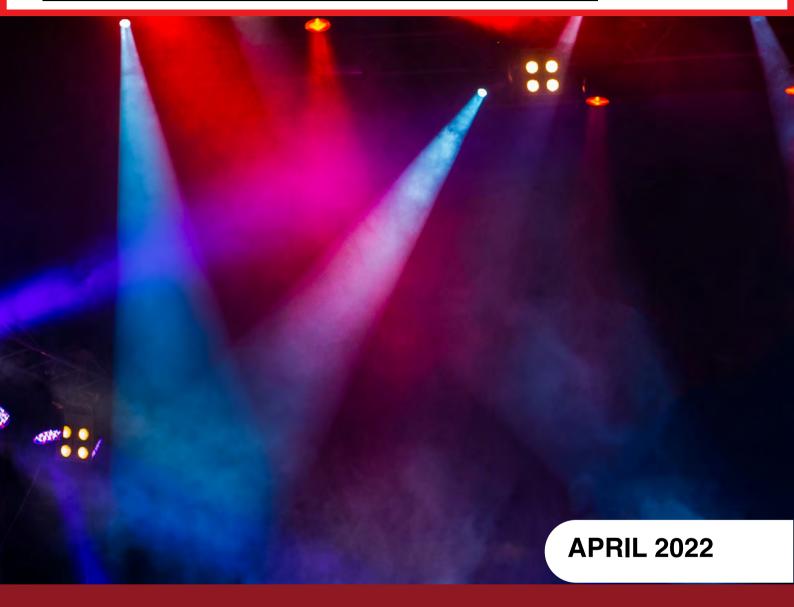
ENTERTAINMENT TECHNOLOGY ASIA

For The Technical And Production Professionals in Asia



IN THE LIMELIGHT ...

Stage Lighting for Theatres and Performance Venues

DIGICO AND D&B PARTNER
ON IMMERSIVE SOUNDSCAPE
INTEGRATION

LIVE: SOCIAL COMMENTARY WITH A TREAT TO THE SENSES

SPOTLIGHT: LAKIR MEHTA, INDEPENDENT LIVE SOUND ENGINEER / TOURING SOUND ENGINEER (FOH & MON)

W W W . E - T E C H A S I A . C O M



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ETC's flagship line of lighting control consoles offers a sleek control interface engineered for your comfort and customization. With generous programming surfaces and the power to run complex rigs, Eos Apex is the ultimate hands-on, professional workspace – powered by the ultimate control platform.

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FIRST WORDS

APRIL 2022



We delve into the enchanting world of stage lighting for theatres and performance venues in this issue. Industry experts offer insights into the history of the art form, the current trends in skill and technology, and the evolutionary trajectory of products and systems responsible for adding vibrancy and magic to on-stage performances. Alex, in his column,

asks a pertinent question – are we sound engineers or artists in our own right? Our Spotlight column this month features Lakir Mehta from India, who is an independent Live Sound Engineer / Touring Sound Engineer who does both FOH and MON. Some of Lakir's memorable experience has been working with a team on mega-concert productions for world-class artists like Slash and Dire Straits.

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IMPRESSION X5



26 – 29 April 2022 Booth 12.1 C30





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High TLCI and TM-30 values for standard-setting light quality



DiGiCo and d&b Partner on Immersive Soundscape Integration



GLOBAL: d&b audiotechnik has partnered with DiGiCo to advance the accessibility and ease of use of the immersive audio system platform that is Soundscape. Utilizing object-based mixing, Soundscape enables localisation and imaging of sound objects within the chosen sound design field. Soundscape can also modify or create emulated acoustic signatures, both indoors and outdoors.

With this partnership, there will be a dedicated Soundscape User Interface fully integrated into the surface of all DiGiCo SD and Quantum consoles, allowing FoH engineers to control Soundscape object parameters on the DS100 on the consoles.

"By partnering with DiGiCo, we are ensuring that Soundscape is accessible to FoH engineers in their preferred mixing and automation environment," said Georg Stummer, Product Manager, d&b audiotechnik. "This integration will allow Soundscape to become an intuitive part of their creative workflow and design repertoire. It is important to us that we take the object based capabilities of our high-performance immersive toolkit as close as possible to creatives and their existing production environment. Soundscape is defining the way spatial audio is used for live productions."

The partnership made it possible to replace the generic OSC control for the DS100 on DiGiCo consoles with an intuitive Soundscape control interface. This integrates new features like free assignment of DS100 sound objects and different mapping areas for each channel strip of the console. All parameters and assignments of Soundscape User Interface can be stored and recalled with the console Snapshot memory.

This integration can be expanded for bidirectional communication between the console and DS100, via the d&b software bridge (Remote Protocol Bridge) while also supporting setup with two DS100s. By controlling two DS100s in sync within a

redundancy setup or up to 128 sound objects on two different DS100 from one console.

"At DiGiCo we recognise that immersive sound technology is gaining rapid industry acceptance and represents an exciting future for our industry. We want to ensure that FoH engineers, and sound designers can access this technology at their fingertips as a normal part of their workflow," commented Austin Freshwater, MD at DiGiCo. "We are proud to partner with d&b to provide a seamless and efficient way to integrate Soundscape into show programming and operation with our consoles."

"In a short space of time Soundscape has had an enormous impact upon both d&b and our industry," commented Amnon Harman, CEO d&b Group. "d&b is deeply committed to furthering our market leadership with this technology. This partnership with DiGiCo is an exciting next step in ensuring that our mutual customers can work seamlessly with our systems to realize their creative visions."

d&b Audio

DiGiCo

YOUR BUSINESS

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PALM AV-ICN Expo is India's foremost platform for the sound, light and audio-visual industry. For 19 editions PALM AV-ICN Expo has consistently put up an extravagant display of technology in collaboration with the world's top brands. The 20th edition of the expo will be a major game changer. This year's edition will exceed expectations with an aweinspiring expanse of sound, light and AV products and a host of vibrant informative sessions and content features.

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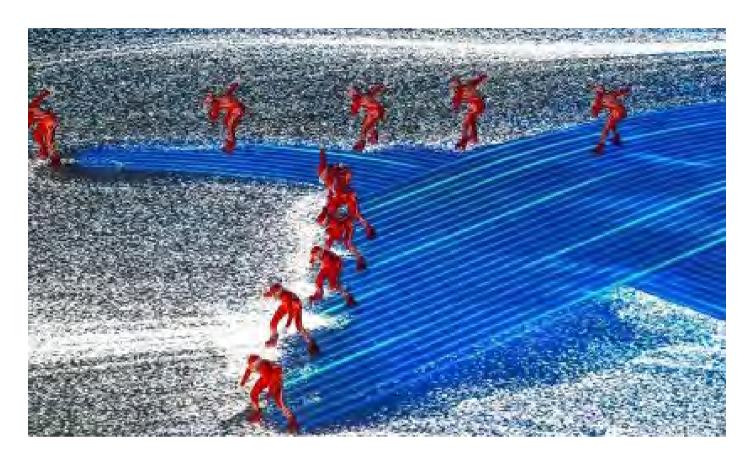
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Tricolor Creates Romance at 2022 Beijing Winter Olympics



CHINA: Built around the romantic nature of a snowflake, the Beijing 2022 Winter Olympics achieved the perfect combination of conceptual innovation and technological power.

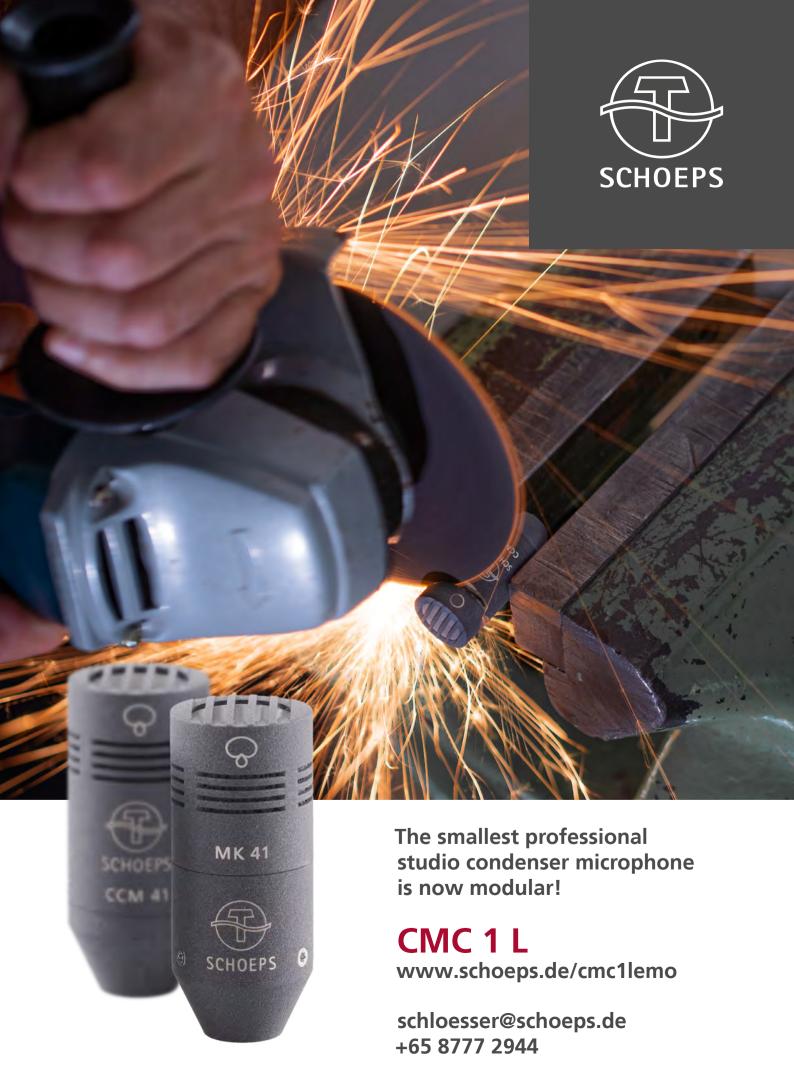
"Shining Snowflakes", performed by hundreds of children holding peace dove model lanterns, became one of the most romantic opening ceremonies to be held for the games. The children ran freely on the stage, stepping on snowflakes under their feet, with stars flowing to the children's footsteps. Behind the cool visual effect was a real-time capture and interaction system, which captured the real-time position and posture of actors and rendered corresponding art effects.

Tricolor was responsible for providing a real-time signal transmission system. Using zero-compression and all-digital technology, the company provided pixel-to-point

transmission of audio and video images and captured high-definition cameras. The precise information of the actor's position was transmitted to the real-time rendering and presentation system using interactive engine technology, which finally realized the magical interaction between the actors and the "screen" under their feet.

