand: Bose pro.bose.com or +61 (0)2 8737 9999



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NEW GEAR



Lightware Taurus

Lightware's Taurus UCX is a universal switcher that offers the combination of USB-C and HDMI connectivity in one single device to transform any meeting space or huddle room into a unified communication powerhouse. The Taurus UCX lineup will initially release in four variants, including two primary crosspoint IO layouts; either as 2x1/4x1 auto switchers, or as 2x2/4x2/4x3 discreet matrices. Each layout offers IO flexibility targeted at uncompressed high resolution applications, with editions that support encoding of audio inputs via Dante and AES67 audio standards. This unique connectivity platform allows video, audio, control, ethernet, and USB3.x signals to be transferred via a single USB-C cable, and together with the auto-switching and intuitive room control capabilities the Taurus UCX opens new possibilities in the world of collaboration.

Australia: Lightware Australia lightware.com or (02) 9476 8850
New Zealand: Pacific AV www.pacificav.co.nz or (09) 947 5230



Clear-Com Station-IC

Clear-Com has released the new Station-IC™ Virtual Desktop Client, a Mac and Windows-based software application that connects to Clear-Com's Eclipse Digital Intercom Matrix and coming soon, the LQ Series of IP interface devices. Station-IC users connect natively to a central intercom system that hosts essential services such as audio and control systems, as well as panels, belt packs, and even two-way radios or endpoints from other intercom manufacturers. Bringing Agent-IC's intuitive UI to the desktop, with the added benefit of more licensing options and a flexible application window, both local and remote users can benefit from high-quality audio with very low latency.

Australia: Jands www.jands.com.au or (02) 9582 0909
New Zealand: Oceania oceaniaproductions.co.nz or 09 846 5533



Sonance Invisible Series

Sonance's Motion Flex Invisible Series offers a suite of advancements in invisible speaker engineering including Sonance Motion Flex Technology, featuring an all-new transducer, crossover, and motion technology. The wide bandwidth Wave Flex Drive Unit behaves as a high-bandwidth midrange and high-frequency transducer, all in one. The carbon fiber Air Flex Woofer connects to a chamber of air behind the speaker diaphragm resulting in a piston-like movement for robust and powerful bass. With an ultra-low crossover, these speakers have nearly 180 degree horizontal and vertical dispersion for consistent tonality from every listening position. The new Sonance Invisible Series speakers offer enhancements that cannot be seen, but can be heard.

Australia: Amber Technology www.ambertech.com.au or 1800 251 367
New Zealand: Amber Technology www.amber.co.nz or +64 (0)9 443 0753

Highlite Infinity Lens Adaptor

Are you looking to mix your traditional fixtures with new LEDs so you can more affordably switch your rig over and update it? The new lens adaptor ring from Highlite Infinity, which mounts onto Selecon Pacific and SPX optics, will make it easy for you to re-use parts of your existing rig in an upgrade. When you use this adaptor ring with your existing optics, it will make them compatible with Signature Profile bodies from Highlite Infinity.

Australia: Clearlight Shows www.clearlight.com.au (03) 9553 1688
New Zealand: Kenderdine Electrical kelpis.co.nz or (09) 302 4100





PROLiGHTS Astra Beam260IP

The flagship Astra Beam260IP is an IP-rated moving beam light, powered by a new OSRAM lamp, the Sirius HRI 260W PRO. With a long life-span of 6,000 hours, combined with a completely sealed enclosure, the Astra Beam260IP has a near-zero maintenance cycle, reducing operating costs. The Astra Beam260IP produces a parallel 2°, high-contrast, pure beam of light with an extraordinary output of half a million lux at 10 meters. The Astra Beam260IP has a rugged and completely sealed chassis made of aluminium alloy, with internal components treated with an IP coating, guaranteeing real IP65 water and dust-tight design for lasting outdoor applications.

Australia: Show Technology Australia www.showtech.com.au (02) 9748 1122
New Zealand: Show Technology New Zealand www.showtech.nz (09) 869 3293



Event Lighting F300IIFC

The F300IIFC is a high output fresnel featuring a 300W RGBALC LED module, providing access to a wide range of colours. The upgraded aluminium housing has a motorised zoom of 12-25° and Seetronic True 1 in / out for power with both 3 and 5 pin DMX.

Event Lighting Black 290mm Box and Flat Truss

Black 290mm box and flat truss with high-quality black powder coating, which is as scratch resistant as you can get. Available in 3m, 2m, 1m and 0.5m sections with corners to suit.

Event Lighting ENFORCER7X60BE

Featuring 7x 60W RGBW LEDs, the ENFORCER7X60BE has a zoom of 3.5 to 60°, allowing for a punchy beam, wide wash and pixel control. The bi-directional rotating lens offers an array of aerial effects and the in-built macros allow for easy access. There is 5 pin DMX on-board along with RDM and two-way WDMX control. An optional road case for two units is available separately.

Australia and New Zealand: Eventec
www.eventec.com.au or +61 (0) 2 9897 3077

Robe T2 Profile

Crafted for multiple applications including theatre, television, auditoriums, stages, and concert environments, the T2 Profile produces over 17,500 lumens measured at the front lens via its 850W MSL source. The fixture's exceptional quietness is perfect for scenarios where noise is crucial including classical concerts or recitals and dramas. It is also an ideal long-throw partner used in conjunction with Robe's smaller T1 series fixtures, as both feature the MSL LED engines and therefore produce an identical multi-spectral colour mixing consistency. The T2 Profile incorporates adjustable CCT from 2,700K to 8,000K together with DataSwatch for the quick selection of 237 authentic pre-programmed colours and tones including the most frequently used whites.

Australia: Jands www.jands.com.au or (02) 9582 0909
New Zealand: Jands NZ jands.nz or 021 674 601



NEW GEAR



Sennheiser Mobile Kits

Rounding off the launch of its MKE 400 compact shotgun microphone for cameras and the XS Lav clip-on microphones for mobile phones and computers, Sennheiser has announced the launch of various Mobile Kits. These include a Manfrotto PIXI Mini Tripod and Sennheiser Smartphone Clamp, making them ideal for vloggers and content creators for whom the smartphone is the tool of choice during some or for all of their creation processes. To complement existing microphones, the Mobile Kit is also available on its own as an accessory.

Australia: Sennheiser en-au.sennheiser.com or 1800 648 628

New Zealand: Sennheiser en-nz.sennheiser.com or (09) 580 0489

Yamaha CS-700

The CS-700 is an all-in-one video conferencing system designed for smaller spaces. This wall-mounted system features ultra-wideband audio and high-quality video for clear communication. The 120-degree wide angle camera captures all meeting participants in one field of view. The CS-700 features a beamforming microphone array and four-element speaker bar that captures every word and delivers it to the far end of the room. Wired and wireless expansion microphone options are available to extend the reach of microphone pick-up.

Australia: Amber Technology

www.ambertech.com.au or 1800 251 367

New Zealand: Amber Technology

www.amber.co.nz or +64 (0)9 443 0753

Redback A4450

The A4450 is a 4 x 4 audio matrix mixer that is simple to set up and use. It includes 4 inputs selectable to 4 output zones. Each input is equipped with both dual RCAs for line level and pluggable euroblock connectors for balanced mic/line level signals. Phantom power is available for condenser microphones. The illuminated switches on the front panel can be custom labelled, and used to select inputs 1-4 to each output zone. The optional A4453 selector wallplate enables selection of input sources on or off. A maximum of 1 local zone wallplate per zone can be used in a system, plus one master wallplate. For paging requirements, the A4488 microphone console enables paging to any or all zones.

Australia and New Zealand: Altronics www.altronics.com.au or +61 (0) 8 9428 2122



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MATCH FITNESS & OVERSTEER

by Andy Stewart

Great mix engineers are like star footballers: they perform at their best when they're match fit and playing regularly. It doesn't matter how skilled you are or how many trophies you've accrued over the years; being in form today is what counts.

I must have talked about mixing audio in nearly every CX Magazine since way back in Issue 75, yet only now is there finally a 'Mixing' Issue! About bloody time guys.

Perhaps I should chat about the weather instead, just to be contrary.

Actually, I've just come off about 25 days straight of solid, wall-to-wall mixing a full album in the studio with Kutcha Edwards, as well as live gigs with Ella Hooper, Kate Ceberano, Neil Murray and David Bridie, so I'm in form.

So, perhaps I should start there... and talk about form.

Match Fitness

Like any pursuit or profession, being in form is part of what makes a good mix engineer, live or in the studio. You always hear about cricketers and footballers being in form; well so it is with mixing. You have to practise to get in shape; perform regularly to become match fit. That's when you tend to do your best work. (Although, mixing for more than three weeks

without much of a break is a bit nuts it must be said. I wouldn't advise it. Unfortunately, circumstances have made it unavoidable for me lately.)

Being match fit means a few things. Firstly, you tend to work faster and more efficiently when you're in form. You tend not to squander time or arse about as much, which means you get through the workload more quickly. You don't rush obviously, but nor do you procrastinate.

You also maintain a finer perspective on your gear, monitors and room, which allows you to act more instinctively with regard to levels and tone, without having to muse too much over whether a sound should have more or less of something. Put another way, you spend less time thinking about whether the decisions you make are the right ones, and more time getting on with the tasks at hand.

When you're mixing regularly, there's also a certain freshness of perspective (ironically) that you develop with regard to key elements of mixing structure: choices of reverbs for certain contexts, compression settings, sub-

group layouts of large numbers of channels (like drums, strings or choirs etc.) and parallel bussing of key elements that may need more aggressive tones or treatments.

There's also the benefit of being more au fait with all your software commands when you use them every day. Knowing these inside out, and fine-tuning your preference settings to suit your workflow, can save you hours sometimes. Nothing sidetracks a mix session faster than searching haplessly for answers when your software is misbehaving, crashing or doing something untoward.

Oversteer

Another aspect of mixing that rarely gets a mention is a phenomenon I call 'oversteer,' which is normally something you might read about in a car magazine, or admit to just moments before ploughing into a tree in your old HQ. In an audio context, oversteer simply describes the tendency when mixing to overdo whatever it is you're doing at the time. It might be too much reverb on a vocal, too deep a cut on a high-pass filter, too much bus compression on an entire mix, the wrong level of an instrument – that sort of thing.

It happens all the time to seasoned professionals and amateurs alike, in every aspect of mixing, sometimes in dozens of small ways in one mix. The main cause, it seems to me, is a mix engineer's natural (and unavoidable) tendency to focus on a sound to the detriment of his or her ability to re-contextualise it later (i.e., put it back in its place).



depending on the nature of the sound. This apparent loss of attractive detail can be too much for your subconscious to bear sometimes – even when your conscious mind is trying to guard against the problem. This can lead you to turn it up, EQ it too much, fiddle with its compression settings, or a bit of all these things, which is partly why mix engineers warn against the overuse of a console's Solo function. Anything that pulls a sound out of its context for too long can cause oversteer while it's soloed, and again later when it's returned to the fray.

I often find the most recently added or problematic elements are too loud when I revisit a mix at a later date.

On The Flipside

While there's no denying digital recall is a huge asset in many respects, it also comes with its own set of dangers and pitfalls, not least of which is the potential for it to lead to endless fiddling.

Admittedly, one mix engineer's tinkering is another's fine-tuning, but regardless of your perspective on this, a different kind of exhaustion can set in when a mix is recalled too often, and sometimes this occurs when you least expect it.

This can do several things at once: potentially sour your interest in the piece, send you up the garden path for no appreciable benefit, damage personal relationships, and blow the budget.

The problem with a computer's capacity for endless recall is precisely that – it's endless. Without a human limitation placed upon it there's the potential for digital recall to drive you or your clients around the twist. Moreover, there's often no way of predicting who might hit the wall first, or when, simply because there's no way of quantifying how much energy you, or your clients, have for a given project. Suffice it to say, the computer has infinitely more capacity to recall a mix than any human ever will. Don't forget, it's us humans that need to stay in control here; otherwise a scene from Terminator might ensue – not pretty.

A Final Tip

In my experience, final mastering tone is something every mix engineer needs to get as close to as possible. I'm not suggesting you should try to circumvent the mastering process by doing it yourself, but it's important nonetheless to make every effort to understand what mastering engineers do with your mixes. If there's a pattern emerging from all the masters made of your work, you should be the one who discovers it. I would argue that the vast majority of mixes are generally worked on at relatively high volumes, and these often end up sounding a bit dull.

Do yourself a favour during some of your mixing sessions and A/B your mixes with some other successful music kicking around on the airwaves. No-one likes to make this comparison of course – it's confronting, demoralising, and at times downright embarrassing, but isn't it better to face this reality in the privacy of the mixing room, rather than later in public?

Andy Stewart owns and operates The Mill studio in Victoria, a world-class production, mixing and mastering facility. He's happy to respond to any pleas for pro audio help... andy@themillstudio.com.au or visit: www.themillstudio.com.au

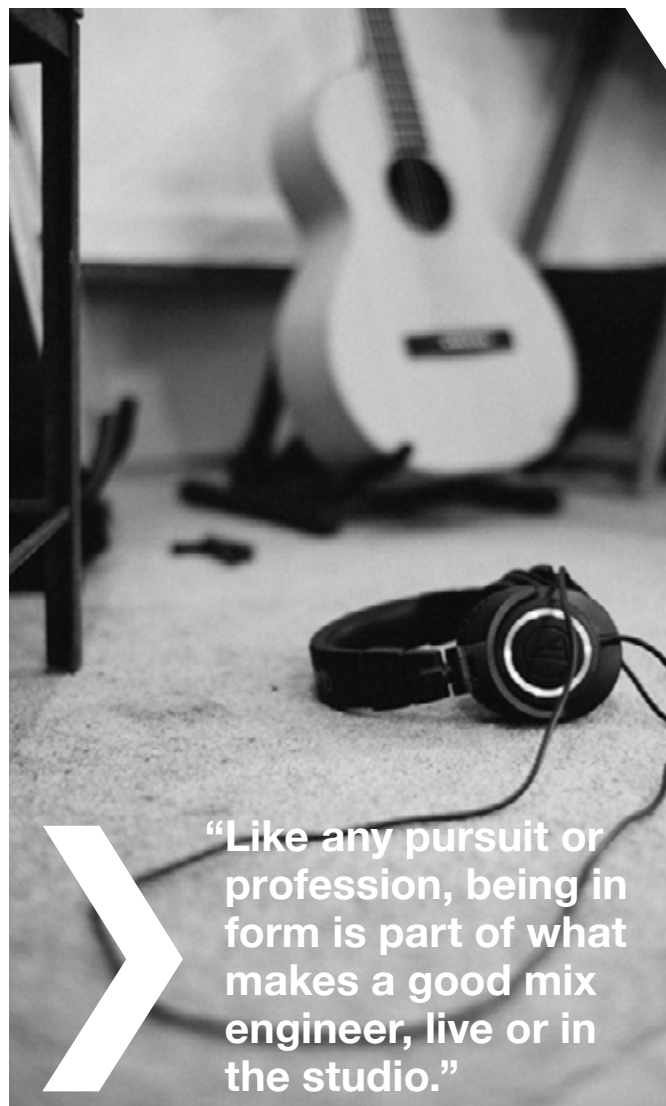
The good news is that oversteer usually has a simple cure... time away from the session. It's one of the key benefits of computer-based mixing – being able to remove yourself quickly and easily from a piece, set it aside without losing your sound, and either open another mix or take a break.