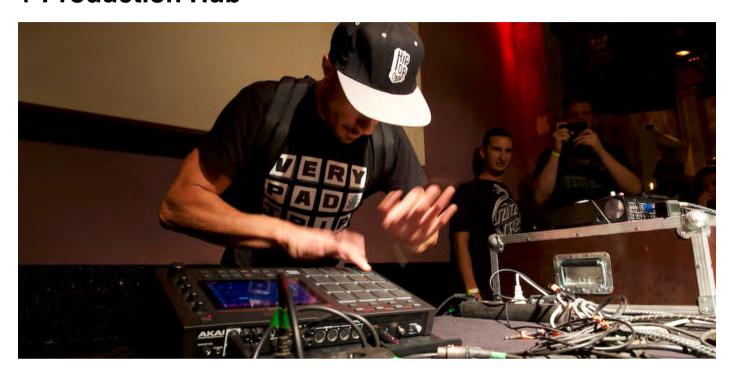
The Beijing Winter Olympics was not only a stage for athletes from all over the world to pursue their dreams, but also a celebration for people all over the world to understand each other, unite and help each other, and work together.

Tricolor





Prolight + Sound 2022 to Restart with Performance + Production Hub



GERMANY: The premiere of the Performance + Production Hub at Prolight + Sound 2022 will present new audio tools in action as well as countless education events for four days (26 to 29 April 2022).

The area housing the Hub in the Portalhaus at Messe Frankfurt will be created in close cooperation with the Sample Music Festival. With the premiere of the Performance + Production Hub, the cooperation partners underline their commitment to making the fair a hotspot for audio professionals from all sectors of the industry.

Presentation of Sound Tools

Companies of all sizes will present their latest solutions in the Performance + Production Hub: not in the style of classic product presentations or behind glass cabinets, but hands-on, together with the brand experts.

The range of products will extend from software tools, mixers, sequencers and sound reinforcement technology to DJ equipment and accessories. Among the exhibitors confirmed so far are Ableton, ADAM Hall, Alter.audio, APB Dynasonics, Dato Musical Instruments, Decksaver, DJCity, Gravity, Herrmutt Lobby, Jetpack, LD-Systems, LiteConsole, Oyaide NEO, Tascam and VoicAs.

Music Production Corner

In cooperation with Ableton, a world leader in digital audio workstations, the Performance + Production Hub is set to host a central attraction for music producers. Ableton-certified educators will demonstrate the creative power that arises when software tools meet midi controllers and beat sequencers, and when production blurs with live performance. Together with additional partners, Tascam and GIK Audio, there will also be a station on the main topic of "Field Recording". Here, audio enthusiasts will learn how to record sounds from everyday materials and integrate them into their mixes.

Show Stage "Digital Live Performance"

On an elaborately designed show stage, top-class artists and production specialists will present their skills and give visitors an impression of the different varieties of digital live performances. Everything revolves around the synergy of sound and visual impressions, made possible by an impressive media installation with an LED wall. The artists confirmed for the show stage so far include Gnarly (live beatmaking), Pedro La Kraken (finger drumming), Arkaei (live visual performance), Hix Boson (live



remixing), Ray-D (turntablism) and the creative heads of the Soundadd agency (controllerism).

Experience Zone "Live Sound Branding"

A state-of-the-art way to effectively showcase brands: the Experience Zone gives insight into the current trend of live sound branding. Tim Kroker, Product Specialist at Native Instruments, and Alex Sonnenfeld, Director of the Sample Music Festival, underline the creative potential. Sound specialists can increase the recognition value of a brand by integrating the characteristic sounds of products into music or remixing sound logos on-the-fly.

Show stage "Mobile DJing"

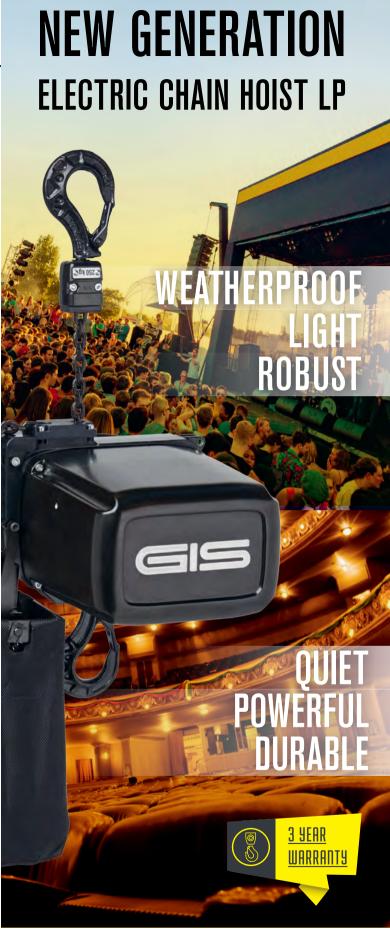
The upcoming #restart of the event industry paves the way for a high demand for wedding, corporate and anniversary parties. In this wake, the relevance of tools and knowledge transfer in the field of mobile DJing is on the rise. Experienced performers DJ Cut Cake, Ray-D, Luke Traveltone as well as the experts of DJWorkshop Germany will present contemporary creative techniques in live presentations and explain which lighting and sound solutions help to turn a DJ set into an impressive event.

Jam Boxes

In the style of a jam session, visitors can try out brand new tools and improvise performances together - experts from the field will be on hand to show how it's done. In the Jam Box "Music Apps & Scratching", both digital music applications and DJ hardware are available. In addition, there is the Jam Box "Modular System": a Mecca for knob-turners, who can operate the racks and modules of well-known manufacturers here. One focus will be on the trend topic of "Syntablism": this involves a modular synthesiser being controlled by movements on a DJ set-up, creating a completely new kind of sound generation.

Click HERE for the full Performance + Production Hub line-up and get an updated overview of the represented brands.

Prolight + Sound







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Focusrite Group Welcomes Linea Research to Brand Family



partners. This can only be a good thing for our customers, end users and very much our staff."

Focusrite's subsidiary Martin Audio is a major customer of Linea Research whose technology is behind the successful iKON amplifier series. iKON amplifiers power Wavefront Precision line arrays that can be seen on live tours and at prestigious festivals, such as British Summer Time in Hyde Park.

GLOBAL: Linea Research has become the ninth brand of the Focusrite Group, joining Focusrite, Novation, Ampify, ADAM Audio, Martin Audio, Optimal Audio, Focusrite Pro and Sequential.

Formed in 2003 by a team of experienced professional audio specialists, Linea Research design, develop, manufacture and market innovative professional audio equipment globally. Specifically, the UK-based designer and manufacturer of professional amplifiers, controllers and software, is responsible for ground-breaking amplifiers, including the world-renowned M Series. Along with amplifiers, their product range includes Digital Signal Processors, audio networking and software products.

Two of the original founders, Davey Smalley, Commercial Director, and Ben Ver, Engineering Director, will continue to lead the business post-acquisition. In a joint statement Smalley and Ver, commented:

"We are delighted to be able to continue the Linea Research success story from within the Focusrite Group. Having seen the support and growth of the brands within the Group, we believe this provides us with a secure foundation to further our R&D efforts and product portfolio, strengthening the Linea Research brand while continuing partnerships with our long-standing OEM

This acquisition will strengthen the critical source of supply of amplifier modules for Martin Audio and will enable greater integration of loudspeaker and amplifier technology in Martin Audio products. Simultaneously, Focusrite Group intends to continue to develop the sales of Linea Research products through third-party distribution and to OEM loudspeaker customers.

By extending the Group's business into new products and markets, which complement its existing offerings, the acquisition is strategically aligned with the Group's previously communicated aims of growing the core customer base, expanding into new markets, and increasing lifetime value for customers.

Tim Carroll, CEO of Focusrite Group, said:
"It is an absolute pleasure to welcome Davey, Ben and the entire Linea Research team to the Focusrite Group. We know the team and the business well given that Martin Audio is a major Linea Research customer. This will lead to many synergies and is expected to improve gross margin for both Martin Audio and the wider Group. Linea Research's products are globally recognised as best in class and we are all excited about the opportunities and possibilities that lie ahead with the collective expertise of the Linea Research and Focusrite Group R&D and sales teams."

Focusriteplc

NEWS

The P.A. People Celebrate UAE National Day



©Nicholas Chavance Groupe

UAE: While Sydney was experiencing extended lockdowns, The P.A. People Events Department had a very busy final quarter of 2021, preparing and delivering communications for the UAE 50th National Day Celebrations in Dubai. The size and scope of this annual event was truly phenomenal.

With an experienced crew sourced from their Australian staff and familiar faces abroad, The P.A. People were part of a large team delivering a spectacular show staged on Hatta Dam in the Country's east. Providing both wireless and wired comms, the system started with 26 interfaced two-way radio channels with Mototrbo digital handsets. The intercom components included Clear-Com HelixNet digital party line, Eclipse Matrix frames and panels, and Free Speak II full duplex comms system, able to accommodate 120 wireless Belt Pacs across 40 IPT transceivers deployed over the very large site.

All of this was supported by The P.A. People-designed network and fibre backbone, distributing timecode to



their IP timecode displays, along with CCTV cameras and some 40 CCTV displays. The team also provided the network backbone for the considerable 'water' component of the show consisting of programmable fountains across the stage and set. Malestrom, their new cloud-based asset management software, kept track of all the 'user assigned' equipment managed over the project, and the daily sign-in and outs.

LarMac PROJECTS was the Official Producer of the 50th UAE National Day Celebration.

The P.A. People



University of Otago Chooses Duality with Solid State Logic



NEW ZEALAND: The University of Otago, in Dunedin, opened a new School of Performing Arts building in 2020, a purpose-built, two-story complex that features a Solid State Logic Duality Delta SuperAnalogue mixing console in the spacious main recording studio. The studio supports the school's teaching program while also accommodating national and regional music industry projects and encouraging community engagement through workshops and other events.

"The reputation of the Duality precedes it, both in terms of the package — the workflow and how it sits in the room — as well as how it sounds," said Stephen Stedman, Studio Manager and Music Technician at the university's new Te Korokoro o te Tui studios. "We had a really good look at what other educators are doing around the world, where they want a real-world professional studio console. Dualitys are highly regarded and are in some of the best facilities in the world, so what we are teaching to students is relevant and aligned to what they might encounter in the outside world."

Fostering a real-world experience

There were a couple of other reasons to choose the Duality, he continued. "We definitely wanted an analog workflow and that sound. And we wanted something that would demonstrate to students how a large-format console works, how it's laid out and why so many of the software applications that they use in-the-box are built the way they are built and why the plug-ins look the way they look. They can take that real-world experience and the in-the-box stuff starts to make more sense for them."

Additionally, Stedman said, the school wanted to increase engagement with the New Zealand music industry: "So we wanted a console that would be attractive to producers, musicians and publishers, and agencies like the Australasian Performing Right Association and the NZ Music Commission."

A city with roots and influence

The University of Otago — New Zealand's oldest, having been established in 1869 — is located in a city that



captured the world's attention in the late 1970s and early '80s with the influential "Dunedin sound," which made its mark through bands initially championed by the Flying Nun Records label such as Toy Love, The Chills, The Verlaines and Straitjacket Fits. "The explosion of music in Dunedin was a contributing factor to us having a contemporary music program at Otago, which led to us having this studio, because we needed somewhere to run that program," Stedman said.