Oversteer is typically thrown into stark contrast later when you return to the track (after dinner, the next day), when your fresh perspective allows you to hear problems clearly and act decisively. Back in the days of analogue consoles and outboard gear, engineers had little choice but to work long hours to push mixes over the line one at a time, even after exhaustion with that particular piece had set in.

Being able to save, close and then reopen a session at will is an extremely powerful asset at the modern mix engineer's disposal. Used wisely it can advance your mixes enormously.

Oversteer can happen to any sound at any time, but it's particularly prevalent in and around last-minute overdubs, or when the Solo button is used too often or for extended periods. Putting a sound high above a mix, as often happens while you're overdubbing a new musical element or soloing a sound while working on it at length, can quickly warp your perspective on how that sound ultimately beds back into the final mix.

Not only does the soloed element inevitably diminish upon its return to the track, it potentially loses focus, fidelity and nuance,



“Like any pursuit or profession, being in form is part of what makes a good mix engineer, live or in the studio.”

Weta Workshop Unleashed

Richard Taylor, co-founder of Weta Workshop, takes us behind the scenes.



by Jenny Barrett

Auckland is currently the first city in the world to experience Weta Workshop Unleashed, a new guided visitor attraction from Weta Workshop. This project represents the fulfilment of a long-term vision for Weta Workshop co-founder Richard Taylor to provide an insight into the Workshop's creative processes uninhibited by the health, safety, and confidentiality restrictions of the actual Wellington Workshop.

For over twenty five years, the Workshop has applied its craftsmanship to blockbuster films including *The Lord of the Rings* and *The Hobbit* trilogies, *Avatar*, *Blade Runner 2049*, and most recently, *Mulan*. In recent years, the team have expanded into the creation of consumer products, interactive projects and immersive location-based experiences. Over the past four years, Weta Workshop's location-based experience division has enjoyed steady growth and critical acclaim in the industry, most notably for their creative collaborations with Te Papa. The record-breaking *Gallipoli: The scale of our war*, which has exhibited in the capital since 2015, won a Thea Award for Outstanding Achievement, an accolade that recognises the very best themed entertainment and design projects, worldwide.

Weta Workshop Unleashed uses three original film concepts, horror, fantasy and sci-fi, to showcase how physical effects and props are imagined and then created. The experience

aims to unleash people's aspirations "to make cool stuff".

We talk to Richard Taylor about designing the exhibition itself, and the potential for the live entertainment sector of the latest technologies being used in film production.

Who did you work with on lighting, audio and visual elements for Weta Workshop Unleashed?

Our internal team includes production designers, producers, artists and technicians who developed the concepts and briefs for the AVL [audio, visual and lighting]. To execute our AVL we collaborated with a number of vendors.

For the experience we collaborated closely with Marc Simpson and his team at Toulouse Lighting on the technical systems design, procurement, install and implementation. They were excellent at working with us to bring this experience to life. Tane Upjohn-

Beatson, a brilliant local composer that we have done many productions with in the past, was the composer and sound designer for the experience and consulted on the audio install.

And, working alongside them, were our in-house media production team, animatronics department and manufacture division.

As the space can transform into an events venue capable of hosting up to three hundred and fifty guests, Streamliner Productions came on board as our vendor for the event production requirements. This team also delivered fantastic work to the Unleashed experience.

What was the brief - and the challenges - from a lighting, audio and visual perspective?

From the moment you enter Weta Workshop Unleashed you're thrown into a world of creativity and can explore Weta Workshop's process of developing props, special effects, prosthetics, miniatures and costumes for film. The overall brief for AVL was to complement and enhance the storytelling and immerse our guests into the theme of any given space in a wonderful and sometimes wild way. Some of the spaces transform visually with the use of light and sound so this added to the challenges for these teams.

Much of the work that most people are familiar with would be our involvement in film. We love this because our clients and collaborators produce incredible stories and our creative contributions are enhanced due to the way a director may choose to show our work within their film.

What we can't showcase via screen mediums though is the physicality of the objects created. With Location Based Experiences you can see, hear, touch, and at Unleashed,

dare I say smell what you would usually only see through someone else's lens. Weta Workshop Unleashed provides a unique opportunity to get up close to the details within a miniature (and even climb underneath it!); see a lifelike animatronic talking to you from only a metre away; and be fully immersed in worlds usually so distant.

And the solution?

Right as we were in the middle of building Weta Workshop Unleashed and as procurement for production equipment was about to take place, COVID hit. The decision was made to continue development and bring this experience to the world. The uncertainty though did mean we had to figure out how to bring a world-class experience together on a much tighter budget.

Through a bit of a process we landed on the following:

Ambient audio for each main space is provided by QSC K.2 series speakers. In addition to this we needed a small and flexible option to provide spot audio for effects and sonic changes as you move through the experience. We settled on JBL104 reference monitors. Overall there's about 105 speakers installed providing the sonic experience designed by Tane Upjohn-Beatson.

Lighting is a combination of custom-made LED fixtures installed into set pieces, such as fireplaces, UFOs and glowing creature organs. These were made by our animatronics department led by Zolio Abad. Room and spot lighting is made up mainly of Showpro photon multi RGB washes, EK EprofileFC profiles and a number of birdie pars. Overall there's more than 230 fixtures lighting the experience.

Projectors are all Panasonic RZ970. We were fortunate enough to get our hands on the new DLE020 lens, allowing us to project a curved, blended image of 11.5m by 2.9m with a throw distance of only 1.6m.

Over 50 various sized displays are also installed into custom housings and mounts, including a 9x 5" circular LCD panel installed into mechanical eyeballs.

Show control is custom built by Toulouse on a Brightsign network.

What was the most exciting solution that your team came up with?

In the fantasy area of Weta Workshop Unleashed the real showstopper is the Everclan miniature castle and this is partly due to the thoughtful and beautiful lighting element. The lighting of the intricate castle subtly moves from the first light of dawn, through the day, and into the blackness of night. It is perfectly in synch with an epic movie quality soundtrack delivered by Tane and lit by Mark and his team. The goal was to make the experience as authentically cinematic as possible as the light emerges to reveal the castle.

Now that the display is up and running, is there anything that you would do differently?

We're always proud of the work we bring to the public eye and Weta Workshop Unleashed is no exception to that. Of course, when we do it all again, either for ourselves or a client, our fresh learnings around equipment, integration and guest experience would play a key role in the design and development of the next project.

The beauty with technology today and what Toulouse could provide for us, is its adaptability. An advantage of Unleashed being an experience we own and operate means we can adjust elements as we learn more about our guests' experiences and preferences. Swapping out multi-screen content can be done from the Workshop in Wellington, adjusting lighting palettes in different spaces, with only a couple of clicks.

What's coming out of the Weta Workshop at the moment that is transferable to live entertainment?

We have been heavily involved with Mixed Reality technology due to our early relationship with Magic Leap and this and other similar head mounted displays will change the face of immersive theatrical, theme park or live experience interactions for the visitor and audience. This offers immensely exciting opportunities for the integration of environmental sound combined with that delivered through the head mounted displays. Couple that with haptic and interactive lighting cues prompted by MXRL content specific to the viewer, and you have something really dynamic and significantly game changing for our industry.

And what's next?

The technology available today including stuff still being developed and stuff we can only yet dream about is just mind-blowing. Live events and location-based experiences are only going to become more immersive and more awe-inspiring. The blending and interaction of digital and physical worlds is a space we are exploring and the potential to seamlessly jump between real world experiences and the Metaverse really excites us and is something we are exploring at the moment.

Weta Workshop Unleashed is located at Level 5, 88 Federal Street, Auckland, part of Skycity's Federal Street entertainment precinct.



Richard Taylor



“The technology available today including stuff still being developed and stuff we can only yet dream about is just mind-blowing.”

EUROA MUSIC FESTIVAL 2021

Making the most of our luck

by John O'Brien

Photo by Rick Clifford @rcstills

Can we? Can't we? What do the rules say this week? What are our A, B, C and Z options? What happens if lockdowns occur? How do we go about COVID site safety? What if allowable numbers change? Can we afford to run this event now? Can we afford not to?

I am a committee member on the inaugural Euroa Music Festival (EMF) and these questions have been part of our regular discussions for the last 6-12 months. Led by Northern Republic venue operator Adam Palmer, a group of locals have long been planning a music festival for our area. Initially slated to run in October 2020, pandemic restrictions saw that date shunted. We re-settled on 27th March 2021 and put all our efforts into making that happen.

Carrying the can & gambling with fate

As wisely pointed out by Jenny Barrett last issue, promoting events is a risky business. Our group was aware of the perils involved but decided to forge on regardless. To a person, we were all very keen to offer any sort of light relief to the stresses of the previous year. We were determined to shake up our somewhat staid town and put on some

banging tunes and entertainment, getting people out of the house while highlighting the charms of Euroa.

This festival went through multiple iterations: originally scheduled as a street party in 2020, then delayed until March 2021 with Covid safe pens for 3000 (Tier 3) on the Euroa Memorial Oval, restricted again to 1000 pax (Tier 1) so we moved off the oval and under the trees, then finally having restrictions lifted only 10 days out. Unfortunately, we'd already blown most of the budget by then and couldn't go hard with a final ticket push or production enhancement. We also stuck with the call to stay off the oval and under the trees - probably our best decision of all.

Getting professional help

Adam runs a venue so has experience putting on a show and the rest of the committee bring broad skills, but the scale of this whole

venture was another level. EMF were already partnered with Small Time Group to help with concept planning and marketing when I got involved August 2020. The time was ripe as I'd been feeling a little guilty being able to swan around mostly mask-less in the countryside and I wanted to share this freedom, so put my hand up to impart some staging and production knowledge.

Having the artists playing from the existing grandstand was a key part of Adam's vision. After a lengthy site meeting, I pointed out the pitfalls, then went with the concept and worked out how we could fit a stage, PA and lights in there. It was difficult but do-able. I measured and mapped, then sourced quotes for staging, PA, lighting and video. Because of the then mandatory distancing, we planned on multiple screens in the crowd, delay stacks everywhere and a whole raft of sideshows and entertainments to keep the punters amused but physically apart. We simultaneously had several grant applications in with local, state and federal bodies which gave a broad budget to go large if they came off.

Our first clever step was getting Jenny Moon from Moon Mother Productions (MM) onboard to source our production needs. We had competitive quotes from a local PA hire mob but opted for the flexibility and scale of MM. I've also known and worked alongside Jenny for 25+ years, so had plenty of confidence in her approach and ability to solve problems. This

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Photo by Rick Clifford @rcstills



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came to the fore as we underwent the constant re-versioning that happened as the goal posts shifted seemingly by the day. More numbers / less numbers; grants on / grants off; shire support / bureaucratic impediments - Jenny was brilliant in swinging with the punches.

The final configuration we locked in was two stages under the trees. Main stage to be MM 'Archie' stage and second stage on the back of a loaner semi. Adam and I tried to cobble together enough free local PA gear for the second stage, but Jenny put her hand up as a sponsor and provided better PA and lights gratis for Stage Two. What a champ - thank you.

The other good call was bringing in Rachelle Watson from The Background. While I was confident we could bring it all together, we are but volunteers and only have so much time and energy. It was clear that we needed some professional help to run the whole show efficiently. A highly experienced event manager, Rachelle has a way of cutting

through the chaff and just getting things sorted. Things like site safety, security, liquor licensing and general site layout and dynamics all happened smoothly. Setup went well without any clangers. Show days can be intense in that role but Rachelle's calm demeanour was always there when needed and we sailed on through a cruisy day.

The tech that made it sing

We sited the main stage between two particularly majestic gums. It had the best sightlines between the recently trimmed eucalypts, which framed it a treat.

Moon Mother's Archie stage measures 7.5m by 6m and it has a neat fold-out system for the arched roof canopy. Elmo and Blake arrived Friday morning and got to setting it up before the production truck arrived with Ben, Josh and Stu.

PA consisted of four RCF HDL20A line array modules per side and VMB Line Array lifters

flew these neatly. Six RCF 9006AS double 18s provided the thump. System tech Ben had an Allen & Heath D-Live S5000 40 console out front and Blake used an Allen & Heath D-Live C1500 to give the bands happy sounds through the Martin LE1200 wedges and LE1500 fill. Mics were all the usuals, plus extras for cleaning between changeovers. MM use a soap dish Blue Light system for microphone sanitation.

Ben's been around the traps and used a lot of consoles. "There might be other desks out there that are nicer when you have time to set them up," but he finds the D-Live good for festival flow between different operators.

Josh had 16 LED Pars, eight LE Sunstrips and a couple of blinders to play with. Nothing epic but he made it all work well and had the bands looking good.

When we had dreams of a larger budget, I originally wanted to invest in IP rated uplighting for every tree surrounding the oval.