The university's contemporary music program was housed until 2020 in an aging former New Zealand Broadcasting Corporation radio studio complex, now demolished, on Albany Street in Dunedin. "We moved there in 2000 and we had an SSL C200 that we bought in 2010. That was our first foray into a serious largeformat console. The C200 was a phenomenal piece of equipment. That experience with SSL informed the decision to buy the Duality," he said.

"We're around the other side and down the bottom of the world, so the tyranny of distance is always a problem for us," Stedman continued, using the popular phrase coined by historian Geoffrey Blainey, who wrote about the impact of geographical isolation on Australia, and by extension, New Zealand. "We carry comprehensive spares and we're trained to swap boards if we need to. But knowing that there are some people that you can send an email to and you'll get a reply that evening, and the level of service that we had from SSL at Albany Street, was also part of the decision process for the Duality."

That 'lovely, big, fat sound'

Stedman enjoyed his time with the C200 but, unsurprisingly for a man who collects vintage tape machines, is happy to now be working on an analog desk. "When we track on the Duality, we get that lovely, big, fat sound coming off it. You can wind in some harmonic distortion if you want to, but it also has a clarity, so it's got the best of both worlds. It's really musical — that's the quality that I experience with it," he reported.

The new control room overlooks a 1,000-square-foot, two-story-high live space. Connector panels in the space feed 128 mic lines to the control room, 48 of them normalled into the Duality. The studio is well stocked

with a variety of acoustic and electric instruments and amplifiers that have been collected over the years. A gantry around the upper level of the tracking room enables microphones, lighting, video screens and other equipment to be suspended.

"We've got a camera above the Duality so we can throw an image of the console up on the big screen for Lectures or Lab work. We've got cameras all through the building, so we can live stream. And we can route audio all over the building," over a Dante network, Stedman noted.

A healthy mix of technology and philosophy

The music production part of program is a mix of technology and more philosophical thinking as Stedman explaind: "We start by recording some people playing music. You learn all the technical stuff along the way, but the further you go into it the more sort of philosophical it becomes. It's about the bigger questions. What is production? Why do records sound the way they sound? Deeper into the course, it becomes about the impact of music and where it's going and what our response to that might be."

The recording studio is kept busy with teaching and with student projects during semester but can accommodate some outside production projects at other times of the year, he reports. "We also have postgraduates doing their master's and we have a Doctor of Musical Arts program, which you can do in music production, where you produce three or four albums in the process of building your doctorate."

Beyond that, the university hosts various events to engage the community at the facility. "If we have the Australasian Performing Right Association people here doing a series of workshops, then the outside community can come and participate, and our students can be involved as well," Stedman said. "It's all about helping people make connections."

Solid State Logic



ETC Cyberlight LED



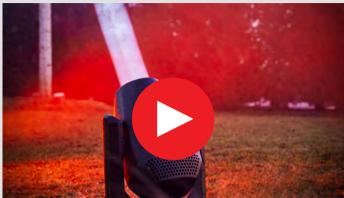
With a smaller gate size, ETC's Cyberlight LED boasts a much broader feature set, wider zoom range, and encoded pan and tilt system. In addition, the fixture is equipped with a transferable LED engine, and a maintenance design that prioritizes longevity and precision. The 470 W Bright White LED engine and high-quality optical system delivers 12,750 field lumens with 90+ CRI for superior colour rendering capabilities. A full complement of features are included on Cyberlight LED for creative design possibilities, including colour mixing plus colour wheel, dual rotating pattern wheels, zoom, focus, iris, prism, and diffusion.

SCHOEPS Basement Exhibition



SCHOEPS Mikrofone presents solutions for a variety of applications. Let SCHOEPS Mikrofone co-CEO, Helmut Wittek take you on a journey of their 'exhibition booth'. This 3-part series features an overview of the miniaturized Colette amplifier CMC 1, a full-fledged alternative to the CMC 6, Colette modular microphones, plus the supercardioid capsule MK 41, CMIT shotgun series, and many more.

Cameo OTOS H5



The OTOS H5 Beam Spot Wash Hybrid Moving Head is a multifunctional spotlight with an IP65 certification that makes it particularly suitable for outdoor areas, such as open-air concerts and classical festivals. With a low weight of only 33 kg, the OTOS H5 the lightest product in its power class. Boasting high-quality optics with an especially wide zoom of 2° to 42°, the OTOS H5 allows lighting users to let their creativity run wild and design fascinating light shows for diverse applications.

Key Digital & TOA Electronics LeCAMbio



Featured in our Ennovation column this month, watch Key Digital and TOA Electronics present a demo of the LeCAMbio audio driven PTX camera system. Combining TOA's Lenubio AM-CF1 Audio Processing System together with Compass Control Pro Module on an iPad and KD-CAMUSB PTZ Cam from Key Digital, this system can identify and orientate the camera towards audio by using a preset system.



The Difference Between Art and Engineering



And you might ask: Does it even matter for as long as it pays the bills? Coming out of a very long period with limited if any paid-for gigs, this is a valid comment and question of course. Looking beyond the need of the moment, this is something that i have been thinking about my entire career in

this industry. I am a Sound Engineer by education, yet i am expected to deliver Art in many of the Jobs that I perform in. So I thought that it would make sense to try to understand this better and also to determine which is which.

Many of us have used the downtime in the past two years to try to learn new stuff and add some new tools to our toolboxes. Knowing something theoretically does not mean you will handle it well in practice. We need to hear how things work and how using certain tools will change the mix and the sound of what we are doing. Going wrong many times is actually a part of the path to success. This almost gets to the core of the question above.

I think that anyone calling themselves a Sound Designer, should at least have a very good education and skillset in sound engineering. After all you want to make sure what you are designing is even possible in the real world with real world limitations and conditions. In my understanding, becoming a sound designer will come way after you have become a successful sound engineer. As a sound engineer, I have mixed many conferences, presentations, TV- shows and other events, where creativity and art have not been part of the job at all. All this was about managing sound inputs and outputs and to deliver the message to the audience in a decent and even manner. I don't think that there was or is any art involved in this. It is engineering.

It is even the same if you mix a band, where the sound of the band is well established and you are given a CD (yeah I know very old school) which gives you an indication of how the result is expected to sound. I have done countless numbers of those kind of jobs and they can be fun and they still leave room for creativity in how you go about the task, but I would still not consider this art

For me art is when the client comes to you with an idea for something and they ask you for advice and input and where you get to create and design a system from Input to Output with all details to deliver the idea of your client. I have been lucky enough to have some of those and they are a clear highlight of my career and the older I get, the better I feel equipped to handle such a task. This is a great way of being able to advance your knowledge and also your career through learning more and new tools, so you can establish yourself as a capable engineer, who can handle art aspects of a performance as well.

The way I approach this is, that I try to develop a "picture' of how something should sound and what it should sound like in my head. I do think that this is the creative and possibly the "art" aspect. Then I will use my engineering skill-set to make this happen and to tweak and tune what I am doing to meet the mental picture I have created earlier. Full disclosure, I don't think I was able to do any of this in the first few years of my career as a sound engineer and the older I get and the more I learn, the better I get at this and this is what has kept me working in this industry so excitedly for 35 plus years now.

I strongly endorse and encourage you to keep on learning and to keep on trying new things. It is the same as with cooking, where experience and knowledge of more spices will make your dishes more exciting and interesting, or in wood working, where you can make stuff really creative, when you know and possess all the skills for making anything at all. I have ventured into both of these domains and I find them equally exciting to work in. All the best to you.

Join the conversation and share your thoughts with Alex. Alex can be reached at alex@asaudio.de

ENNOVATION

APG Unveils Feature-Packed Live Manager 1.8.9 Update



Version 1.8.9 of APG's Live Manager software is a comprehensive, far-reaching update that introduces a range of new presets, gain chain tweaks allowing for higher sound levels, and deeper integration with Powersoft software and amplifiers.

Developed in response to feedback from APG's partners, customers and users, Live Manager 1.8.9 increases remote control and monitoring software functionalities while continuing to give users simple, easy-to-use access to the legendary 'APG sound'.

According to Maxence Castelain, application engineer at APG's parent company Arbane Groupe, the 1.8.9 update is above all an upgrade to the user presets – both for Live Manager itself and in the creation of a brandnew bank of APG presets for Powersoft's ArmoníaPlus software. The latter addition will be especially useful for users of Powersoft fixed install amplifier series with DSP, while new plug-and-play system presets will simplify the deployment of APG speaker systems.

These include presets for newly launched products – including the iX Series of fixed-installation loudspeakers, the iS range of subwoofers and the new UC118i sub – as well as for cornerstones of APG's Uniline Compact range (such as the UC206N, UC206W, UC115B) and Uniline

range (UL115B and UL118B), making APG's DMS48 processors and DA amplifiers compatible with a wider range of products and technologies.

Optimisations to the gain chain, meanwhile, enable Live Manager users to achieve a high sound level with typical console settings: improvements include a new amplification gain of +32dB, digital/analogue conversion alignment of 0dBu = -24dBFS, and a nominal operating level of 0dBu (with 8dB headroom) for all APG speakers.

These new features – along with other improvements such as standardised crossover frequencies (for faster and easier system set-up) and the optimisation of speaker protection parameters (allowing for better sound quality at high volumes) – help simplify the deployment of APG systems in both fixed-install and live environments.

This is particularly true with Powersoft amplifiers, where the new APG system presets on ArmoníaPlus allow for a plug-and-play installation and guarantee a premium level of operation in no time. The new update is now available to download by following the APG link below.

APG/ Live Manager



ETC Eos Apex Consoles Offer Complete Control



With three sizes to choose from – the Eos Apex 5, 10, and 20 – this latest release ushers in the next generation of ETC's flagship controls line. The consoles prioritize the user experience with massive multitouch displays offering generous screen real estate for Magic Sheets, Direct Selects, and Augment3d models, and 4K resolution. The displays articulate on a dual-axis and feature a 160-degree viewing angle, so you can see all your tools and data from anywhere along the programming surface.

Eox Apex consoles possess an ergonomically redesigned wrist-rest, book lights built into the sides of the desk, hand-holds for easy carrying, and drawers and charging ports for your accessories.

The encoder area from the Eos Ti console has been expanded to include eight mini-encoders and a navigation dial to easily switch between parameters. The five, ten and twenty motorized Playbacks on each Apex console (respectively) now boast an additional, separately-mappable scroll wheel for on-the-fly programming.

The familiar Eos Family programming keypad has been enhanced with a touchscreen that thumps with haptic feedback when you press your soft keys or mapped content. Eos Apex also introduces customizable Target Keys for your Direct Selects, which boast individual OLED displays that can be customized with images, icons and text.

The Eos Apex Processor provides the power of an Eos Apex console in a portable, rack-mountable box that makes an ideal primary or backup controller or remote programming station. When you need a portal into your lighting system but not the processing power, the new Eos Remote Interface lets you view and edit your system from anywhere in your venue. Apex consoles themselves are built with flexible system-building in mind, allowing you to mix and match your DMX and show control ports on a per-show basis using customizable widgets. In addition to standard etherCON Gigabit connections, all Apex-class controllers also feature SFP+ ports that are compatible with the latest high-speed copper and fiber networks.

Eos Apex consoles and Processors provide 24K output, allowing them to control complex rigs with ease. As shows keep getting bigger and bigger, expansion processing options are already in the works as the next phase of Eos development.

ETC/Eos Apex



Significant Update for Martin P3 System Controller Software



HARMAN Professional Solutions has announced that Martin P3 System Controller Software Version 5.3.0 is now available as a free update for the entire family of Martin P3 System Controllers. The update introduces a range of features and improvements that benefit newer products such as the MAC Aura PXL, MAC Ultra and VDO Atomic Bold, as well as classic Martin products including VDO Sceptron, Exterior PixLine and VDO Fatron. Highlights include:

Video input: The P3-PC System Controller now supports the industry-standard NDI protocol, allowing P3-PC to receive video-over-IP from various sources such as media servers, webcams and media players.

DMX/Art-Net/sACN input: sACN is added as input protocol on all P3 System Controllers, alongside DMX and Art-Net. Support for multi-universe Art-Net Sync and sACN Sync has been added.

DMX and Motion Patch: DMX & Motion View now includes an easy re-patch functionality and incoming universe status window. Additionally, it is now possible to

run fixtures in "pure video mode", not requiring any DMX controls to be patched.

Setup View: New features include Background Image Opacity Control, New Tools Menu, and Workspace Size Tooltips; the Renumber Tool and Quick Addressing Tool have been updated to improve workflows; and support for Active PDE Junction Box is added. Enable Magnified Fixtures now supports MAC Aura PXL, MAC Ultra and VDO Atomic Bold fixtures.

P3-PC-specific updates: The P3-PC System Controller is now using a new network driver, making it compatible with modern hardware.

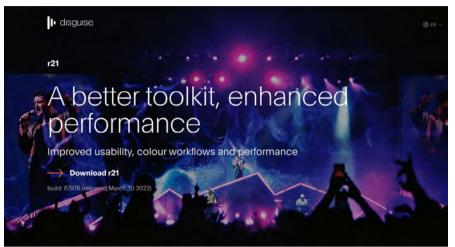
Additional Enhancements: All latest Personality and Fixture Firmware files are added; Save options now include Save Backup in addition to Save As; fixture file sorting is now alphabetical; and the Edge Compensation window now indicates when selected fixtures do not have the same end compensation enabled.

The new update is now available to download.

Martin/Software V5.3.0



disguise's Latest r21 Software Release Enhances Production Workflows



disguise, the visual storytelling platform and market leader in extended reality (xR) solutions, has launched its latest software release, r21, unlocking improved functionality of its Designer software interface and RenderStream workflows, as well as introducing new tools for managing colour workflows. The release promises enhanced performance of the disguise software for productions across all of disguise's widereaching industry applications, from live shows to virtual productions, broadcasts and fixed installations.

Developed throughout the last 20 years as a pioneering solution to previsualise and deliver show stopping concert visuals for some of the world's biggest artists, disguise has always held its community of users, customers and partners at the heart of its development pipeline.

disguise's award-winning xR workflow, officially launched as part of software release r18 last year, is a case in point. Developed in close partnership with a select group of disguise users around the world who field tested the release and shared feedback and improvements to the disguise development team over the course of two years, disguise xR has since become a leading global solution for extended reality and virtual production.

"What makes r21 stand out from previous releases is that it allowed our team to test it with our user community on site for various productions - an extremely valuable opportunity that previously couldn't happen due to Covid restrictions. The ability to work alongside them and see first-hand what challenges they face is hugely insightful for us as we develop solutions and features to address them," says disguise Head of Software Engineering, James Bentley.

r21 introduces a suite of new features to its core software interface, allowing its diverse range of users, which include workflow specialists, screens producers, creative designers and technical

producers, to work with disguise more efficiently. The release also brings significant improvements to disguise's RenderStream infrastructure - a core element within its workflow that integrates the disguise hardware, software, content engines and camera tracking to deliver seamless productions.

Finally, r21 also includes new features that improve colour management within the disguise workflow. Colour management is at the core of every production, so with help from the disguise colour insider group, the team took a closer look at its existing colour workflow end to end and developed new features that enable colour grading with accuracy, while also introducing support for widely used colour formats.

disguise r21 is available to download for free from disguise's homepage and available in seven languages: English, Spanish, German, French, Korean, Japanese and Simplified

Chinese. As part of the company's mission to lower the barrier of entry to its production tools and better serve its growing global community, users have been able to enjoy free access to disguise's software licence for the past two years and more recently even use the software in their local language.

Download the new disguise software.

disguise



New Beginnings

Evolve, Grow, Develop!



26 - 28.05.2022 BOMBAY EXHIBITION CENTRE, GOREGAON (E), MUMBAI, INDIA



PALM AV-ICN expo is India's foremost tradeshow for Professional Sound, Audiovisual and Lighting Industry. For 20 years PALM expo has been the principal catalyst fuelling the industry, by connecting global manufacturers and solution providers with dealers and vertical market buyers.

In its previous editions, PALM's Pro Sound & Light + Pro AV Exhibitors, have grown Indian markets and delivered the best to Indian trade and community professionals. The show has rich heritage of providing limitless opportunities to pro sound, audio-visual and lighting industry, and this year PALM AV-ICN expo 2022's importance is especially incontestable as it points to new beginnings!

AV-ICN Summit: The three-day AV-ICN Summit will host informative, technical Conference & Seminar sessions by thought leaders and experts of AV industry, discussing topics of interest and relevance to AV industry. The Summit aims to be a window to the future of AV in India providing equal opportunities to all to participate.

PALM expo 2022 in conjunction with AV-ICN expo will be a major game changer as it will revive the entire demand and supply chain, reactivating trade, providing physical platform for buying and selling. The expo will reinitialize business connections, networking and interaction between exhibitors and their prospect partners, dealers and end-users by fulfilling its responsibility in once again organizing an uncompromising expo. PALM AV-ICN expo 2022 will overcome challenges to bring to exhibitors a world-class expo.

Besides connecting exhibitors to valuable buyer community, the expo will be host to a vibrant exchange of information through immensely successful PALM highlight features, which provide opportunities for collaboration and networking with leading industry professionals and thought leaders. Highlight features include:



SHOW PREVIEW

Certified AV Specialist Education Course (CAVS):

This three-day course is aimed at providing knowledge manpower. It is designed to provide audio, video fundamentals' knowledge and enhanced troubleshooting skills, while promoting best practices and expertise of systems technologies. This year the course will focus on **Designing Workspaces in Changing Times**.

Demo Qube: Demo Qubes at PALM, provide ample opportunities to exhibitors wanting to demo high-end speakers and sound systems. With restrictions on sound in exhibit hall, Demo Qube is an ideal concept for pro audio companies to demonstrate their products with ease in a private cube structure.

IRAA Awards Winners Felicitation: IRAA Awards are the first ever music awards in India that recognize recording & engineering talent. Since 2006, IRAA has honoured exceptional talent in music, soundtrack recording and mixing in Indian music of albums and movies. At PALM expo 2022, the 2021 IRAA awards winners will be felicitated with mementos.

Lighting Design Showcase: This first of its kind lighting showcase in India, provides platform for creative excellence in the field of live events and entertainment lighting design. The showcase puts spotlight on emerging talent and provides an opportunity to lighting designers from across India to showcase their skill. This lighting-choreography showcasing displays programming skills, innovative original visual imagery and stage lighting design creativity by exploiting latest lighting fixtures and console technology.

Live Rigging Workshop: This feature presents live demos on truss and rigging-based safety protocols, best-practices and, workshops on topics ranging from truss roofing structures, need for ballasts, guywire based cross-bracing to safe truss climbing, fall & rescue techniques and more.

PALM AV-ICN Intelligent Lighting Projection Demo:

This demo highlights new technology that converts any digital projector into beam machine.

PALM Live Arena: One of the most attractive features at PALM expo will be back after a two-year gap with a line-up of some of the best artists, bands and musicians performing live at the arena.

PALM Sound and Light Awards: These awards honour excellence in the stage sound and professional lighting industry. Spread over several technical and creative categories, the awards recognize individuals and organizations for their unparalleled contribution to live event entertainment industry by rendering outstanding products and services in staging, lighting & live sound field.

PALM Sound and Light Summit – Conference & Seminar Programme: This feature encompasses highly informative and educational lectures, panel discussions, seminar sessions, company sponsored product presentations and workshops on relevant subjects to stage, entertainment, events, AV integrations & install and music production industry.

The last two years have been a great disappointment with 25,000+ trade attendees missing out on opportunity to source equipment and network on the show floor and its extensive highlight features. Planning new product launch and developing user community at PALM is what grew business in this region – PALM EXPO DELIVERED BUSINESS. Two-year gap means PALM AV-ICN 2022 will now provide robust show which will revive businesses and connect the most important pro AV markets of the subcontinent to network again.

The expo's purpose this year is to provide stimulus, growth and investment opportunities to exhibitors. PALM expo calls upon the industry to be inspired and make new business contacts only at **PALM AV-ICN expo 2022!**

PALM AV-ICN Expo



IN THE LIMELIGHT ...

Stage Lighting for Theatres and Performance Venues

by Elton Noronha



We delve into the enchanting world of stage lighting for theatres and performance venues, as industry experts offer insights into the history of the art form, the current trends in skill and technology, and the evolutionary trajectory of products and systems responsible for adding vibrancy and magic to on-stage performances.

Wikipedia provides a rather simplistic definition of "stage lighting" as an act of lighting up productions of theatre, dance, opera, and other performance arts, through the use of different types of stage lighting instruments.

The truth, however, is that stage lighting isn't just illumination. It is soulful confluence of design, art, emotion, and subtext. As an audience, if you haven't noticed stage lighting before, you may have taken the emotion it brings in tow for granted. However, once you do notice it and allow yourself to be immersed in its beauty, you'll realize just how much of an impact

delicately subtle and nuanced art form has on the overall experience for spectators.

This art form extends beyond the mundane – transcending mere spatial considerations and invoking the need for equal parts of technical expertise and empathetic maturity – so that the audience may experience the diaspora of emotions of the performance taking place on stage.



Acclaimed Indian theatre lighting specialist **Gyandev Singh** asserts, "The main consideration is for us to be able to provide spatial and emotional context to the performance. To subtly accentuate the theme of the performance through the lighting

design. To be able to highlight the important moments in the performance while also making sure that lighting does not overpower the performers." A graduate from the National School of Drama, New Delhi, Gyandev Singh has worked as a lighting designer with many eminent artists and theatre directors across India, and has also been invited to perform in festivals like The Edinburgh International Festival, The Bon Biennale, Prague Quadrennial, Korzo International Dans Festival, The Internationale Tanzmesse Festival, and Dancing the Gods Festival; to name a few.