Photo by Rick Clifford @rcstills



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Maybe next time... this time around, Josh used six Ex36 LED floods as uplights for impressive flora surrounding the stage. DMX linked to match colours to stage fixtures and the whole diorama got so much bigger as the sun disappeared. We both love painting trees like this.

Stage Two was a bit simpler on a ubiquitous 40' curtain-side. Loan gear from MM comprised an RCF 4PRO and 8006 sub per side, controlled side-stage by iPad linked to an Allen & Heath QU32 console and giving four sends of foldback through HD12As. Elmo bravely gave it all, mixing by tablet in the audience, wringing everything out of the little rig while keeping it sounding good.

I hung three LED pars each side and left them on static colours for the DJ sets that this stage hosted after dark. Simple, effective and letting me wander around to soak up the atmosphere instead of madly stressing over programming.

Wins and losses

We ended up with around 1,300 people on site - modest by arena standards yet impossible numbers to think of last year. The bean counters are still finalising the books but we are hopeful of being able to cover costs. With luck, we may even get in the black. Not bad for a first go!

Sitting here reflecting on our success, it's so hard to not feel great pain for everyone involved with Bluesfest. An event stalwart, experienced and professional, now left kicking the dust and wondering how to meet the bills after a second eleventh hour Covid cancellation.

That could have so easily been us. We got lucky; our punt paid off. Only one of our line-up (Jaguar Jonze) had to cancel last minute due to a snap lockdown. Otherwise, the weather gods played nice, the tickets sold well, local accommodation sold out, the

bands and crew were stoked to be on stage for the first time in ages and the punters were beaming, finally allowed to get out and socialise again. Everyone on site was smiling from beginning to end. The vibe reminded me of exactly why I got involved in events some 30 years ago.

It took immense hard work, a whole lot of patience and a fair dollop of good fortune. After a wee break, we will start asking the same questions again. I know that everyone involved would like to see this festival back in 2022 and beyond.

www.euroamusicfestival.com

www.moonmother.com.au

www.thebackground.com.au

www.northernrepublic.com.au

www.smalltimegroup.com

Getting more vocals in the live mix when everything is against you

by Alvin Prasad

I have rarely had the luxury of mixing on a big stage (festivals and stadiums). I, like a lot of us, have to constantly battle with the band that is louder than the PA or the singer that can't project into the mic. But since the increased availability of digital mixers and purchasing my own DiGiCo SD11, I've been able to experiment with addressing this issue, and what I discovered is the magical concept of Parallel Compression, but implemented in the live environment. So what is Parallel Compression? Well first of all, it's not a new concept. It's been used in studios (and live) for ages – it's just a little bit more time consuming to implement live. You need more cables, potentially some splitters, and a spare compressor.

To understand Parallel Compression, you first need to understand compression and its issues. A compressor limits the dynamic range of an audio signal (dynamic range – the difference between the loudest part of the sound and the softest part of the sound). The loud parts of the signal are limited (threshold/ratio) and the soft parts are boosted (gain makeup), and essentially you end up with a signal that is the same "volume" all the way through. This can be useful when you have another 23 channels of audio to manage at the same time. Compress the main vocals, put that gain up a bit and it can get out in the mix better. So, where's the issue? Well, the loud parts are no longer loud, and the soft parts are no longer soft... not at all confusing, is it? Music isn't like that. Singers start soft and then build up to the massive ending and blow the roof off. So this is where Parallel Compression is useful – get the vocals out in front, while still having the soft parts soft (but audible) and the loud parts blowing the roof off, and then still having the ability to manage the other 23 channels on the desk.

This is how I do it. I run the vocals into two input channels and put a compressor on both channels. On the first channel (dry) I use the

compressor to keep the channel from going nuts – a very low ratio, no makeup gain, soft knee and adjust the threshold to kick in when needed (more on this later). On the second channel, a really high ratio like 1:6 (yes, on the vocals) and about 6dB worth of makeup gain. The actual values for everything will vary depending on your situation, but that's the aim.

When it comes to the threshold and how to actually mix it, this is the secret herbs and spices. The threshold for the dry channel just needs to be set to barely kick in – just let that channel be free and use the compressor for signal protection. On the second channel set the threshold so that when the singer is singing soft, it's not doing anything, but when the singer starts getting to normal or even loud singing, the compressor smacks down at least 6dB in gain reduction. The better the compressor, the more you can let this go down, but the 6dB is usually achievable by most compressors without sounding bad.

Then the actual fader mix. Using the dry channel, set your fader to the right position so the vocals sound good in the mix when the song is loud. Use the really compressed channel and set its fader to the right position when the song is soft. If you get it right, what ends up happening is that only one channel goes through the mix at any time. When the singer is soft, the dry channel doesn't have enough signal going through it so you can't hear it, but the wet signal has the makeup gain on it, so you hear that. But when the singer goes to blow the roof off, the wet channel compresses so much that the dry signal takes over and lets the singer go for gold. Controlling the dynamic range without controlling the dynamic range!

Due to the flexible routing on DiGiCos and a compressor on every channel, subgroup, and matrix, you can do this multiple ways. Do it the right way and save your busses for more important things. Here's how I do it (that works pretty well for me):

Alvin started mixing at 15 years old and has spent the last 20 years constantly learning things from anyone and everyone. Alvin has mixed after-party performances for Blackstreet, Mya, Bruno Mars, Bobby Brown, A\$AP Ferg and many more RnB and Hip Hop artists. He works locally for Jaanz International Singing Academy mixing open mic nights and events. His weapon of choice is the DiGiCo SD11, which helped secure his current role at DiGiCo distributor Group Technologies handling support and training for DiGiCo in Australia and New Zealand.

1. Route your main vocals into 2 channels:

DRY Channel:



WET Channel:



2. Setup the compressors – use the attack, release, ratio and gains in the images as a starting point. The threshold will need to be adjusted to your scenario:

DRY Channel:



WET Channel:



3. Do the mix. As a starting tip, have the fader in the same position and then move from there i.e. 0dB)

As an additional tip, you can do this on any mixer that has flexible routing options. And if you find yourself on an analogue mixer with a spare compressor and spare subgroup, send the vocal to the subgroup and insert a compressor on the subgroup – use the subgroup as your "wet" channel.

How to route FX on a DiGiCo console, the better, “cooler” way

by Alvin Prasad

Anyone who's used a DiGiCo console knows how intuitive it can be and how quickly you can pick it up and just start mixing. If you understand the basic concept of routing, your analogue mixing experience means you can get up and running pretty quickly. Why? Well, they just make sense. On an analogue console the mic socket is at the top of the console or the back – so it is on a DiGiCo. Touch the top of the channel to get input routing. Whereas the subgroup buttons on an analogue console are at the bottom near the faders, so (you guessed it) touch the bottom of the channel to get your subgroup and output routing. Easy!

So how do you route FX on a DiGiCo? On an analogue console you would do the following:

1. Turn up the Aux on a channel
2. Connect a cable OUT of the Aux socket on the console to the IN of the FX unit
3. Connect a cable from the OUT of the FX unit to a channel
4. Turn up the Aux Master
5. Then turn up your FX return channel

And on a DiGiCO?

1. Turn up the Aux on a channel
2. Tap the bottom (output routing) of the Aux Master and select a FX from the rack (don't forget to load the FX in the rack first – just like you have to do in the real world)
3. Go to your return channel and touch the top to get the input routing screen and select the FX you want to return into the channel
4. Turn up the Aux Master
5. Then turn up your FX return channel

Pretty simple yeah?

The common issue people raise is that they have to switch between screens to get to the FX rack so they can push the tap tempo button, or adjust settings. The tap tempo is an easy fix – use DiGiCo's macro feature to put the tap tempo on a button so it's always on hand. “Yeah but it doesn't flash the tempo on the macro button like it does when I use it on the FX rack”. OK, well... hold my beer*.

1. On the Master Screen on a DiGiCo, go to Options->Solo and enable the Solo Displays Insert and Outputs for Inserts



2. Load the Ten Tap Delay FX in the FX Rack



3. Turn up the Aux on a channel (for this example we will use Aux 1)



4. Go to your return channel and touch the top to get the input routing screen and select Internal->Auxes->Aux 1 to be the input to this channel



Tip: Make your return channel stereo first if you want to use a stereo effect

5. On this same FX return channel open an insert point (A or B depending on your preference) and insert the Ten Tap Delay (Don't forget to turn on the insert!)



6. Press the PFL button on the FX Return channel and now the FX magically appears on the same screen with a flashing tap tempo button that you can press using the under-screen controls!



You can use this method for an FX, even ones without tap tempo, so that when you need to make parameter changes, just PFL the FX return channel and the FX will appear on the same screen.

*grabs beer back

AVID S6L

by Rob Allan

Robb Allan has mixed FOH sound for headline acts at Glastonbury, V, Reading and most of the major festivals in Europe. Robb has engineered broadcast mixes for Saturday Night Live, David Letterman, The Brits, Later (with Jools Holland), the MTV Movie Awards and more, globally. He has worked as a touring FOH engineer for Coldplay, Manic Street Preachers, Massive Attack, Alt J, Natalie Imbruglia, Lisa Stansfield, and many others. For the last nine years Robb been involved with the Venue project at Avid, and is part of the design team for the S3L and S6L.

In these tips on working with Events on the AVID S6L, Robb demonstrates with real-world examples pulled from his Massive Attack showfile.

About Events on the S6L

An Event consists of one or more triggers, which are configured to cause one or more actions to occur.

Events can be very simple, such as the press of a Function switch enabling a Mute Group, or the press of a connected footswitch triggering a Recall Next Snapshot. These are examples of a single specific trigger (a press of a specific Function switch or the press of a footswitch) causing a single action (enabling a Mute Group or Recall Next Snapshot).

Events can also be quite complex and involve multiple triggers and actions. For example, a single event can be defined so that moving a specific fader above and/or below a certain level sends a General Purpose output, and recalls a specific snapshot and mutes one or more channels. Multiple triggers can be considered conditionally using the available logic operators AND, OR, and XOR.

Events can be defined to operate on specific channels, or to operate globally using the “Any...” Triggers and “Triggered...” Actions. Any...Triggers Many sub-menus in the Triggers menu include choices for Any Aux, Any Group, Any Matrix, Any Mains, and Any VCA (when relevant). Any Strip refers to any input, output, or bus. Any Channel refers to Input Channels only. These let you define triggers that fire whenever the defined criteria is met on any strip, channel type, or channel.

Triggered Strip Actions: similarly, many sub-menus in the Actions menu provide the choice for Triggered Strip. Choosing Triggered Strip creates an action that is applied to the input, output, or bus on whichever strip triggered the Event.

Each event can have between 0 and 8 triggers, and each event can have between 0 and 8

actions. Up to 999 events can be created. The Event list is easy to configure, and pre-configured events are provided to change View Mode on the external screen.

The Events Tab

The Events tab of the Control page is the working area of the Event list system. Events are defined and managed using the Event list, along with the Triggers and Actions lists. The lists and commands available in these sections create a powerful, user-programmable environment. Footswitch and GPI status display are also shown on the Events tab. You can create and load Events Presets, and import events into the current Show file.

1. Event List
2. Event List Commands
3. Triggers
4. Actions
5. Footswitch Status Display
6. GPI I/O Status Display

Creating an Event for Guitar Solos

When pushing up the guitar channel for the guitar solo, most of the time I'm quite happy with the EQ and I don't want to change anything. However, depending on the quality of the guitar sound at the time, I might want to change the EQ to help it cut through the mix, and I've made an Event that does that.

If I hold down the channel's Colour switch whilst I push up the fader, this Event adds a little bump on the high midrange in the EQ, and as I pull it back down, flattens it off again. Let's look at the Events page and see how I did that.