Key Functions of Stage Lighting

Lighting design, especially in theatre settings and for performance stages; is expected to satisfactorily adhere to certain key functions, which include:

Visibility: The basic idea is to ensure that stage lighting precisely illuminates the performers and key elements on stage that the audience should see, and keep the lighting off parts of the stage the audience shouldn't see. As German director named Max Reinhardt once said, "The art of lighting the stage consists of putting light where you want it and taking it away from where you don't want it."

Motivation: It is important to ensure that the stage lighting looks as close to natural as possible for the given setting / performance.

Composition: As part of Scenic Design, the designer would ideally attempt to use lighting to accurately portray and/or enhance the visual as thought up by the scenic designer and director.

Mood: Evoking the right emotion within the audience by using the perfect amount of light and kind of visibility

to impact the atmosphere of a production. The idea is to have luminaires lighting each acting area to achieve the desired visibility, to adequately reveal an artist / performer's form and to make sure all elements and performers appear separate and distinct from the scenic background.

Revelation of Form: Deciding the exact lighting design scheme to ensure that the audience experiences only the precise level of 3-dimensionality you want them to see, offers them enough "depth" for them to be emotionally invested into the performance. Some productions may have a "flat" look (not much of shadow and/or elements of depth); whereas others – particularly dance – may have a more sculpted look. For example: if the sets and/or costumes are sculpted and lush, lighting them up well helps to highlight their 3-dimensionality. A case could be made that revelation of form is part of composition or mood; however, it's important enough (in some productions, at least) to be a stand-alone function.

Reinforcement: Perhaps the most important objective of the lighting design is to reinforce the vision of performance as conceived by the writer, director, and producer; in addition to reinforcing the actions / movements of the performers, highlighting key elements of the set, appropriately signifying change in scenes (night to day ... outdoor to indoor ... etc), and emphasizing the costume designs of certain key characters as an when needed.

Punctuation: The blackout at the end of a performance is often an extremely underrated visual experience. When done right, the slow fade to black can prove to be the perfect exclamation mark to cap off a truly extravagant theatre experience.



"As a lighting designer it is extremely important to prioritize the director/ artist's vision for every scene in connection with the overall theme of the performance, and then plan the lighting design keeping in mind the existing technological

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infrastructure available at the venue. Having a clear understanding of these crucial aspects allows a lighting designer to not just gauge the amount of complexity involved in bringing the scene to life for the audience while doing complete justice to the underlying emotion; but also asses the practical viability of deploying different design methodologies to achieve the desired result. For example, the lighting scheme for scenes that involves a performer flying onto stage is completely different when compared to the lighting in scenes that have performers entering from the backstage area. Every movement is crucial to the story-telling process. and illuminating these movements with the right kind of highlight and emphasis goes a long way in creating a wholesome experience for the viewer" affirms veteran Indian theatre lighting extraordinaire **Dhiren Merchant**, whose rich career spans multiple decades of awe inspiring work in theatre and live performances with the widest variety of show producers and artists, and several awards for excellence in stage and performance lighting.

Technology in the Mix



Photo courtesy of Gyandev Singh

Another crucial ingredient to complement the creative and empathetic involvement of all stakeholders involved in bringing the performance together, is technology – namely, the professional lighting fixtures and systems available at the venue for the performance. As tenured and accomplished lighting designers themselves; both Dhiren and Gyandev acknowledge the often understated importance of lighting technology in the grander scheme of putting together a breath-taking performance experience for the audience.

"Lighting technology is the most important key player while designing lighting for a performance. Selecting the right lights, console board can lead to a win or lose situation in designing. The kind of technology depends on the thematic aesthetics of the performance. If it's a grand musical, then I would use more of intelligent lights like moving heads, and LED Colour washes. But if the performance is themed as an intimate experience, I would use more of Profiles, Parcans, and Plainoconvex lights," comments Gyandev as he provides a concise insight on the kind of impact that technology has on his work decisions as a lighting designer for any project.

On the other hand, Dhiren emphasizes a different perspective on the topic as he explains, "With every show producer aspiring to deliver a unique performance experience to the audience; the key differentiating factor in many cases turns out to be the technological infrastructure available at the venue, and also the venue's capacity to include more / different lighting equipment and systems when needed. Such instances arise particularly when the performance involves

several different highly co-ordinated moving elements on stage like flying performers, set peripherals in motion etc. In such situations, we tend to primarily focus on key considerations like: what kind of equipment does the venue currently have that would help us to execute this set up? Are there any trackspot options available? What kind of access do we have to seamless artnet/wireless DMX fixtures? what are the complexities involved in sourcing and rigging additional equipment that is crucial to the design scheme? etc. etc ... A highly adaptable venue that

allows for greater accessibility, flexibility and speed to rig up additional systems and technologies with little to no limitations on rigging weight, power load and distribution – these are the kind of technological considerations that lighting designers like myself ideally look for in a venue."

Performance theatres these days fundamentally employ the use of more generic light fixtures like Par Cans, Profiles and Fresnels, all of which could either be traditional tungsten based or LED based (if one were to consider key metrics like power usage and general maintenance, LED sources have a clear advantage



over tungsten based counterparts). Each of the aforementioned fixtures meet specific requirements within the design gamut.

PAR (or "PAR Can")

The "PAR" stands for "parabolic aluminized reflector," and it's a simple, inexpensive, and popular flood light for a wide variety of performance applications. And adding one to your setup can be a simple procedure—the lamp is placed inside the 'can' housing, a gel is clipped on (if needed), and the fixture is hung or clamped it.

Fresnel

This basic spotlight's name comes from its lens type. Traditionally, these have been used in conjunction with lighting gels to create innumerable colors and atmospheres on stage. This is why Fresnel lighting is known for offering soft and rich colourscapes that make up for most of the 'fill' in stage lighting.

Ellipsoidal Spotlight (Leko)

These lamps are versatile and highly controllable, as they provide a harder-edged, stronger light whose beams can be easily manipulated or changed with shutters, gobos (cut out shapes and patterns), and more. (Note: Basic stage lighting setup can usually be accomplished with a mixture of Fresnels and Ellipsoidal spots)

Gobo

This is a sheet inserted on a frame at the front of the light with a design cut into it. It filters the light, creating a picture effect on the stage. For example, a gobo could be used to create a dappled lighting effect to look like the leaves of a forest, or could be cut to create strips of light onstage which look like the bars of a prison.

Spot

These fixtures offer a hard-edged effect, and are used to light characters or elements on the stage. Coloured filters can be used with this lamp.

Follow Spot

Follow spots are large, oversized, separate, and expensive spotlights. They're generally run by a spot operator whose sole job is to maintain, point, and focus the spotlight.

Beam Projector

A beam projector is a lensless reflective lamp with a tight, focused beam that is often used to create a hard, dramatic wash of light from above the performer.

Ellipsoidal Reflector Floodlights (Scoops) and Box Floods

In general, these produce a clear wide-angled light, but there's little control over the spread of the light.

Coloured filters can be used with these floodlights, which are typically deployed to light the backdrop, to provide broad washes, or to illuminate scenic elements on stage.

Strobe

These are a special type of flashing light, used for special effects – more often to give the effect of old movies. Traditionally, strobes have been known to produce a jerky effect on the movements of actors when used on its own.

Striplights, or Lighting Strips

These rows of lighting elements are typically used to light backdrops, scrims, and cycloramas, and are often wired into multiple circuits for greater dimmer control from the lighting console. Over the years, LED strip lights have become increasingly popular, as they use less power, but they've also been noticed to be not as powerful in strength.

In addition to all of the product types mentioned above, venues also require high performance and efficient lighting console systems to capably operate and control the various lighting fixtures that would usually be needed for contemporary performances.

That being said, it must be noted that things weren't always as easy as they seem to be right now.

Theatre Stage Lighting Technologies Over the Years

In the earliest recorded days of stage performance in human history, people were required to be ingenious to illuminate and shade the action being played out on stage. Greek theatre, for instance, had most plays staged in daylight, to simplify production and to take the fullest advantage of the sunshine. Fast forward to the time of Shakespeare, and you'll notice that stage productions had lighting that encompassed everything



from the candles behind the footlights to the use of torches, candles, and rudimentary coverings to allow for more control of the lighting from scene to scene. And the turn of the industrial revolution actually ushered in the creation of enterprising lighting products that helped stage performances be illuminated like never before.

Some of the lighting techniques that were developed in the mid 1920's to the early 1930's were noticed to be deployed in active use even in the mid 2000's and 2010's. This includes the extremely popular McCandless System developed by Stanley McCandless, which can be described as a 3-point system: 2 lighting fixtures are placed in front of the subject and 1 fixture behind. The front fixtures are located at a 45-degree angle to the left and right of the subject and at an angle of 45-degrees above the subject. These locations illuminate the features of the subject well and ensure they appear natural and have 3-dimensional form. The angles of the light provide definition of form without causing deep. dark shadows under the eyebrows, nose, or chin. The location and angle also provide visibility as the subject turns their head from side to side. Colour and intensity added to the front lights will provide visibility and definition. McCandless recommended using a warm colour in one front light, and a cool colour in the other, so that the colours would blend for a natural appearance and contrast with each other to provide definition. The third light, or 'backlight', is placed behind and high overhead the subject, without being directly over the subject or shining in the audience's eyes. This causes the subject to stand out from the background and further defines their form by lighting the back of the head and top of the shoulders. The colour of the backlight is usually "colouring the shadows" cast by the front lights, however, a halo effect can be created by using intense, warm backlight.

Needless to say, the rapid evolution of technology in all spheres of business has had an evident impact on professional lighting technology for theatre and performance applications; with theatre management these days paying keen attention to stage lighting technology as a key ingredient to keep audiences invested in performances and subsequently retain patronage.

Tech Considerations for Modern Day Theatres



Daniel Loh, Technical
Director at The Star
Performing Arts
Centre, Singapore,
provides an insight
into the prerogatives
that performance
theatres across the
globe hold dear while
considering stage lighting
technologies for their

venue, as he comments, "Over the years, one of the key changes in our prerogatives in choosing lighting technologies includes the shift to LED based fixtures, mainly because LED sources these days have become brighter with better quality of light. Another key area of consideration is lighting networks. Advancements in networking technology has allowed expansion and raise the ceiling of limitations that lighting engineers are facing with DMX Protocols. It allows for fixtures to be placed at various location points, and controlled seamlessly without the need for long cable runs. Also, multi-source lights have become mainstream and more requested in riders these days. These are no longer effect lights but an integral part of lighting designs. That apart, metrics like high intensity and vibrant colours have now been replaced by high CRI and accurate colour rendition - which lighting designers these days consider to be far more important, especially because every other performance event these days is recorded/livestreamed. And finally, sustainability is another key metric that we look for while choosing technologies, as the idea predominantly is to lower long term costs - both in lamp replacement as well as electricity consumption. Another aspect where sustainability of technologies plays a vital role is that where in the products need lesser maintenance. Needless to say, this has a direct impact on equipment and manpower cost. So, in a nutshell, for performance theatres, some of our key selection criteria of lighting technologies includes reliability, maintenance cost and lamp source.

As independent lighting designers with a penchant for theatre productions, both Gyandev and Dhiren agree



on the fact that sustainability has emerged as a key consideration for performance venues when selecting lighting infrastructure for their space.

Gyandev asserts, "As a performance venue, I believe it is always better to have a mix of different technologies in your inventory because this would cater to a wide variety of performances, be it theatre, dance, or musical concerts. At the same time, I think in this day and age performance arts centres should be involving issues of sustainability in their plans. In most of the performing centres, the dialogue has just started and small changes are being seen. That being said, the change needs to be wider and faster."

Dhiren too shares his views on the topic, while adding some more crucial points of consideration, as he informs, "I believe the two most crucial aspects that performance centres these days focus on while selecting their technological infrastructure are: a) overall cost implication, and b) maintenance. Keeping this in mind, it becomes crucial to select equipment that is futureready with a longevity value of a minimum of 5 years in terms of usability. These products must ideally be easy to use and maintain, and also easy to integrate within the space, with a special preference given to those technologies that offer flexibility in terms of rigging and control. Plus, an added benefit would be if the products could be deployed for a larger range of performances - which would help reduce the cost of additional rentals and also the time involved in setting up the additional equipment. And technologies that prove to be efficient in terms of power consumption and networkability further enhance the sustainability quotient of the product offering, which in turn makes it more appealing to the end users and theatre management. Finally, venues themselves must ensure that ample arrangements and options are in place to accommodate for additional rental equipment if and when required, and also to ensure that regular upkeep of the installed equipment is adhered to."

An Ever-evolving Techscape

Without a doubt, several world-class industry leading brands have been investing a considerable amount of time, effort and monetary resources into developing products and technologies that can efficiently suffice user requirements while providing venues with solutions and capabilities that ensure sustained patronage and brand-loyalty.



"Lighting has become more important to telling the story on stage as LED technology has opened more creative opportunities to designers. So, the ability to create special effects without distracting from the narrative on stage is more important today.

Also, given the increasingly important role that colour is playing in stage lighting, designers want fixtures that allow them to create seamless colour changes guickly and easily. Then there is the question of quiet operation. Now that technology has given us silent and nearsilent fixtures, we want to avoid lights that distract with sound. We offer superior performance in compact, LED fixtures that feature specialized light engines to emit an outstanding quality of light, are easy to hang, have low maintenance, and in many cases operate silently," confirms Caroline Chauvet, Global Brand Manager Chauvet Professional, as she proceeds to reference some of the new solutions from Chauvet Professional including the new award-winning Maverick Silens 2 Profile, a 560-watt LED moving fixture that is convection cooled (completely fan-less), which means that it quite possibly is one of the quietest moving fixture ever released for theatre and studio applications.

Loaded with an array of performance features, such as customized optics with variable CMY + CTO colour mixing for superior, luscious colours and a +/- green adjustment to ensure perfectly rendered skin tones; the unit is also being capable of superb animation effects via 1 rotating, 1 static gobo wheel, 1 prism, fully variable frost and an emulated red shift for a tungsten punch. The Chauvet Professional Maverick Silens made its debut at the iconic Louis Vuitton Foundation in Paris, and has been installed at major theatres and studios, worldwide including the Matsumoto Performing Arts Center in Japan, and CBC Radio in Canada.

Regular interactions with users and end-customers also proved to be a key learning exercise for ETC, as the brand pivoted to developing products and systems to capably meet exigencies like the need for more reliable and stable systems that could assure consistent

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high-performance output even in the most demanding situations; the need for lighting systems (including data distribution, e.g. DMX distribution system or Networking) that are easy to use and convenient to set up; the need for fixtures to be light in weight, easy to handle, and easy to manoeuvre / operate; and finally, the need for lighting consoles that offer quick and efficient programming, control and recall capacities.



Desmond Yim, Sales
Manager, ETC Asia
elaborates, "ETC has
worked diligently to create
and offer products that
have gained repute for
its quality and reliability;
and most of the venues
that feature ETC systems
have zero failure reports
even after several years of

continuous use. For example, our power control systems very rarely experience failure of any sort, even after long hours of continual operation. Our brand boasts a very strong technical support regime through our regional offices around the world, coupled with an extensive dealer network in most of the countries around the world. This allows us to maintain consistent interaction with our users and end customers across the globe. Plus, a mature ASC (authorized service provider) network together with our 24hrs phone support helps us ensure quick and timely response to assist users with immediate and accurate support when they need it. While ETC is very committed to creating and offering new products and technologies to the global market, we are also working very hard to improve the sustainability value proposition of our equipment. Every year, we invest a lot of resources into R&D of new products as well as the enhancement of current offerings, such that our portfolio comprises technologies that would best fit our users' requirements in term of ease of operation and maintenance. We're committed to providing great new products that save on crucial time and effort in terms of setup and programming time, while also improving the overall user experience and delivering phenomenal performance for the audiences to enjoy."

Referencing some of the practical application of ETC products within performance centre settings, Desmond

reveals that the Chiayi City Music Hall in Taiwan was looking for a sustainable and environmentally friendly lighting solution; which they found with high-quality products from ETC and reliable services provided by the local dealer, CINE Vision. The Chiayi City Music Hall has been upgraded with ETC's Source Four LED Series 3 Lustr X8 with CYC adapters and SolaPix. The cyclorama proves to be the focal point for many theatrical lighting designs, as it creates mood and emotion for every performance. The full-colour Lustr X8 array offers vivid and nuanced colour, much to the amazement of the venue management who affirm that the effect is similar to that observed while using traditional tungsten fixtures with gel.

On the other hand, with the evolution in consumption patterns of performance arts over the years leading to modern day theatres now handling multifaceted multimedia productions accompanied with live streaming - all of which require different source characteristics - there came about a unique need for singular systems / solutions that could offer a wider range of performance characteristics without compromising on quality and/or setup time. Robe affirm to be a leader in efficiently fulfilling this gap, with the introduction of their 'Transferrable Engine' technology. Designed, developed, and manufactured at Robe's in-house factory in Europe with complete control over the patented product, this technology allows Robe's fixtures to leverage their quick engine changeability feature to choose between the HP (High Performance) engine mode that generates the highest output in terms of brightness, or the HCF (High Colour Fidelity) engine mode that affords exceptional colour rendition via its inherently high CRI of 96. These data capturing, self-referencing engines can be changed swiftly and accurately in a matter of just five minutes, requiring no special tools, skills, alignment, or calibration; and at a cost that is significantly lower than conventional LED engines; as confirmed by the brand.

The wonders of the 'Transferrable Engine' technology can be seen in Robe's new T11 Profile, Fresnel and PC, which has been built on the exceptionally popular MSL (Multi-Spectral Light) concept, and features fast interchangeable front lenses which translates to users only needing one base unit, thereby reducing inventory size. Robe's MSL-TE 350W LED source generates over 9,500 lumens from the front lens. A virtual CCT of 2,700K



to 8,000K, and tungsten lamp emulation, ensure precise colour control. Skin tones are perfectly rendered due to the T11's exceptional CRI of 95; while data harvesting provides comprehensive engine information using NFC technology via the Robe Com app. High-definition optics provide a wide 5-50-degree zoom range for the profile (5-60-degrees for wash types), so an array of different beam angle lens tubes is not required. Plus, the unit also includes built-in shutters, frosts, an optional drop-in module with motorised iris, and static as well as rotating gobos.



Offering an insight into some of other advanced technologies that the brand has introduced for the theatre and performance segment,

Dave Whitehouse, Theatre Products Manager from Robe apprises, "Precision theatrical lighting is very

disciplined in terms of accuracy, wherein features like shutter modules, zoom, focus movement control, must accurately repeat the precise settings on every single lighting cue. Our products focus on precisely delivering key features and capabilities like high quality beam and light output; and accurate and consistent reproduction of colours in terms of hue, saturation and temperature. Robe provides both multispectral and white light sources to give the designer the source most appropriate for their task. Plus, we ensure our onboard fixture controls and software are both easy to navigate and user friendly. And perhaps more crucially, we have developed special noise reducing technologies, such as AirLOC which greatly reduces ambient noise generated by cooling airflow through the fixture. As the market evolves, Robe aims to produce new engines and fixtures that will allow users to take advantage of all future developments, with dramatically increased fixture life."

Chauvet Lighting

ETC

ROBE Lighting

LIVE

AUSTRALIA

Adelaide Symphony Orchestra Goes Big with L-Acoustics

Novatech deploys K2, Kara, and Syva for Adelaide Symphony Orchestra's return to large-scale commercial audiences at the inaugural Festival of Orchestra



Beneath starry skies at the Adelaide Showground, the first-ever Festival of Orchestra (FOFO) featured six themed concerts performed over ten nights by the Adelaide Symphony Orchestra (ASO). With grant support from the Australian government's RISE fund, a program to reignite the arts and entertainment sector, ASO's goal for FOFO was to showcase the symphony orchestra in new surroundings and through diverse performances. The outdoor series of concerts saw ASO perform music ranging from electronic dance, classical, Broadway, and rock 'n' roll to the film score of the award-winning Blue Planet documentary series.

Marking its return to large-scale commercial audiences, ASO turned to **L-Acoustics Certified Rental Partner Novatech** to flawlessly deliver the novel outdoor orchestral experience. Since establishing a formal production partnership with the Symphony six years ago, Novatech thoroughly understands ASO's production values and standards and has developed a joint commitment to presenting high-quality products for ASO's diverse audience.

"The leap into an outdoor amplified situation can be daunting. But because we've built up a rapport with ASO on several large projects over the years—including



the southern hemisphere debut of L-ISA in a 2018 performance of Harry Potter and the Prisoner of Azkaban in Concert—our partnership was a perfect fit for the Festival of Orchestra," said Ashley Gabriel, Director of Sales and Marketing at Novatech.

The event posed multiple challenges to the Novatech team. First, the stage was positioned on the green pitch of the showgrounds, but due to social distancing



regulations, an adjacent grandstand was left empty. So SPL needed to be precisely oriented over the pitch, while avoiding the empty metal stand area. Next, the festival's timing being at the cusp of summer with weather forecasts swinging from warm to cool throughout the 10-day event meant that sound delivery and performance would require constant monitoring.

Novatech used L-Acoustics Soundvision software to design a suitable system accurately based on the layout of the area and its surrounding structures. For the series of shows which featured a wide dynamic range of performances, from electronic to film soundtracks, the team designed a system around L-Acoustics' K2, relying on its ability to reproduce diverse content accurately.