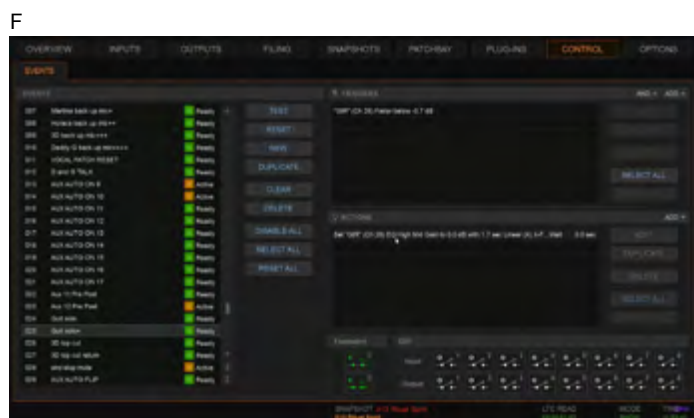
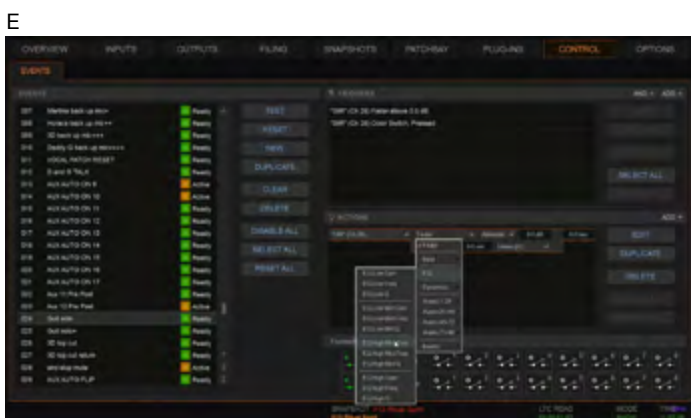
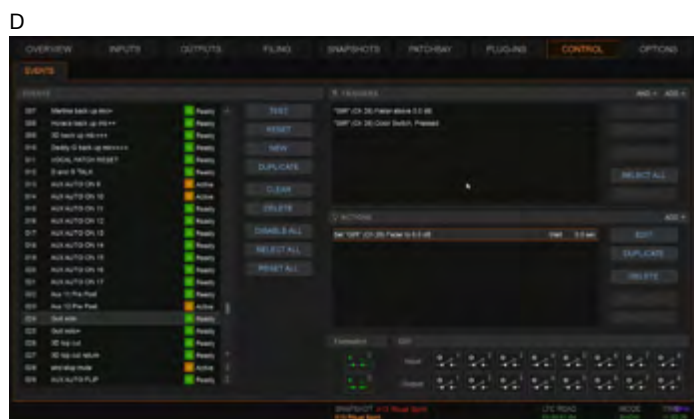
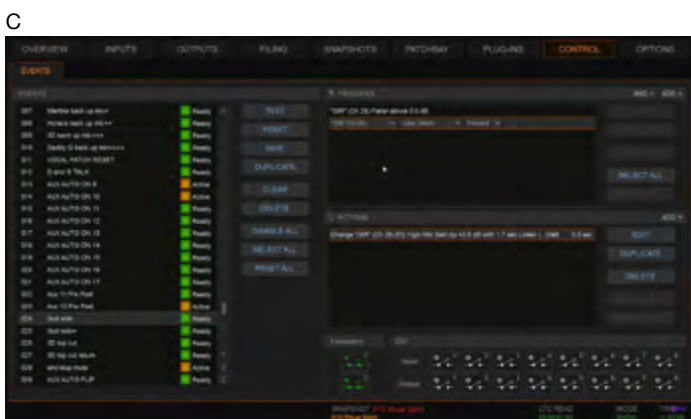
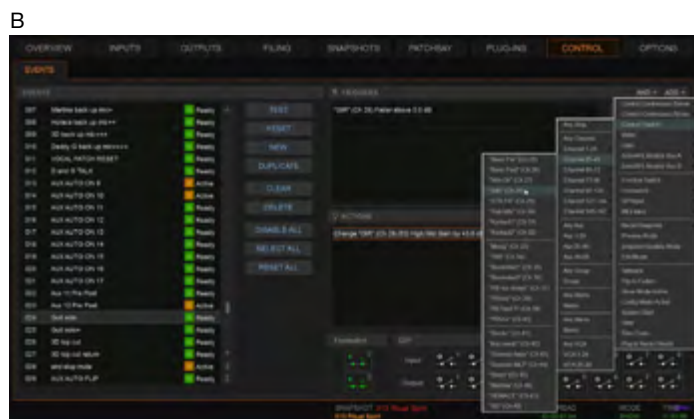
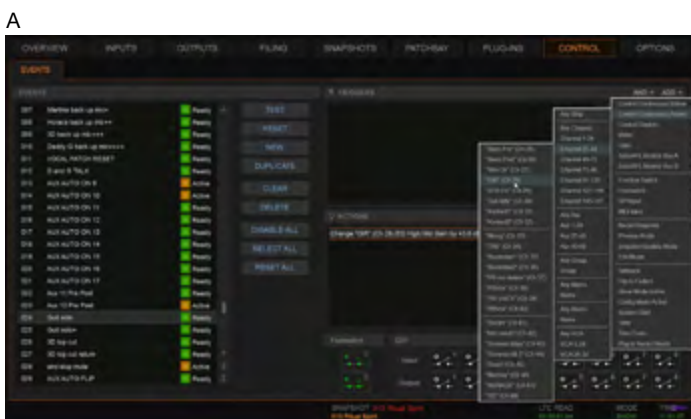
We will need two triggers for this change to happen, and both triggers will need to be active. Under the Events page, I've made an event called “guitar solo”. The first trigger is a “continuous control above” on a specific channel, which means when the fader is above 0db it will trigger an action. I then add a second trigger being the “Colour switch pressed” for that specific channel. So, for the action to occur, both of those triggers have to happen.

- A. Under Actions, I will add a “continuous control” action for a specific channel.
- B. This control change will be on the high mid EQ on the guitar channel and I want to boost the high mid EQ by 3.6db.
- C. I will also add a crossfade of 1.7 sec.
- D. For the second trigger we will first duplicate the first event called “guitar solo” which makes this process quicker.
- E. We now have a second event called “guitar solo+”. In the triggers we will change the continuous control from fader above 0db to fader below -0.7db and the actions change the High Mid EQ gain to be 0db.
- F. Now, when I want to add a small boost to the guitar during a guitar solo, I can hold the Colour switch while bringing up the fader and once the guitar solo is finished, bring the fader down while holding the colour switch to flatten that EQ change.

It's that easy.

Watch the video at: <https://www.youtube.com/watch?v=a2eyqzce5u4>





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The MixWizard - Automatic Mic Mixers

by The MixWizard (a.k.a. Andrew Crawford)

Automatic Microphone Mixers (AMM) are a great tool and most digital mixers feature them, including the Allen and Heath range: QU, SQ, Avantis and dLive. In this article, I'm going to be looking at the dLive AMM.

A lot of people associate AMM as something you use when you do corporate AV, when there's a large number of panellists. That's true, but it isn't always the case and I'm going to show you what I've learnt when using an AMM for theatre shows.

I've used AMM on many theatre shows and, to be honest, these days I would struggle to do a theatre show without it. To me, it is a total game-changer! I use the AMM for all of the dialogue scenes and single line singing, but typically don't use it during big chorus singing numbers. The way the algorithm works is in the gain sharing, so when several artists are singing the AMM tries to clamp down on all of it. But for dialogue, it automatically jumps in and opens the microphones faster than a mix engineer can manually ride the faders.

A lot of people will be familiar with the terminology 'Line Mixing' when talking about mixing theatre shows. This is when you push the fader one line at a time and open it. We use line mixing to improve our gain before feedback, speech intelligibility, and to stop multiple microphone sources picking up the same sound source. AMM will do all of this for you, but even faster. You can leave the microphones that are on stage open in a scene and AMM will automatically open and close them as the cast deliver their lines. This then gives a very clean, tight, focused vocal sound.

Setting up an AMM

Let me show you how to set up an AMM using my Allen & Heath dLive with a mix from a theatre show.

Firstly, I always programme some bypass buttons for the AMM. I have chosen soft keys 11 and 12, I have programmed these to bypass the AMM automixer. Sometimes in a theatre show I just want to listen in a rehearsal and hear exactly what the AMM is doing. This helps me decide if I want it in or out and how it is affecting the large ensemble numbers. I can then program the AMM bypass into my Scenes

within the show so it will be active or Bypassed as required in each scene.

In a dLive, the AMM is inside the mix rack, so if I go into the mix rack it's under the audio tab and the AMM tab. In dLive you can have one 64-channel AMM, two 32-channel AMMs or four 16-channel AMMs. When doing theatre shows I run two auto mixers, one for my lead characters and one for the ensemble. It's very simple to set up. It's really just a matter of getting the inputs you want and dragging them into each AMM. Once this is done, I can see I've got the lead characters in one and the ensemble in the other.



There are two modes of AMM in the dLive Console, I have found the D-Classic Mode works best for me in how I approach theatre shows. To make the most of the AMM you need a good healthy gain structure; this will allow the AMM to do its best work with the inputs.

The AMM is Post fader and Post Mute, so pulling the fader down will stop that Microphone from triggering the AMM or muting the channel and will also remove it from driving the AMM. This is great, as you can leave

microphones in the AMM group and only the faders that are up (with cast onstage) will be triggering the AMM.



Once the AMM is all set up you can then programme your scenes and choose when the AMM is active or bypassed.

To hear the difference, bypass the AMM when the stage is full of cast and microphones (using the buttons you programmed). You'll hear it goes from very tight when the auto mixer is on, to being really open and messy sounding. There is all of this extra spill and ambience in the room. When I'm on a PA system trying to cover an audience there could be five hundred or a thousand people in the theatre. All of that extra ambience coming through the speakers obviously effects the gain before feedback, the speech intelligibility, and the cleanness of the mix. This is why an AMM is your best friend and a great way to keep your mix clean and tidy.



As mentioned, the chorus singing isn't ideal for using AMM, however I've had a lot of success when it's two people singing a duet.

AMM is a great tool. If you've never used it, get into it and start to play with it. As I've already said, it's a game-changer. I've had many audience members say, "wow you're so on top of the cues, you're so fast, you don't miss a line". I put on a kind of bashful look and politely inform them that, well, I am The MixWizard! But it's the AMM – it's so much faster than a manual mix.

See video here for the full tutorial: <https://www.youtube.com/watch?v=Scj2jnGTstM>



As if by magic, The MixWizard appears when talk turns to mixing techniques. For a spell he's been traversing the land in his Ampervan, appearing randomly and conjuring up solutions to everybody's questions. He has a large following in Asia and a smaller but devout fan-base in Norway.



Panning the guitars:

I'm going to mute the vocals for a second, and focus on just the guitars. I'm going to jump to another section because there's also an acoustic guitar so let's see what we get. Currently I've got an acoustic and two guitar parts all in mono. I then pan in this order:

- Electric guitar 1 panned to the right
- Electric guitar 2 panned to the left
- Acoustic guitar in the middle

Now I can hear two electric guitar parts and acoustic up the middle. Again, I've done nothing more than pan the guitar and the vocals and suddenly it sounds much wider and a lot more interesting. By panning, I'm creating space. I can pick out each person's voice and instrument when I listen to the mix.

FAQ: Does panning affect the sound depending on where you're sitting in the audience?

I'm not afraid of panning. Some people have asked, "what if I'm sitting on the side of the auditorium?" Most modern PAs have very good coverage, but you do need to be sensible about this. For example, if I go to a full acoustic concert at the Opera House and I sit down on the front row and I'm sitting on the right-hand side in front of the cellos, I'm going to hear more cellos in "the mix". Maybe I'm in the cheap seats behind the orchestra in the choir rostrum; I'm going to hear more percussion. But I'm still getting a great experience from the live music. In short, everyone is going to have a slightly different experience depending where you are in the room. Panning just provides that depth and experience in your mix.

Have a practice and remember, panning is your friend.

See video here for the full tutorial: <https://www.youtube.com/watch?v=29Mkj05LB18>

PANNING

by The MixWizard (a.k.a. Andrew Crawford)

Panning is one of the most useful tools we have inside our mixing console. When everything is in mono, it's all fighting for the same space. But by panning things out in your mix you suddenly have space for all your elements, and you don't even have to turn the level up. In fact, you might find you actually turn it down once you have panned it and given it some space.

Let me demonstrate and explain how panning can enhance the audio experience. We're going to look at some vocals and guitars and how, without changing any levels, we can suddenly hear those elements better in our mix.

As I start work on a mix, everything is just in mono. I can hear the lead vocal, I can hear backing vocals, and I can hear guitars, but it's just all very mono and I can't define those voices. I start by panning the BV and have another listen.

Panning the vocals:

Just to get better clarity, I first mute the guitars for a minute. I'm listening to the lead vocal, and I pan the BV in this order:

- BV 1 in the middle
- BV 2 panned to the left
- BV 3 panned to the right



Now that I've panned those, I'm going to play back that same section and have a listen. I haven't changed any volumes, or added effects, but I can now clearly hear all vocals and can define them.



With Avid Profile (Production Dungeon).

MIXING THE OLD WITH THE NEW

Analog Echo versus Digital Delay

by Mark Barry

Recently, in a fit of nostalgia, I revamped my vintage Roland Space Echo. A new tape loop, a few other parts from Aussie company Echo Fix (www.echofix.com) and it was as good as 1980. After playing around with it and hearing how well it created a warm echo, I thought it might be cool to put it through its paces as an outboard effect at a live gig. Part of this appeal is the sound of the lo-fi tape saturation, somewhat akin to valve distortion.

Some of you might not be aware of what a tape echo is. It achieves an echo effect with record and playback heads on a magnetic

tape loop. Tape speed and/or choosing different head positions vary the delay time. Repeats could be increased by feeding back

signal from the play head to the record head.

Back in the 80s, when I started doing live sound, the Roland Space Echo or Chorus Echo was what you had to have in the effects rack. Produced by Roland from 1974 until 1990, they didn't start to lose traction until Yamaha released the digital SPX90 in 1985, and even then it was a very slow decline as most of us were reluctant to get on the steep learning curve of digital effects.

I also thought it an ironic contrast to have such a vintage analog beast plugged into a highly sophisticated digital console. As luck would have it, I had some gigs booked with Painters and Dockers (1980s) and Bongo Starkie's Million Dollar Riff (Skyhooks 1970s). It doesn't get much more appropriate than these two bands.

But this is not just plug-n-play, there are a few challenges, number one being line level. The inputs on a space echo expect an instrument

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or microphone level, certainly not +4 dB. Even the dedicated "FROM P.A." socket is rated at only -24dBm! Similarly, the output is pretty low. The level select switch ranges from -35 to -15 dB, so the return needs a mic channel, not an aux/line input. Be aware some digital consoles may not be set up with a local mic input! Also, there is some impedance mismatch too as well as unbalanced connections. However, these are small hurdles as there is usually enough room to move with various volume controls.

Getting back to the low output needing a microphone input. For me this is a very suitable circumstance as this is how I learned to mix effects in the early days. Back then channel 16 was always the echo return. Most of us would insist on echo being on a fader as it was much easier to ride up and down. Furthermore, in a dark environment, you could easily see if it was up or down. These days I always assign a group master fader as well as a mute group to my echo return.

So, next question, why bother mixing with something so old? Well, there is the aesthetic and satisfaction of something old and classic still achieving a very good result. There is also a big difference between mixing vocals with Delay or with Echo.

As an effect, in particular on vocals, delay is great. It layers and thickens the voice and can create momentary harmonies as a singer moves through a melody. BUT a clean digital delay is not a natural sounding echo. To make a delay effect work well I find I need to do quite a bit of manipulation to turn that delay into an echo. When I mix most bands, one priority is that the vocals should be clear. Not all bands though. Once I had a singer tell me "I want my vocal drowning in a sea of guitar". What a brilliant and succinct instruction! To maintain vocal clarity my opinion is that the vocal effect should be a shadow of the original, not a clear carbon copy. One technique is to EQ out the tops and lows [see

screen shot of my eq curve], another is to add a bit of reverb to the delay return making it more ambient, and therefore more echo-like. I have also used heavy compression to tone things down. Here's another hack; a gate can make the echo all but disappear except when the singer really goes for it.

Some of the above tricks are all bundled up in the vintage Space Echo, an all-in-one low-fi enhancement for live vocals in a retro style.

Mark Barry owns and operates B S Sound PA Hire in Melbourne and is happy to go anywhere to work for anyone, he can be contacted at mark@bssound.com.au



Painters and Dockers, Espy, St Kilda



With Digico SD9



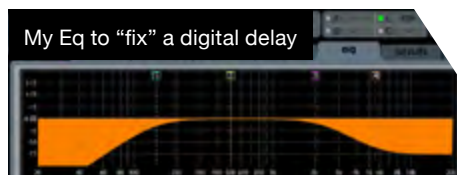
With Beringer X32 Rack (interestingly, both units have the same value of \$1500)



With Midas M32, Painters & Dockers at Memo, St Kilda (Old School and Nude School!)



Lid open showing the tape loop



My Eq to "fix" a digital delay



Bongo Starkie's Million Dollar Riff, Moama Ski Club



The Australian company of Harry Potter and the Cursed Child.
Photo Matthew Murphy. Photographer: Matthew Murphy

Harry Potter and The Cursed Child: Casting audio magic to every seat in the house

Award-winning sound designer Gareth Fry relies on d&b audiotechnik to bring the magic of Harry Potter to life for audiences and theatres around the world.

When show producers welcome throngs of enthusiastic Harry Potter fans to the live stage production of Harry Potter and The Cursed Child, they want to immerse the audience in a show experience like no other. Based on an original story by J.K. Rowling, Jack Thorne, and John Tiffany, Harry Potter and the Cursed Child is the eighth story in the Harry Potter series and the first official Harry Potter story to be presented on stage. Following such a magical history of wildly successful novels and films, audience expectations are exceptionally high. With demanding production requirements, show producers turned to multi-award-winning sound designer Gareth Fry, and his experience with technologies from d&b audiotechnik, to cast a spell over the audience.

"There's a big responsibility when you're working with such iconic characters and

stories; the audience has a strong, emotional attachment to what's happening on stage," said Gareth Fry. "With such an invested audience, we're under pressure to produce the best show we can. There are big, epic scenes with lots of characters, and then there are also very quiet scenes where it's just two people talking — we need to make sure every seat in the house hears everything perfectly."

Fry explained that the director, John Tiffany, demanded that the sound quality be exceptional and that every production in each location have the same level of quality as the London production, or better. This means Fry and the team needed a sound system that could not only deliver the required quality and control to cover every seat in the house, but also flexible enough to work within a wide variety of theaters around the world — each

with very different architectural and acoustic challenges.

"There are a lot of illusions in the show, and magic often requires support from sound and lighting and costume and props — it's a very multidisciplinary thing to make these illusions seem magical," said Fry. "All of the magic is done live in front of the audience, and good sound is absolutely key to making sure the illusion works for every audience in every venue."

The ArrayCalc software from d&b was a key component Fry used in his sound system design for the shows. ArrayCalc is a simulation tool for d&b sound systems that allows designers to model the acoustic design, performance prediction, alignment, rigging, and safety parameters for specific venues. ArrayCalc simulation software significantly reduces setup and tuning time in mobile applications and allows for precise initial simulations when planning installations.

With ArrayCalc, listening planes can be defined to create a three-dimensional representation of any audience area in a given venue. The sound level distribution resulting



Gareth Fry



L-R: Nyx Calder as Scorpius Malfoy and Sean Rees-Wemyss as Albus Potter. Photographer: Evan Zimmerman for MurphyMade



L-R: Lucy Goleby as Ginny Potter and Gareth Reeves as Harry Potter. Photographer: Matthew Murphy



L-R: Paula Arundell as Hermione Granger, Michael Whalley as Ron Weasley, Lucy Goleby as Ginny Potter, Gareth Reeves as Harry Potter and Tom Wren as Draco Malfoy. Photographer: Evan Zimmerman for MurphyMade

from the interaction of all active sources can be mapped onto the previously defined audience areas in a three-dimensional view, which can also be zoomed, rotated, and exported as a graphics file.

"ArrayCalc was a critical part of our choosing d&b systems; it allowed us to predict in advance what a theater will sound like," said Fry. "The software has also been very useful in terms of working with other production departments and negotiating speaker positions and other logistic concerns."

A d&b Y-Series sound system was primarily used in the London, New York, Melbourne and San Francisco productions, using a mix of line-array and point source elements, supplemented with E-Series cabinets for fill speakers. d&b V-Series was also used in some venues where a longer throw was required. The all-encompassing Y-Series combines broadband directivity control with extended low-frequency performance in a compact, unobtrusive design. Featuring rotatable horns, the lightweight Y7P and Y10P

point source loudspeakers offer horizontal dispersion angles of 75° and 110° respectively and ensure horizontal directivity control down to 500 Hz; beneficial especially in reverberant or acoustically challenging environments.

The 3-way passive V-Series comprises both line array and point source systems for medium- to large-scale sound reinforcement applications, with complete efficiency and broadband directivity control to low frequencies. The 3-way passive V8 and V12 line array loudspeakers provide 80° and 120° horizontal dispersion, respectively, maintained down to 250 Hz. The V-Series point source loudspeaker is a single box solution, ideal for any application where sightlines, weight, or amplifier channel requirements dictate that a small line array isn't appropriate.

"I've been using d&b for years, so I have a lot of confidence in their systems," said Fry. "They always sound great, and have a compact footprint which makes them easy to place, so the whole system sounds better because the speakers can be in better positions to deliver

the quality and power we need."

The critically-acclaimed production has become the most awarded London, West End play in the history of the Olivier Awards, winning a record-breaking nine awards including Best New Play, Best Director and Best Sound Design in 2017. It also received multiple Tony Awards, including Best Sound Design, for the Broadway production in New York. There are other productions ongoing in Melbourne, San Francisco and Hamburg; and future productions have been announced in Toronto, and Tokyo.

"The show has been incredibly well received by audience members and critics alike, so we couldn't be happier," said Fry. "d&b stands behind their products, and they have been great to work with. We were able to do some demos of the Y- and V-series, and they were great in helping us select exactly the right product for the job. Their support has been amazing, and I look forward to more productions with d&b."

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PANLAB 2 BRINGS SPATIAL AUDIO MIXING TO QLAB

“Sound Designer Avgoustos Psillas has been so impressed with his experience with panLab 2 that he has already specified the software for his upcoming productions.”

Innovate Audio have announced panLab 2, a game-changing spatial sound design and mixing tool, designed to integrate seamlessly with QLab. Available from early May as a macOS app, panLab 2 adds powerful, intuitive and user-friendly spatial audio capabilities to the QLab workflow.

panLab 2 has been developed in London, England by Innovate Audio and their directors Daniel Higgott and Oscar Higgott. Oscar Higgott is a physicist, specialising in quantum computing. Daniel Higgott is a software developer and live sound engineer. They have combined their skills to create a product that completely reimagines how sound designers can create content in the live audio environment.

The software has been in beta since early 2021 and has already been used on Sound of Music at the National Theatre of Stockholm. Sound Designer Avgoustos Psillas has been so impressed with his experience with

panLab 2 that he has already specified the software for his upcoming productions. These include Circus Days and Nights, a new opera by Philip Glass, and MATILDA the musical at the Royal Theatre of Copenhagen.

Using panLab 2, users can intuitively mix QLab audio and mic cues by positioning them on a virtual map of their sound system. Using a bespoke algorithm designed exclusively for the software, panLab 2 takes care of much of the setup process required when configuring a spatial audio environment. As a result of this technological development, users should be up and running with panLab 2 in under five minutes.

Seamless Integration with QLab

Designed from the ground up to integrate seamlessly with QLab, panLab 2 can discover and communicate with any available QLab workspace on the local network.

All level-based data is stored within the QLab workspace, meaning it is not necessary to run panLab 2 during performances, only whilst programming. For this reason, panLab 2 is the only spatial audio mixing solution that requires no additional hardware or software during performances.

A Powerful, Efficient Sound Design Tool

Sequences of movements that would have taken hours to program using QLab alone can be created in seconds using panLab 2. Users are able to draw trajectories straight onto the panner, with panLab 2 translating that data into fade cues created in the QLab workspace. Every detail has been thought through, including the ability to modify the speed of sequences both proportionally, and by adjusting to a constant speed of movement. Sequences can also be recorded live, with all timing offsets stored back to QLab for precise reproduction.

Users can free themselves from their production desk by using the OSC protocol to remotely control panLab 2. The panLab 2 OSC dictionary allows the user to control most commonly used parameters using third party software, such as the popular TouchOSC app for iPad.

Testimonials

“I have been incredibly impressed with panLab. It allows me to create complex surround sound panning sequences, such as the motorbike roaring round the auditorium in 'Bat Out Of Hell', without any additional third party hardware.”

- Gareth Owen - Eight-time Tony and Olivier winning and nominated sound designer

“Having used Soundscape, I feel that panLab 2 can run alongside it for dynamic panning of all QLab sources whilst Soundscape takes care of the live sources. panLab 2 is an excellent tool and it will accompany me on all my sound designs from now on.”

- Avgoustos Psillas - Lead Sound Designer, Audio Craft Scandinavia

“For years, I've been manipulating sounds around outputs the old-fashioned way, using multiple time and level cues. panLab has given me automated control in a user-friendly program. Totally brilliant and a game changer.”

- Tom Marshall - Freelance Sound Designer, Amelie, Sunset Blvd, The Colour Purple, The Boy In The Dress

To download a free trial of panLab 2, go to: <https://innovateaudio.co.uk/panlab/>

How To: use panLab to build spatial audio maps, in which you can place your QLab cues.

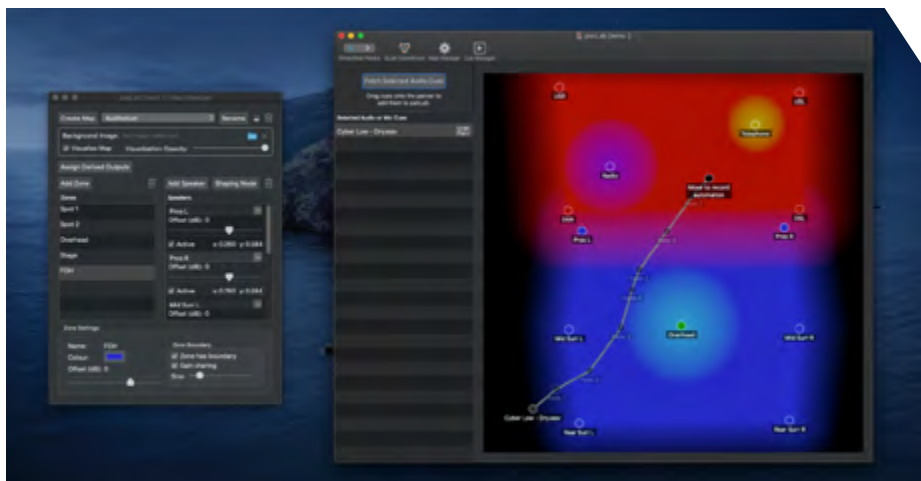
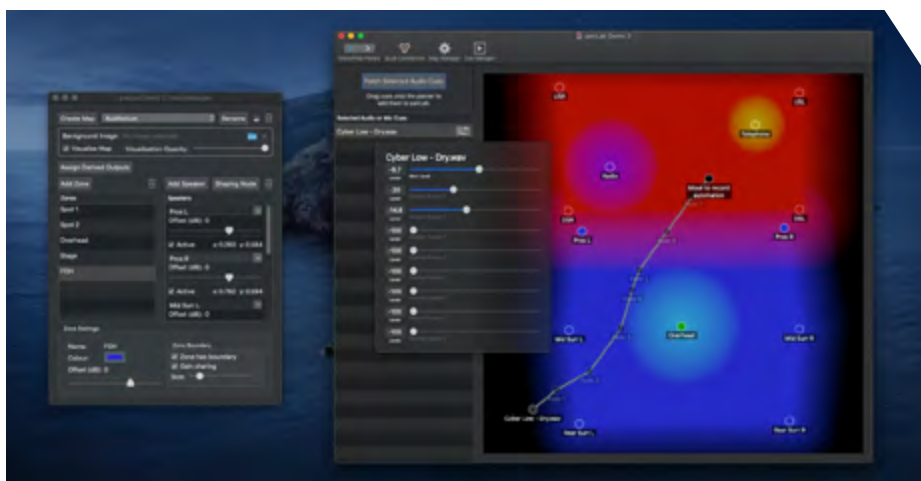
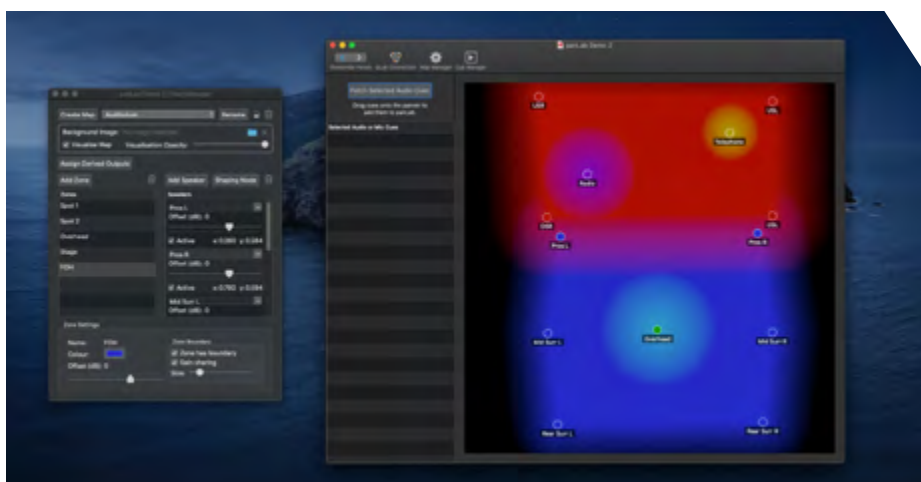
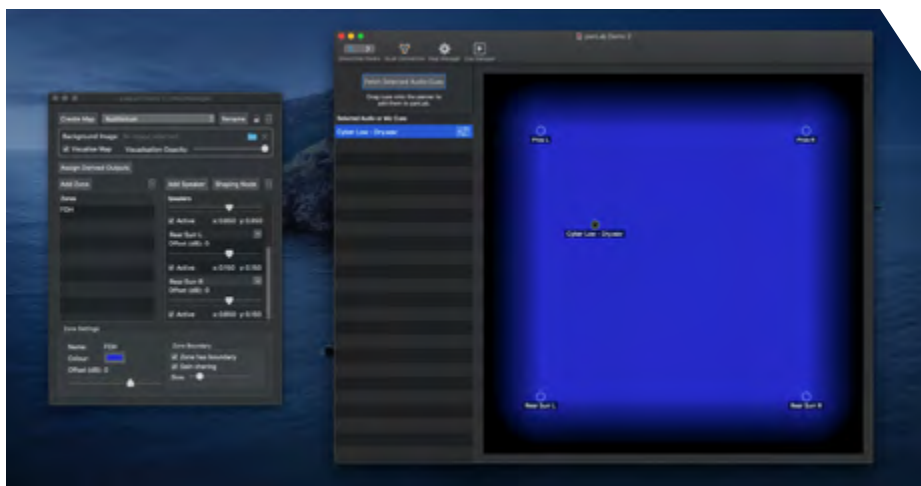
A map could be as simple as a quad panner, or as complex as an entire theatrical sound system.

panLab has been designed to be incredibly quick to setup and simple to use. Maps are configured using simple drag and drop tools, with speakers representing QLab cue outputs.