The system comprised L/R hangs of 15 x K2 per side. 2 x centre arrays of 6 x Kara each, provided coverage to the centre audience area. Filtering specific content to these centre arrays allowed Novatech to achieve an immersive experience in the mix. A total of 16 x SB28 subwoofers ground stacked in groups of 4, distributed across the front of stage provided power to the low-end.

A cardioid configuration helped mitigate low-end spill on to the stage, where sensitive orchestral microphones were in play. 6 x Kara boxes deployed across the front



of the stage acted as in-fill, while 6 x ARCS II were used as out-fill. The delay system consisted of 26 x Kara distributed across four delay towers, with additional support by 4 x Syva at the rear of the arena space. The orchestra received pristine, consistent sound monitoring through 28 x X8 and X15 HiQ. A total of 45 x LA8 amplified controllers drove the entire system.

"As with everything L-Acoustics, getting consistent sound was not an issue at all," enthused Novatech's Gabriel. "It was a dream to integrate speakers across the system for clear, concise, and high-quality sound output. Being able to meld K2 with Kara seamlessly with the addition of Syva is one of the reasons we're a purely L-Acoustics production house," he said.

Feedback was positive, from both the ASO team and sound engineers mixing the programme throughout the 10-day event. "Orchestras are unique beasts with special needs; Novatech has been brilliant at understanding those and delivering on them. It's hard to imagine how we would've delivered this project without



a local partner like Novatech on the ground," said Vince Ciccarello, the Managing Director of the Adelaide Symphony Orchestra. "They've been able to plan, meet, get onto issues as they arise, and be out on-site regularly with full attention to detail, which has been critical for such a big undertaking."

Novatech

L-Acoustics





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DUBAI

Equipson and Fantek Staging Make Their Mark at Expo 2020 Dubai

Equipson's award winning LightShark range took centre stage at the show



Designed to showcase the best of art, architecture, innovation and technology, Expo 2020 Dubai featured more than 200 pavilions from all over the globe. It was the largest exhibition to be held since the pandemic and the first time a World Expo was held in an Arab country.

Equipson's award winning LightShark range took centre stage at the show when it was used in both the Spanish and Angolan Pavilions for DMX control of different exhibition and stage spaces. The Spanish Pavilion showcased an extensive cultural program on different stages and used LightShark technology throughout to control lighting and effects. The diversity of the performances made it possible to show professionals and technicians the features of LightShark software and its various control surfaces.





"The software's FX engine allowed us to integrate the lighting with the rest of the audiovisual systems in an agile and simple way," said Marvin Ryan, a technician from the Philippines and Head of Lighting at the Angola Pavilion.

His views were reinforced by Juan Gonzalez, Technical Manager for events at the Spanish Pavilion, who highlighted the simplicity of LightShark's user interface. "With hardly any previous experience in handling the system, it was very easy to start operating it almost from day one," he noted.

LightShark's range of multiprotocol products have already revolutionised the entertainment industry by delivering powerful tools that are not limited by their features. With LightShark, lighting engineers working in all types of venues – from small theatres to large stadia – can control up to 8 x DMX universes and 4000+ DMX channels, all completely integrated via smartphones and tablets. In addition, the range is fully compatible with other manufacturer's equipment because the products work with industry-standard DMX and Artnet lighting protocols, as well as any Operating System.

Positive comments abounded, as highlighted by Muhammad Tariq, a Lighting Designer and Operator from Pakistan, who said: "Very intuitive and easy to use, it is an ideal solution for freelance technicians working for different companies."



Part of the Equipson Group and a world leading manufacturer of tower lifts, trusses and stage platforms, Fantek Industrial also played a key role at Expo Dubai 2020. In the Spanish and Angola Pavilions, the company supplied all the rigging and structures needed to create

stunning audiovisual displays and performance stages. The Angola Pavilion paid tribute to its indigenous traditions by taking inspiration from Sona geometry - the ancient art of sand drawing that has been used by generations of its citizens to transfer knowledge. Using interactive spaces and a multimedia show that combined different audiovisual technologies, the Pavilion highlighted how traditional wisdom can be used as a starting point to develop innovative solutions to local and global problems. The Angola Pavilion's central square also featured a Fantek stage where leading African artists host daily performances.

AV service company, EIKONOS was responsible for designing and installing the Pavilion's technical and audiovisual infrastructure. Project Manager, Andrés Aguerri, noted: "Having the direct support of the manufacturer from the early stages of the project allowed us to develop customized solutions that undoubtedly make the whole assembly easier."

His view was reinforced by EIKONOS Head Rigger, Justin Abio, who added: "Fantek's range of accessories and components allowed us to place each element, each projector and each spotlight in exactly the right place."

Fantek products were also used in the Spanish Pavilion, which highlighted sustainability and the historical connection between Spain and the Eastern World. The multipurpose hall was built with Fantek staging and can be used for a multitude of corporate and business events. During the Expo, it was the focal point of performances by prominent artists such as guitarists Miguel Trápaga and José Maria Gallardo del Rey, Quinteto Aulos, Artefactum, Rodrigo Cuevas and Mago Migue, among others.

Iber de Vicente, Head of Production of Cultural Activities of the Spanish Pavilion, added: "Each country tries to show, through its Pavilion, the best of itself and that also includes stage and audiovisual technology. Spain is proud to have the equipment of manufacturers such as Fantek and Equipson as part of its display."

Fantek

LightShark

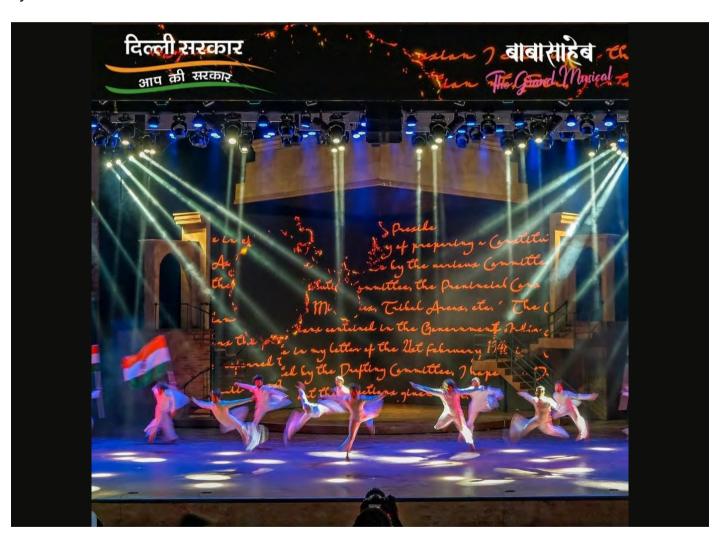


INDIA

Social Commentary with a Treat to the Senses

World-class live event technologies and systems astutely reinforce the mesmerizingly profound storytelling of 'Babasaheb: the grand musical' that left Delhi in awe

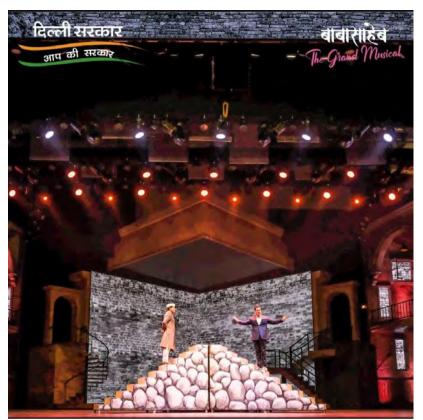
by Elton Noronha



Dr. Bhimrao Ramji Ambedkar, or Babasaheb as he is more commonly referred to with reverence - is a figure in history whose contributions helped shape India as the country we know it today. The man was an Indian jurist, economist and Dalit leader who headed the committee drafting the Constitution of India from the Constituent

Assembly. He also served as Law and Justice minister in the first cabinet of Jawaharlal Nehru, and inspired the Dalit Buddhist movement in the country.

Honouring his life work and legacy, the Government of Delhi organized, for the first time in India, a grand



musical on life and teachings of Dr. B.R. Ambedkar, aptly named 'Babasaheb: the grand musical', which took place from 25th February 2022 to 24th March 2022 at Jawahar Lal Nehru Stadium, and was kept open to the public at no ticket cost.

Directed by **Mahua Chauhan**, the musical play spotlighted the life of Dr. B.R.Ambedkar – his thoughts, ideas, ideology and the struggles in his movement for social justice – all of which have undoubtedly left an indelible mark on India as a nation as we see it today.

With the first show inaugurated by Delhi's Chief Minister Shri Arvind Kejriwal; the 120-minute extravaganza was staged twice daily at 4 pm and 7 pm, and was divided into two parts featuring defining moments of Babasaheb's life — his childhood, experiences as a 'Dalit' lawyer, role in India's freedom struggle, ideological differences with Jawaharlal Nehru and Mahatma Gandhi and his demise in 1956. The overarching narrative, however, comprised the discrimination he faced because he was from the Mahar caste (a Dalit community predominantly from Maharashtra).

Teekam Joshi, the principal narrator of the musical, walked the audience through Babasaheb's life, set against the tune of rock band Indian Ocean's compositions with Vineet Panchhi and Kausar Munir's lyrics; while actor Ronit Roy enthralled with a powerful performance as he portrayed the role of Babasaheb himself. Award-winning reputed media personality Roshan Abbas served as the Creative Producer of the musical; while Samit Garg – CEO and co-founder of E-Factor Experiences Ltd (one of India's leading event planners) was entrusted with the responsibility of bringing the grand production to life in his role as the show producer.

In addition to being an exemplary recreation of the life and times of Babasaheb, the musical, in all its glory, was a spectacular confluence of high-quality production value and some truly mesmerizing technical sagaciousness. The performance setting in total, which comprised a 100 ft. stage with a 40 ft. revolving set, was

designed and executed to perfection by renowned **Art Director Omung Kumar** – extending a truly international theatre experience to the audience.

Reports suggest that the initial plans of the show involved the emphasis of several aerial acts in addition to the automated movement of scenery, props, and projector screens / scrims on stage. And to ensure these tasks were executed with superior precision, the show producers and management on-boarded the services of **Natura** (Natura Outdoor Education & Training Services Pvt Ltd) who are the country's leading experts in the field.

Per this initial discussion, Natura had planned to install 2 sets of motorized Kirby Track systems along with variable speed winches (1mtr to 50mtrs per min) and fixed speed motorised Pendulum systems to ensure all the planned Performer Flying spots were executed in the smoothest and most seamless manner, while ensuring complete safety of the performers, crew and the set as well. Alongside, the team were to install a total of 5 fly bar systems that would be responsible for flying the projection screens, props and scenery (in and out



of scenes), all of which would be controlled by fixed speed winches capable of traversing 15 mtrs / min while being able to lift loads of up to 150kgs per system with a safety factor ratio of 2:1. It was also decided that all the systems would be controlled by dedicated operators that would be stationed in the wings right next to the winch mount, which would allow them a clear line of sight of the their respective performer and also allow them to take over manual control of the system if the need ever arose.