Cues can be dropped onto the map, and their output levels are updated accordingly.

Sequences of movements, which would have otherwise taken hours to produce, can be created in seconds using panLab. Simply draw automation onto the panLab panner and panLab will print the result to QLab.

The beauty of this workflow, is that it is not necessary to run panLab during performances, only whilst you are programming your audio. With panLab, you can utilise the power of spatial audio mixing, without adding any additional hardware or software to your sound system, and without any additional changes to the rest of your workflow.





DREAM ON

Shakespeare becomes virtual

“Dream” is an ingenious and engaging multi-layered mix of movement, music, visuals, cool technology and narrative magic, an immersive digital performance fusing the drama of Shakespeare with the dynamic worlds of gaming and theatre in a ground-breaking production by the UK’s Royal Shakespeare Company in collaboration with Manchester International Festival, Marshmallow Laser Feast, and the Philharmonia Orchestra.

Staged physically in the Studio at Portsmouth Guildhall and inspired by the classic A Midsummer Night’s Dream, the characters were played by six real actors utilising Vicon motion capture cameras, their avatars and effects appearing onscreen – centring around the antics of cocky and capricious mischief-maker Puck. They run amok in the virtual Midsummer forest, hellraising and spoofing four other sprites during a disruptive and chaotic journey!

Matt Peel was responsible for lighting design and show control. He utilised the power and specifically the OSC (open sound control) and DMX remote triggering capabilities of his grandMA3 system with the new grandMA3 software.

The highly acclaimed show was broadcast live for 10 evenings and enjoyed by thousands worldwide, who logged in, either paying for an interactive ticket – with the chance to shoot

fireflies into the story to help illuminate Puck’s pathway through the forest – or simply watch the performance for free.

Dream was originally intended to be an in-person performance during 2020, but due to the pandemic, was adapted and re-worked as a live performance concept to be fully enjoyed remotely from wherever the audience happen to be!

As part of the R&D phase of the project, Matt explains that working closely with the RSC’s Daniel Orchard, an Unreal Engine developer, they integrated known event technologies to communicate with the virtual and real-world show control systems.

An MVR (My Virtual Rig) importer developed for Unreal enabled the Vectorworks pipeline for real-world lighting to be received by both Unreal as well as natively in grandMA3. OSC was integrated into Arduino powered proximity sensors to communicate the status of the physical world, and a PosiStageNet (PSN) 3D live positional data protocol plugin for Unreal enabled the grandMA3 and Unreal (which already has inbuilt DMX and OSC) to communicate bi-directionally.

By building custom grandMA3 fixture-types, certain aspects in the game world could

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be controlled via DMX, e.g., the height and brightness of an object like the sun, or the colour of an avatar, etc. Using grandMA3, all these elements could be rapidly tweaked in real-time on the console.

“Using the grandMA3 in this way meant we could work really fast in this context to make adjustments to these game effects, rather than using game engine keyframing which is a lot more time consuming jumping Unreal in and out of ‘editor’ mode,” says Matt.

A project like Dream was a perfect opportunity to experiment with this bi-directional control and state awareness, merging game-based event logic to create a new style of live performance. It allowed the grandMA3 to be the master show controller sending and receiving unicast OSC between 16 different role machines.

Unreal Engine instances were used to create the rich and complex visual environments in which the action took place, and OBS instances allowed vision mixing the final output between Unreal and four broadcast cameras.

Matt explained that a small rig of traditional theatre lighting in the form of eight moving lights in the real studio motion capture volume (capture space), assisted in directing the actors to respond to interactions from the remote audience.

In addition to orchestral music by composer Jesper Nordin and Philharmonia Orchestra principal conductor and artistic advisor Esa Pekka-Salonen, at strategic points the actors’ movement was fed into Gestrument software

(a Jesper Nordin project) allowing them to ‘play’ digital instruments and interact together via their motion. Another clever twist which created a stream of beautifully ethereal sonic moments.

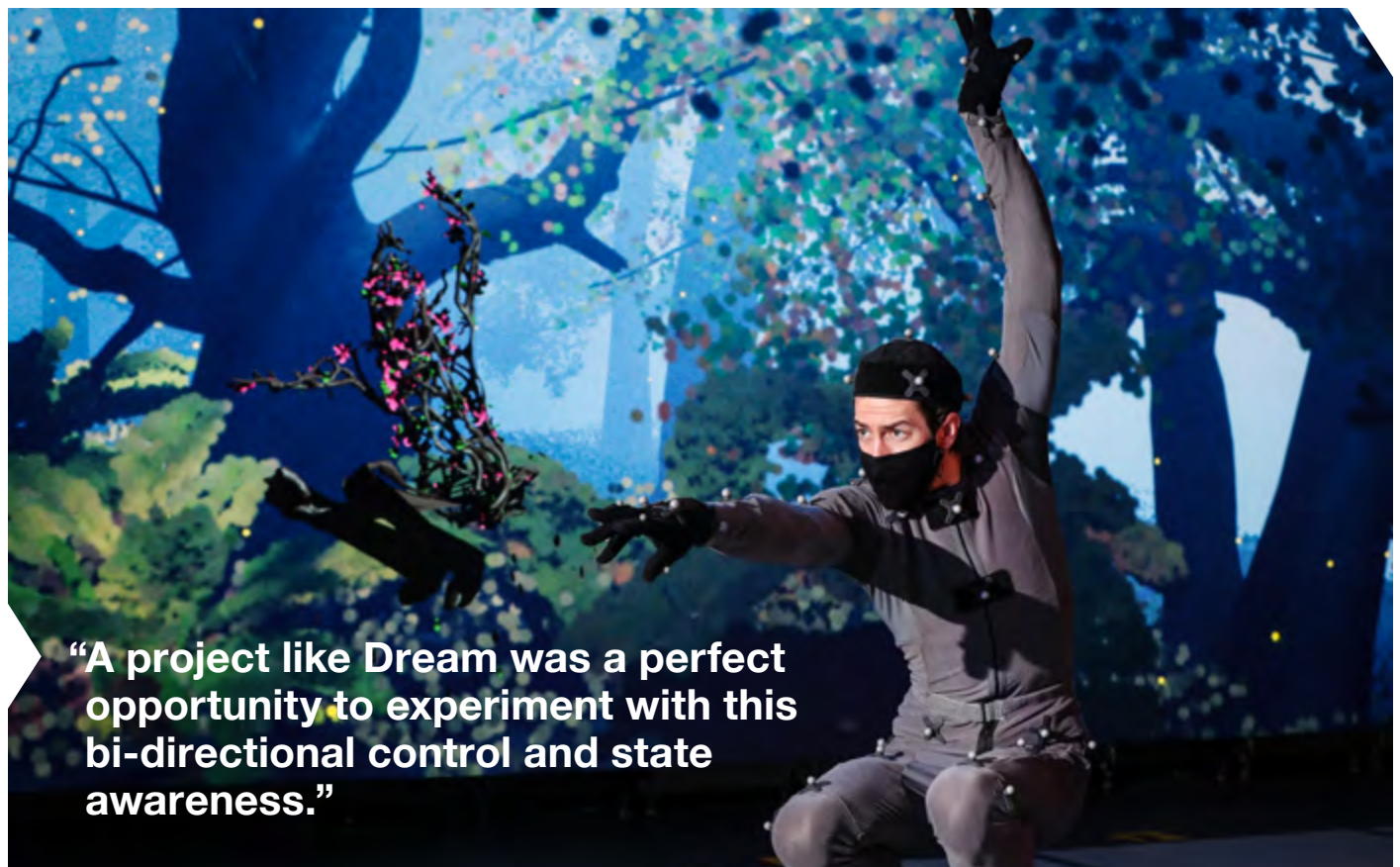
The overall show was cued and run in traditional theatre style by a DSM, a synergetic mix of innovative technologies and well-respected techniques that pushed several boundaries.

Matt has been using grandMA3 for some time in his work. In addition to the possibilities of bidirectional communication, vital for a cutting-edge performance like this, he also

likes having a large number of playbacks on one page offering all the major elements “at your fingertips”.

Like everyone, Matt was delighted to be back working on another show after the disruption of the pandemic, and especially being alongside “so many talented people with huge expertise in numerous highly specialised areas” to make Dream such a success.

Dream was directed by Robin McNicholas of Marshmallow Laser Feast, Sarah Perry was the movement director, and the project lead and executive producer was Sarah Ellis, director of digital development at the RSC.



“A project like Dream was a perfect opportunity to experiment with this bi-directional control and state awareness.”

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WORKPLACE

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Education	8%
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*typically Audio/Lighting/Staging



EMPLOYMENT TYPE

Permanent	67%
Freelance	11%
Other*	9%
Perm/Casual	7%
Casual	7%

*typically self employed



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Over \$500K	15%

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RoboSpots in New League for LOL Worlds 2020 Final

by Louise Stickland. Photo credit: Riot Games

League of Legends' World Championship 2020 Finals were staged at the new Pudong Football Stadium in Shanghai, China, a high-profile, high-energy event notable for many things, which, in addition to being an eSports calendar highlight, included a spectacular production lighting design by Mat Stovall of LampedUp and his team, who helped produce dazzling opening and closing ceremonies plus seat-edge atmospheric engineering, boosting the buzz, thrills and spills of the gaming action.

Thirty-seven Robe RoboSpot systems were part of a large lighting rig for the event, specified by Mat and associate LD Trevor Stirlin Burk of Visual Noise Creative, and supplied by Christie Lites out of their UK and US bases to the event's main technical contractor, Creative Technology (CT) Shanghai.

Robert Roth coordinated for Christie Lites, working closely with the CT Shanghai team headed by Aaron Ross Durdin, Sam Tibble and Daniel Sun.

Mat wanted RoboSpots on the event for several reasons. He needed "a quality white light source" to key talent for the opening and

closing shows and during the gaming action, with capacity to cover specific choreographed aspects, plus coach and team 'moments' throughout the tournament.

With a massive performance area to cover in the centre of the stadium, Mat was not sure that it would be possible to physically get operators into all the required locations, so RoboSpot was his go-to solution.

The 37 Robe BMFL moving light units were positioned everywhere; on the downstage trusses, above and below the two giant LED screens onstage that flanked a huge central scenic Paifang arch, and on top of this elegant 33-metre-high centrepiece of Joe Kale's

impressive scenic design which was based on the overall show creatively developed by Riot Games' producers with Possible (Michael Figge).

The breakdown of the RoboSpot systems was 16 Robe BMFL FollowSpot and 21 BMFL FollowSpot LT (long throw) luminaires, all with integral cameras, together with 37 active base stations, each linked to the individual lights.

They were operated by 14 people, sometimes jumping between different systems depending on which section of the show was playing out at the time. Most operators had not used a RoboSpot before, but they all picked it up quickly and efficiently.

The most experienced operators stayed on all the 'hero' action downstage, while others were covering the back lights and some of the more creative angles.

The massive task of coordinating this with a mostly non-English speaking crew was relished by Zach Matusow from the international team, who is highly experienced in the field. He also called all the spot cues working closely with CT Shanghai's crew who helped with the translating and ran some of the RoboSpot units.

The operators were corralled in a conference room underneath one of the main grandstands, with no windows or line-of-sight to the stage. They did however have multiple monitors showing broadcast camera feeds giving them eyes on the action independently to what was showing on their own separate RoboSpot BaseStation screens.

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By far the most challenging element of installing a RoboSpot system of this magnitude was engineering the control, a task tackled by network architect Tom Buddingh, also part of Mat's core international crew who were coordinated by production LX Jason Mack.

He utilised a design he had previously successfully used on smaller RoboSpot systems which involved managed Gigabit switches, fiber optic cables, and Luminex DMX nodes.

Being out of the country during a pandemic and not in a position to build a mock-up system in advance to verify that the plan would work was galvanizing, even though he was confident that with the calibre of the team working on this, everything would be sortable!

The RoboSpot control network consisted of 17 Gigabit fiber optic switches and 15 Luminex DMX8 Mk2 nodes, which were essential to act as bridges and transport the RDM communication needed to link the RoboSpot controller and the moving head with the attached camera.

Tom configured the follow spot network to have 40 VLANs essentially running 40 different networks over a single piece of fiber or copper wire which allowed each camera to have its own "network" link back to the controller, with the operator only able to see a single camera on each controller.

This eradicated the chance of a RoboSpot controller viewing a camera that it was not controlling!

In the control room with all the RoboSpot BaseStations were six managed switches, four 24 port non-managed Gigabit switches, and six Luminex Nodes which enabled each controller to have a discrete feed from the appropriate camera, RDM communication to the appropriate head, and receive signal from the lighting console, for tweaking colour, intensity, and other parameters.

Tom also designed the main MA-net / sACN "show lighting" network to control the approximately 3500 fixtures on the main production lighting rig, kept as a completely separate network to reduce traffic on the "RoboSpot" network.

To easily accomplish this, he took a hard DMX feed from a node attached to the "Lighting Network" into a node connected to the "Spot" network, reducing the hundreds of sACN universes to just five.

With the RoboSpot heads so spread out across the rig and the 100 metre limitation of copper Ethernet cables, Tom needed a way to distribute the control throughout the venue.

"I implemented a hybrid trunk / spider network topology with a couple of main hubs splitting off to distribution points on trusses which accommodated between two and eight RoboSpot follow spot heads. These four "hubs" and eight "Spider" distribution points were all connected with Neutrik OpticalCon Quad Fiber cable."

After the initial calibration, with a little tweaking of the managed switch settings and a small change to the cable connections, he had all the images stable on all RoboSpot controllers throughout the show period!

The network elements were also supplied by Christie Lites.

Riot Games' technical production company ConCom has been Mat Stoval's client for nearly 10 years, and he was production lighting designer for their XR playoffs show as well as the finals. Given the scope of this project and the demands on his time, he asked Trevor to collaborate and help keep an eye on the Finals from the US while Mat was on site in Shanghai.

Mat and Trevor have worked together on multiple lighting and design projects over the years, embracing concert tours, theme park installations, art creations, corporates, and special events.

Trevor worked from his home office in LA, with lighting director / programmers Tiffany Keys and Mike Appel working remotely from LA and Florida, respectively. Early Bird Visuals helped Mat and his lighting design team with renders and pre-vis and hosted a Discord session to composite Tiffany and Mike's show files on top of each other so they could see a single image in pre-vis from anywhere in the world.

The gaffers on site were Geoff Knight and Scotty Beck, and Shaheem Lichtmore was in Shanghai programming lighting for the backstage activations, gamer key lighting, and key light for the local host desk. He also programmed the playoffs show.

Joining Jason Mack on Mat's "amazing" core crew were Adam Eldridge, Ron Konsur and Brian Davies who with their hard work and superlative skillsets coordinated the entire installation on-site liaising between the LOL production and CT Shanghai.

Randy Quick was the coordinating Technical Director for ConCom and Marc Hilko the head of global eSports production for Riot Games.

The show directors were Sam Wrench for the Opening / Closing Ceremonies and Riah Chiu for the tournament.

The tournament winners were South Korea's DAMWON Gaming who defeated China's Suning 3 - 1 to claim the 2020 League of Legends World Championship!



STRANGER THAN KINDNESS

Meyer Sound Systems Weave Immersive Soundscapes at Nick Cave Exhibition in Copenhagen

Music is central to the life and work of rock icon Nick Cave, and to ensure his sounds were reproduced with appropriate power and subtlety for a new exhibition tracing his creative journey, the exhibit's creators worked with Danish AV integration firm Stouenborg to design potent and precisely controlled systems of Meyer Sound self-powered loudspeakers.

Entitled "Stranger than Kindness," the pandemic-delayed exhibition debuted last June at the Black Diamond, a museum extension of the Royal Danish Library in Copenhagen.

The importance of sound was emphasised by the direct involvement of Cave along with longtime bandmate and collaborator Warren Ellis, who together conceived and recorded the soundscapes for the exhibition. Leading

the exhibition team on behalf of the Black Diamond museum was designer Christina Back.

"We wanted an immersive experience," says Back. "We wanted people to be free in the space, without headphones, and have all their senses, even the small hairs on the back of the neck, tuned in to what is around them."

The exhibit occupies eight rooms in the basement of the Black Diamond, seven of them with sound installations. "We have a primary speaker system in every room playing the main musical atmosphere," says Janus Jensen, the sound engineer for the exhibition, "and then we have placed small speakers to spread out the atmosphere, or to connect with pictures or objects in that room."

Loudspeaker selection was critical, as the concept demanded power and clarity

Are you concerned about your mate's mental health?

FACT: Most Australian tech crew and roadies have attempted or considered suicide¹!

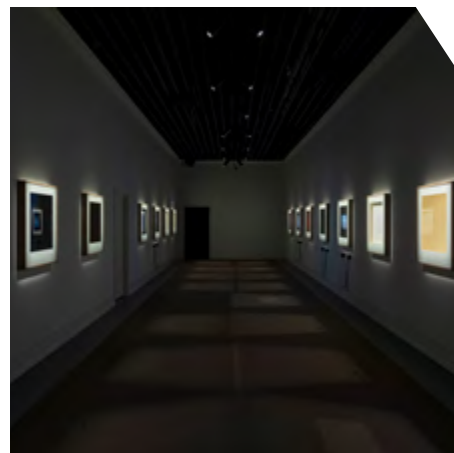
Support those around you and register for free mental health training



¹Passion, Pride, Pitfalls Dec 2014

www.entertainmentassist.org.au

Supporting the mental health of Australian entertainment industry workers



The exhibit as a whole uses 32 discrete channels of audio playing from a MacBook Pro, controlled by QLab 4 software

combined with control that would keep sound from any of multiple immersive experiences from bleeding into adjacent spaces.

“Very early in the process I specified Meyer Sound loudspeakers,” says Kaspar Stouenborg, project manager for the AV installations and CEO of the company bearing his name. “I knew that sound was going to be a very important part of the exhibition, so I wanted to be sure Nick Cave and Warren Ellis had the full freedom to make it sound exactly as they wanted it. I knew I could accomplish that with Meyer Sound loudspeakers.”

A total of 29 full-range Meyer Sound self-powered loudspeakers are positioned for maximum effect through the seven rooms, with two compact MM-10 subwoofers adding bass impact where needed. Five different full-range models are employed, scaled to achieve a range of effects from maximum impact (ULTRA-X40), a balance of power and placement flexibility (UPM-1XP, UP-4XP and UP-4slim), and discrete placement as a pinpoint imaged source for a specific instrument or effect (MM-4XP).

The exhibit as a whole uses 32 discrete channels of audio playing from a MacBook

Pro, controlled by QLab 4 software. Many audio programs play in extended loops, so that the exhibition’s sound design changes depending on the time of day.

“The sound system definitely turned out as I had hoped,” summarises Christina Back, “and from my experience working with sound, it is a powerful tool in an exhibition setting.”

Sponsored by Gucci, “Stranger than Kindness” opened in June 2020 and, following an interim closure due to COVID-19, is planned to reopen for an extended period beyond its originally scheduled closing of February 2021.

Sometimes it all gets too much...



The *Support Act Wellbeing Helpline* is a free, confidential counselling service that is available to anyone working in Australian music who needs to talk to someone about any aspect of their wellbeing.



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BOSE L1 PRO16 PORTABLE LINE ARRAY

by Jimmy Den-Ouden

Bose introduced the L1 line array some years ago now. I remember the original system had a large roundish base into which the column sections were placed, and a separate subwoofer. Subsequent revisions to the product saw the base become a foldable unit, which was better for transport. The L1 Pro16 takes this one step further.

The underlying idea of the L1 Pro product family seems to be to provide a healthy compromise between full range, controlled sound reinforcement and portability. This much certainly holds true of the L1 Pro16.

The L1 Pro16 comprises several parts: the upper array section, an extender module, and the subwoofer / amplifier unit. Three pieces.

The sub has a carry handle, and the array and extender piece both travel in a nice carry bag together. Add a power cable and a mic and you have a PA that you can carry into the venue in one trip. The system ships in one carton, which makes the box a bit of a weird shape but at least you know all the bits are contained in one place so it can't be partially shipped by a careless carrier!



Setup of the system really couldn't be much simpler: plonk the sub on the floor, then place the array section (plus or minus the extender part) into the keyed receptacle on top. Turn on the power, plug in your mic, and turn it up. Job done.

It literally takes less than a minute, which makes this super appealing for anyone needing to get into a space and set up quickly.

The array module comprises 16 two-inch neodymium drivers. They are alternately offset 45 degrees left and right, and the lower two drivers also aim downward to form the familiar line array curve we're used to seeing on much bigger systems at concerts. The idea of this is to maintain control over the audio dispersion. Practically, this only works down to a certain frequency due to the limits of physics, but within that range the pattern control seems quite decent. Nominal coverage of the array is 180 degrees

Bose L1 Pro16 – The Specs

J-shaped line array

16 articulated 2" neodymium drivers

Coverage: 180° H x 0° to -30° V

Low frequency (-3 dB): 42 Hz

Frequency Response (+/- 3dB): 42Hz–16kHz

Max SPL: 124dB

Wattage: Sub 1,000W, Array 250W, Total 1,250W

Dimensions

Width: 35.5 cm

Height: 201.2 cm

Depth: 45.6 cm

Weight: 24.35 kg



horizontally, and vertically coverage begins in line with the top of the stick and extends down a bit beneath it. This means you can stand the system on the floor or a stage, and with judicious use of the extender piece achieve a suitable coverage.

The sub comprises an 18" x 10" driver, which gives it a surprising amount of punch. While Bose probably selected this because it looks good, a convenient side effect is that it narrows the sub allowing you to bring its centre of gravity closer when you carry it. It's definitely easier to carry than any of the PA subwoofers I own.

The onboard electronics module includes two mic/instrument inputs on combo jacks, each with an encoder above it. Pressing the encoder alternates between adjusting volume, bass, treble, and reverb level for each channel. It's very easy. Another button activates common phantom power across both inputs. Each channel can also use a mic

or instrument "preset" which is activated or bypassed by pressing the button adjacent the input. An extensive selection of presets is available using the L1 Mix app on your phone.

Additional to these inputs, dual 3.5 and 6.5mm TRS sockets allow connection of an auxiliary device, and there's a Bluetooth facility too. A third encoder offers similar controls to the first two, sensibly minus the reverb option. Power is one IEC cable, and a ToneMatch port allows you to connect a Bose proprietary mixer externally for more inputs. There's also a line out on XLR which you could use to record, or feed another system.

In practice the L1 Pro16 system seems to do what it says. I switched it on and played some tracks via Bluetooth. They sounded like they should. I plugged in an SM58 and turned up the level, which achieved a good, balanced vocal sound. Standing right in front of the array I had to turn the mic up well past what I would expect before the system would feed

back. It's remarkably robust in that regard. I tried some of the preset EQs; these seem to add a lot of sparkle and I actually preferred the system in its default state. It will be a personal choice.

Bose tout the L1 Pro16 as suitable for DJs, singer-songwriters, and small groups. I've worked enough events to know that not every DJ will respect the limits of this system, so while I wouldn't unconditionally endorse it for that application, I do think it's a great choice for singer-songwriters and small groups. It's very easy to achieve a good vocal sound, the reverb is nice and natural, and the L1 Mix app makes it easy to adjust the mix from stage.

One more application I thought conspicuously absent from the website is corporate events. The gain before feedback, attention to elegant visual detail, and unimposing form factor will surely see the L1 Pro16 find great appeal.

pro.bose.com



ACME AURORA

by Nik Lyons

I first came across the Acme Aurora when I was scrolling through the Acme website looking for something else. It was before it was even released in Australia, but I immediately thought it could be a fixture that would really suit what we do at sixt5.

The Aurora is a COB LED wash light with a PC (pebble convex) lens. It produces a homogenised light output that sets it worlds apart from everything else on the market. Multiple LED chips are good for eye-candy looks, but you don't really need that in theatre. COB LEDs produce a much more even output with less edge blending, which make them really nice to work with. There's no hotspot, and ironically, no aurora around the edge. The Acme Aurora produces a really flat field of light. The PC lens gives you a similar output quality to that of a Fresnel, but instead of using rings, the inside of the lens is pebbled. It creates a pleasant softness that really works for theatre.

At sixt5, we find ourselves working in small studio spaces quite a lot. Looking at the

specs and dimensions of the Aurora, I thought they'd be perfect for applications where space, loading, height, and budgets are limited. When they arrived in Australia, I sourced two units for a client who runs an 80 seat studio-style space, and I was very impressed with the results.

We've gone on to purchase and install many units of Aurora, most recently into the Red Tree Theatre, which is a 145 seat studio theatre in Tuggerah, NSW. We replaced their previous washes with eight Auroras, and now we have a very happy customer who can't believe how much better their rig is while costing almost exactly the same amount as their previous fixtures. The price point of the Aurora is such that no other comparable fixture is really sitting in this part of the market.

Output, Colours, Zoom

The first thing that struck me about the Auroras was the power of their output. In a lot of the smaller spaces we work in, we're hanging around 4 metres above the stage area, and they've got so much punch that I'm usually running at only 50 or 60% so I don't wash everything else out. If you were touring regional theatres and hanging with a trim height of 6 metres, you'd still have more than enough output.

The colour mixing system is beautiful and does what RGBW should do. The Aurora produces crisp primary colours and nice pastels. I haven't found a colour I can't achieve.

The beam produced by the fixture is very even, and the zoom range, at 9 to 37 degrees, is fantastic, letting you go from nice and tight to very wide. Happily, the edge of the beam doesn't suffer from the weird colour separation some fixtures have when they're at maximum zoom, nor do I see any hotspots or colour variation at the centre.

Dimensions

The Aurora is extremely compact and light. At 10 kg, you can walk around a stage with one in each hand. This has been a huge



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advantage in some of the venues we work in. A recent refit saw us installing them into a converted retail outlet, which had a stringent roof weight loading limit. Being able to fit more fixtures in because of their lack of heft was a big win for us.

Build Quality

The Auroras feel good and solid in the hand, and you instinctively know that if you dropped them, they wouldn't shatter like a cheap fixture. I have to confess, the other day I accidentally kicked one, and it just stood back up and kept going. ACME OEMs for many of the major brands, so you know they are well made. We have a lot of other Acme fixtures in our rental stock, and they all stand up well physically to the rigours of hire.

Noise and Movement

The Auroras are a quiet fixture, as the cooling fans only activate when they need to. Even when they do, it's not noticeable. Our client at the Red Tree Theatre reported a substantial drop in the overall background noise level after we upgraded their rig.

When moving, the Aurora is also quiet. The loudest action it performs is zoom, but even that's pretty quiet. In terms of speed of movement, it's not as fast as some, but it's more than quick enough, and

has a completely reasonable speed for its application.

Service and Support

For control, I run mostly ETC and occasionally MA. When I first purchased the Auroras, there were no fixture profiles available on either platform, so I had to make my own, which only took five minutes. They're available now. This is one of my only criticisms of Acme; the process for control manufacturers to update their libraries seems a little slow.

In terms of local service and support, ULA Group are amazing. I've had nothing but wonderful experiences with them for years. For example, the Red Tree Theatre job had fixtures coming from stock held in Brisbane, Melbourne, and even New Zealand. To save a day shipping through Sydney, Technical Sales and Support Manager Thor André put all the stock in his van and drove them to Tuggerah himself.

Conclusion

If you're at all sceptical about Acme as a brand, I urge you to contact ULA Group for a demo and give them a go; I assure you they'll outperform your expectations. For small to mid-sized production houses like us, Acme fixtures are a perfect mixture of performance and price. I haven't had someone who's asked for a more expensive product, and been

Nik Lyons is Business Development Manager at sixt5 Productions, based on NSW's Central Coast. With 15 year's experience in production behind him, Nik and sixt5 provide lighting, video, sound and staging services for theatre, corporate events, dance, festivals, and touring acts. They also have a thriving sales and installation business, servicing education, hospitality, government, and entertainment.

Acme Aurora – The Specs

Light source: 1 x 300W RGBW LED

Zoom range: 9° - 37°

Luminous Flux: 5384lm

Protocols: DMX512, RDM

DMX Protocol modes: 2

Control channels: 13, 15

Pan/Tilt Resolution: 16 bit

Dimmer: 16 bit

Pan movement: 540°

Tilt movement: 200°

Data in/out: 3-pin & 5-pin XLR

Height: 452 mm

Width: 310 mm

Depth: 218 mm

Weight: 10.3 kg

swapped to Acme fixtures for budget reasons, complain at the end of the gig; quite the opposite, in fact. In our installations, I keep selling Acme, and keep getting happy clients who have no issues with performance, service or reliability. It's a win-win.

Product Info: en.acme.com.cn

Distributor Australia and New Zealand: www.ulagroup.com





RIEDEL BOLERO WIRELESS INTERCOM

by Brendan Sadgrove

Three years ago, Innovative decided we needed a wireless comms solution. We demoed Bolero, which had just been released, and its competition. Even though it was still in its infancy, we could see the quality and potential of the product, and jumped on it as early adopters. It's turned out to be a great decision, as I consider Bolero to be one of the two best products we've ever bought, across all equipment and technologies in our stock.

Bolero in Action at The Hub

We're currently running our Bolero system at The Hub, our broadcast and streaming studio. It's running in standalone mode; just the antennas and the beltacks. We have in the past brought in a Riedel Artist Matrix to integrate Bolero into bigger shows, but that's something we rarely need to do. The last time we did we ran 50 beltacks, but the matrix was more for integrating to other comms systems the broadcast crew were running.

We have 20 beltacks in action at The

Hub, and Riedel headsets, both single and double muff. We also have security-style covert earpieces from a third party. We run four Bolero Antennas for the 20 beltacks, with one situated across the street where our changerooms and second studio are located. We're taking advantage of the fact the antennas are waterproof, as we have one situated outside. We appreciate that you can link antennas and have the first on a power supply and the second getting power via PoE. With this system, all 20 of our beltacks can roam anywhere across both sites.

With our Riedel Network Stream Adapter boxes, we can connect Bolero to 4-wire in and out, which is how we connect to the camera comms system. We have program going into comms, and comms going into in-ears for presenters. We have it set up so the director can talk directly to the talent on IFB, with IFB wired into a key on the director's beltack.

On The Gig

An average show at The Hub would be an awards night, which we have been doing a lot of. Having everyone on wireless means producers and directors can walk around and aren't tethered to a table. The size of the beltack units is important; if it's a corporate awards night, the event managers need to wear them on their formal wear. Thankfully, Bolero beltacks are super compact. They also have a bottle opener built into the clip on the beltack, which is of course one of the most important features!

Bolero allows ten belt packs per antenna, which works well for us as it means less antennas cluttering our studio space. The capability to run six separate comms channels suits us perfectly at The Hub, as it neatly lines up with the number of different departments that are working on any given show.

ROAD TEST

With many event managers and clients unable to come to The Hub because of Covid restrictions, we've developed a system where they can Zoom into the studio and connect directly to the comms system. We put the remote participants on a screen in the studio so they can see and hear, patch comms into their Zoom feed, and anyone who needs to can talk to them via a button on their beltpacks; it's like they're in the room. We also send them a multiview feed of all the cameras, so they can see as well as hear everything. I think we never would have thought of doing this before Covid, but now it's like we've been doing it forever.

Set up and configuration of all the beltpacks couldn't be easier. We have a touchscreen laptop dedicated to comms. Our techs walk around with it, stand next to the person who needs their beltpack configured, and run

through all the comms options, like whether they need latched or unlatched, and what channels they require. Everyone's name is labelled digitally, which is important if it's a multi-day day show, as it ensures no-one is sharing headsets.

Range and Charge

The range of Bolero is revolutionary. We've done a test with one antenna and achieved a working signal at 2 ½ kilometres. I don't understand how; it's just magic. Bolero seems to work through brick walls and almost anything else. It's rock solid.

I've actually never seen a Bolero battery go flat. Battery life is much longer than a full day's work. I have on occasion forgotten to put my beltpack on charge at the end of the first day, and still gotten through day two with no problems.

Service and Support

The service and support we've received from Riedel Australia around our purchase has been exceptional. Riedel have a huge amount of hire stock here in Sydney, so we can easily get more Bolero if and when we need it. We also sub-hire our system out, kitted up in drawers cases in kits of 10 with antennas, chargers, headsets, NSA, cables, and Magic Arms to hold the antennas.

Conclusion

Bolero are pretty amazing comms, and I believe they are hands down the best wireless comms on the market. They work so well and are just so easy to use.

Product Info: www.riedel.net

Distributor Australia and New Zealand: www.riedel.net

Brendan Sadgrove is the Director of Innovative Production Services, a full-service production company based in Sydney. In addition to their full range of equipment and technical services, Innovative also run The Hub, a professional broadcast studio space featuring linked Barco E2 screen management systems, Ross video switching, flagship Panasonic 4K broadcast camera chains, extensive studio lighting system, and business-grade dedicated Gigabit fibre internet connection.

Riedel Bolero – The Specs

Bolero 6-key Beltpack

Digital license free 1.9GHz DECT band

Up to six full-duplex keys plus REPLY button to last caller

Riedel-exclusive ADR receiver technology overcomes multipath issues

Modern high-clarity voice codec increases beltpack to antenna density

Integrated Bluetooth technology for wireless headsets or phone connection

IP-65 environmental sealing

Tough, ergonomic beltpack built to survive

NFC means no registration headaches - touch the beltpack to the antenna and go

Can be used as a beltpack, a portable desktop keypad, or a walkie-talkie

Integrated mic and speaker for headset-free operation

Bolero Active Antenna

Up to 250 beltpacks and 100 antennas per Bolero Net

Intelligent use of bandwidth results in 10

beltpacks per antenna

Decentralised SMPTE 2110-30 (AES67) IP-networked antennas

Fully re-programmable FPGA to handle future networks

Network Stream Adapter (NSA-002A)

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6x 4-wire analog feed

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WHO ARE YOU REALLY MIXING FOR?

by Duncan Fry

Sitting behind the mixer at a recent gig, a question drifted into my head. Not “What is the meaning of life?” or “Where do they find these shallow, self-obsessed people on MAFS?”, but “Who am I really mixing for?”

Let's have a look at the options:

The audience?

Hmmm. Unlikely, unless the audience is a sit-down crowd of audio purists who have dusted off their turtleneck jumpers for a night of half-hour long modern jazz solos, most audiences are happy as long as something recognisable as music comes out of the speakers! Apart from feedback, that is. That's a definite no-no. One hint of a visit from 'Mr Squealy' and the whole audience will turn to you as one, eyes glaring as if it was you who pointed the mic at the centre wedges, not the dopey lead singer.

BTW, if this should ever happen, kill the lead vocal monitor send, then tell the dopey lead singer he's blown them up and that'll be \$300 for new diaphragms, thanks very much!

Other mixers in the crowd?

The only reason there would be any other mixers in the crowd is to badmouth you and the sound in the hope that they can pitch for your job. “Mate, that guy couldn't mix a cake.”

“The sound he's getting is really holding you back.” “I could do it for half the price you're paying him.” And so on, ad nauseam. I've had a band fire me and get someone else for ten dollars a night less than I charged. Sure, his system stopped working the first time they used him, forcing them to turn the monitors around to face the audience, but hey, it cost ten dollars less!

Other musicians in the crowd?

For some musos in the audience, their own instrument is all they want to hear. They care about the sound, but for the wrong reason.

One night there was a voice in my ear. “Crank up the drums, mate.”

I turned around to see a guy with crossed drumstick earrings and a black DrumTown T-shirt leaning over the effects rack.

“Why?” I asked

“Well, I'm a drummer, mate, and I reckon they should always be the loudest thing.”

I waved my arms to indicate the crowd of

several hundred people, all happily bopping away and singing along.

“Look,” I said. “See these people? Who do you think they've come to hear? The famous Mr X or the drummer? You tell me.”

He stared incomprehendingly at me, then the audience, drained his beer, and shuffled back to his mates, all wearing the same T-shirts, who were clustered behind me. I leaned back to eavesdrop on the conversation.

“Nah, he won't listen. I told him what was wrong with the mix but he's just an idiot.” Nuff said.

The band?

Not as long as your bum points to the ground. A huge amount of empirical research has determined that the band has no idea how things sound out front. If you've done your monitor setup well, you could have Front-of-House turned off for all they know.

Let me give you an example. During a break at an overnight country gig, my trusty assistant Chris and I retired to the luxury of the Crew accommodation (two bunks with furniture painted on the walls) for a quiet drink away from the crowd and cigarette smoke. We sat back on the bottom bunk, each sipping on a Jack Daniels, with the disco blaring in the background.

One of the songs sounded vaguely familiar.

“Isn't that one of the songs the band plays?” I asked.

"Yes, it sounds like it," he replied. "It's a bit rough when the DJ plays one of their songs. After all, I left their song list in front of him on the DJ mixer."

Indeed, this was true. One of the first jobs at these gigs was to give the DJ a copy of the band's song list, so that he wouldn't play any of the same songs the band would. Any transgression of this unwritten law often ended with the DJ packed into a road case and pushed down the back stairs at the end of the night!

I settled back and sipped some more.

"Hey, this is another of the band's songs," exclaimed Chris as the next tune drifted in to us. "What's going on here?"

Realisation suddenly hit me like an ice pick in the forehead.

"Jeez, that's not the disco...that's the band playing!"

"Holy crap" yelled Chris, and we hurtled out of the room, down the corridor, and stood in the doorway of the main lounge, out of sight of the band. Sure enough, there they were, playing their hearts out on stage, with only the sound of the instruments and amps plus the vocal spill from the monitors.

Chris and I crouched down on our knees and sneaked across behind the crowd to the mixing bunker. Very slowly, and still kneeling down, I inched up the levels on the faders, so the sound gradually increased, until within a minute it was back up to normal ear bleeding levels again.

I changed from kneeling down behind the desk to being hunched over it, and the band continued on their merry way, oblivious to the fact there had been nothing out front for the first couple of songs!

And if you want further proof, what's the first thing that bands say to you when they get off stage?

"How's it sounding out there?"

The correct answer is, of course - "Fantastic, guys - you're really playing well tonight" if you want to get paid for the night's work! Any other answer is very, very risky.

The band's manager? (substitute Visiting VIP or venue manager if necessary)

Let's be frank here. The band's manager's opinion of the sound is the opinion of the last person he (or she) spoke to. Appreciating good sound is item # 101b on the list of a manager's duties.

Basically, the manager is happy as long as the band is getting paid and the audience isn't throwing things at them.

The bass player's partner?

For whining nothing beats the partners of the band. And, believe me, if you don't keep them happy you've probably blown all chance of keeping the gig.

"I can't hear Tarquin's backing vocals."

"Is he singing?"

"No, but even if he was I can't hear him"

So, you have to tactfully explain that when Tarquin does sing, it would be a great help if he got closer than a couple of metres to the microphone.

The only other people who come up to you at the mixer are looking for the toilets so they can jettison the night's intake of alcohol.

Sometimes they even make it there on time...!

You?

Yes, it's you, of course. Sometimes you're the only person in the room who can distinguish good sound from a hole in the wall. The only person who really appreciates the zing you carefully added to the tail of the vocal reverb, the beautifully crafted bass guitar tone, that perfect gate setting on the floor tom, the way the vocals sit just in the right spot over the music, the Left/Right guitar panning, or whatever. It's your job, you're getting paid for it, and it should be fun for you as well as the audience.

So tweak that mix, set up that delay/chorus effect in time with the beat, give the EQ that final little nudge to make sure everyone gets the best chance of appreciating the hard work you're doing out there.

And in the unlikely event that someone does come up and whispers huskily in your ear "I love that effect you've got on the vocals" then let's hope they're good looking!



aceta

Strategic Planning Weekend 26 - 28 March 2021

Given the current state of the industry, this pivotal event provided a dedicated opportunity to identify and analyse the issues that undermine our constituents, then develop corrective responses.

The ACETA Board decided to prioritise the following new and enhanced initiatives, as follows, based on debate and analysis.

- Service provider accreditation
- Update and expand product compliance guidance document
- Improve and Expand communication to members and industry
- Convention 2021/2022
- Progress the Archive of Excellence Program
- Represent our constituents interests in respect of the Media Reform Green Paper - Impact on wireless technology

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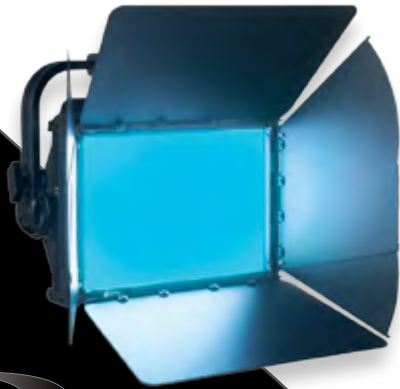
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