However, over the course of the planning and finally after erecting the ground support truss for the performer flying systems, team Natura realised that there just wasn't enough space available at the venue to run multiple systems. So following a few rehearsals and demo shows, and after serious deliberations with the production crew and creative crew respectively, it was cumulatively decided to eliminate a lot of the originally planned systems and cancel all performer flying systems. This meant that the final shows would feature only the fly bar systems as originally planned. These systems, however, proved to be an integral part of the entire show, as the precise movement of scenery and projections screens / scrims ensured the audience never missed a beat of any of the drama and storytelling that unravelled on stage.

The period of planning and rehearsals highlighted the need for certain key changes to some of the other crucial technical infrastructure – which included the world-

class pro audio systems, lighting fixtures and systems, LED screens and projection mapping technologies – all of which were supplied and astutely commissioned by Delhi based Audio Design (one of India's leading rental solution providers for live events of all scales and themes). According to inputs from the Audio Design team, the working crew on-site operated in 'full-throttle mode' to ensure these key systems were aptly put together for the show rehearsals and demos in the relatively short timeframe that was allotted to them; while also ensuring that any and all changes to the desired inventory were processed swiftly in order to avoid any form of delays. And these efforts undoubtedly paid rich dividend; as the flawless execution of the various sound, light, LED and projection systems played a definitive role in reinforcing a truly immersive environment for the audience to loose themselves into.

Lighting, which from a technical as well as creative stand-point, was consistently appreciated as one of the stellar aspects of the show, emphasized the prodigious use of PAR 64s as main stage face light, along with a myriad of fixtures like the Osram LED PARs, Martin Mac Aura Moving Head washes, Sholite moving head sharpies, a 2.5KWA Follow spot, and more; with the entire fixture rig controlled with great precision through a grandMA Lite console at FOH.

Gyandev Singh – one of India's most renowned lighting designers for theatre applications – was entrusted with the responsibility of conceptualizing and executing every last detail of the lighting design for the show. Gyandev affirms that the brief he received from the creators and producers of the show was to ensure that the lighting design maintained the right balance of emotion and grandeur, while augmenting the message of the musical, and also ensuring that it did not overpower the narrative or the performances in general.

"The most challenging aspect was the balance that I had to maintain between the lighting being bold and dynamic but also subtle enough to not overpower the actors or the scene itself. It is rather easy to design lighting that's flashy and loud. But for a musical of this scale and sheer emotional value, the trick was to design the lighting in such a way where sometimes lights would be loud and in your face, but for the most part, it would be subtle and nuanced. I strongly believe this was intrinsic to the



narrative of the performance, and achieving this unique balance, in my opinion, was the toughest thing to do as a chief lighting designer. From the technological point of view, my main concern was to have fixtures that could be used in a multitude of different ways within the same performance, and to make sure the design scheme was planned in a manner that allowed for the equipment to be rigged and made ready within the stipulated time. It was of crucial importance to ensure that the lighting design contributed efficiently to the grandeur and spectacle that the musical deserved to be. For this, I chose to use a mix of generic and intelligent lights - a lot of moving heads (DTS CORE) along with LED pars/washes (DTS Nick Washes and some Martin Aura's) but also generic lights like Profiles and PAR cans. The generic fixtures were used extensively to light the faces of the actors and dancers as it offers this really amazing warmth to their skin. In many scenes, the washes and gobos were only used to create an ambiance subtly, with the main lighting offered through the use of profiles and PAR cans. In instance where there was a need for the effect to be more dramatic and impactful, for example a scene with fire; I went all out with the moving heads. But then again, there were certain tender and emotional scene with few actors onstage, which is where I had to be very mindful of the emotional quotient of the performance and keep the design more subtle and nuanced" he elaborates.

Complementing the brilliant lighting scheme to near perfection was the multitude of high-performance world-class LED panels that adorned the stage; with the Audio Design team deploying fine pitch LED screens to encapsulate the set from one edge to edge (also including the arch, the set windows and the set ceiling!). This arrangement created an enigmatic backdrop that further enhanced the overall story viewing experience no doubt, but also managed to hold the audience' attention even when there were no actors present on stage. Multiple units of the Christie Roadster J-series 20,000 Lumens full HD projectors were deployed to ably support the projection video sequences, static imagery, and more; all of which was controlled through multiple Watchout servers. The presence of the extensive LED screen reinforcement, coupled with a magical exhibition of projection mapping, extended a truly unparalleled visually captivating atmosphere that perfectly

complemented the brilliant storytelling on stage, which was packed with emotion, drama and action.

And completing the technical gamut was the world-class sound system installed by Audio Design for the event, which involved deploying the **L-Acoustics K2 system** as the main PA along with multiple numbers of the **L-Acoustics SB-28 subwoofers**; while also deploying the **Arcs 2** system from L-Acoustics to act as the centre fill reinforcement. On-stage multiple numbers of the **X15 HiQ** coaxial enclosures from L-Acoustics served as the on-stage monitoring solution – with the entire loudspeaker system in total powered through multiple units of the **LA8** high-performance power amplifiers from L-Acoustics.

According to team Audio Design, the main intention behind deploying an "all - L-Acoustics loudspeaker system" was to ensure that the every seat in the audience (as well as the performers on stage!) enjoyed a homogenous sound experience, with key emphasis maintaining consistent coverage and uniform tonal signature throughout the venue. Much to the delight of the working team, this move worked precisely to plan, with audiences being treated to an impactful soundscape that was every bit as soulful as the performances were. The show was mixed to precision from FOH which sported the use of the industry workhorse Yamaha CL5 audio mixer, with several audio channels being active at any given point, including a total of 20 headset microphones which were provided to the various artists for their respective performances.

Navneet Wadhwa, Director, Audio Design, shares a comment stating, "It is indeed a great honour for us to have had the opportunity to be a part of such a prestigious project. I'm extremely proud of our team, who exemplified great passion and dedication to their craft, and to the promise of bringing together a comprehensive technical solution that reinforced an awe-inspiring musical experience that paid homage to our respected Babasaheb Ambedkar."



ETA SPOTLIGHT is a heart-to-heart with industry professionals from across Asia, as they discuss their foray into the business and their journey thus far, while sharing their honest opinions about key aspects like market trends, technology, upskilling and more...

Please provide us with a brief about yourself.

My name is Lakir Dilip Mehta, and though I do not have a nickname so to speak, I do have a unique recognition on social media platforms where most of my posts feature the tag #myshowmymix which represents what I do for a living. I'm freelance live sound engineer by profession, and have been working on events independently and with a few renowned artists for over 5 years now. My last full-time employment stint was with J Davis Prosound and Lighting ,Bangalore – one of India's leading rental service providers for live events – where I worked as a sound engineer; and my journey within the industry began almost 9 years ago after I completed a course in studio mix engineering, during which I realized I was far more fascinated with the dynamics of live performances than I was with that of studio work. So I decided to make the transition, and took up an internship at a reputed local rental company in Pune and began working from basic system setups - eventually graduating on to live mixing.

What got you interested in getting into the industry?

Honestly, I've always been passionate about music. A deep dive into understanding how music is created professionally, is what opened my eyes to the world of sound engineering. And ever since, my fascination with the craft is what has kept me interested in carrying on strong as a part of the industry.

What are your current views about the industry?

My experiences so far have been largely positive; so I genuinely have only good things to share about the industry. On the whole, our technical services fraternity is really special. We have so many talented professionals working together, sharing their

knowledge, experience and expertise to create magic on stage. The work culture is amazing, and I've always noted that my seniors and crew members have always been supportive and helpful. Over the past few years, there's been a conscious effort to bring in a greater amount of structure and standardization in the way we do business – on the field and off it as well – and I believe this move will only help our industry grow and prosper in the years to come.

What is your most memorable experience and why?

I have to say that the experience and knowledge that I gained during my time at J Davis Prosound & Lighting has played a vital role in shaping my career as it stands today. I will always be grateful for the wisdom and knowledge that my then boss Santana Davis shared with me, and for all the opportunities he extended towards me while I was a part of the company. Also, the mentorship of many other senior engineers who were kind enough to help me through every turn I took. Some of the work memories that I will forever cherish are the times I spent with the team working on mega concert productions for world-class artists like Slash, and Dire Straits. Also, the several large-scale music festivals that we worked on together. Those were some truly special times. Talking about my work as a freelance mix engineer perhaps the most memorable moment for me was the day that Maestro Niladri Kumar ji asked me to come onboard as the touring engineer for his band. This actually

SPOTLIGHT

happened at a random gig in Pune where Niladriji was performing and I was invited to be the guest engineer for the event. Niladriji was extremely pleased with my work, so much so that immediately after his performance we had a quick meeting where they presented the offer to me, and I accepted gratefully.

What was your worst experience and why?

Like I said earlier, my experience within our industry has been largely positive, so I can't really speak of any "worst experience" really; although I will mention that there definitely is a "price war" between freelancers (and also between rental companies), which sometimes turns out to be quite unhealthy for the rapport and equation that freelancers share with each other. This trend has also made it extremely hard for the technical services fraternity to grow, especially in terms of revenue and scale of work.

How exactly has the evolution in technologies impacted your line of work?

The adoption of the latest in live event technologies and highly efficient workflows has now made working on concerts and live events easier than it ever has been before. System engineers and rental companies are now able to concentrate their energies into designing amazing systems that sound as good on day 1 of tour as they do on day 10 of the same tour. That's something truly amazing. Also, the fact that rental companies here in India are equipped with the same kind of world-class technologies that's available in all of the advanced countries – means that we're essentially equipped with all the capabilities to pull off world-class megaproductions that could compete with any other on the planet.

What are the products / technologies that are absolutely crucial to your workflow? Do you have a personal favourite among them? If so, please let us know why.

For me personally, it is extremely essential that the event I'm working on be equipped with a high-performance console that can ably support all the channels needed for the artist/band performance; and also offer enough headroom. I personally prefer consoles from AVID or DiGiCo. That apart, I prefer that my artists work with a particular set of microphones, which I have found through experience to best suit their particular style

and genre of music and performance. For example, my go to microphone for tabla performances specifically is the Sennheiser E 614. On the other hand, I also like the performance value delivered by the drum kit microphones from Audix, which is why I tend to choose these for any broad-based percussion performances.

In your line of work (specialisation), have you noticed any new trends in terms of workflow / technologies etc that you feel could revolutionise the future for specialists like yourself? If so, please us know.

I guess I'd say that I've noticed a fair bit of bands these days paying more attention to the overall production value of their performances, which includes visuals, lighting, sfx etc, and also demand for multitrack recordings when doing live concerts. These of course are hugely positive signs, especially when you consider that fact that it allows for each performance to be leveraged as a unique experience in itself for the fans and audiences.

Do you have any Hobbies outside of work and what is it?

I do love travelling and playing badminton when I feel the need to unwind; and I also love catching up on music and performances of bands and artists that I aspire to work with someday. Enjoying their work as a fan, somehow continues to fuel my passion for music – which for me has always been at the top of my favourites list.

What did you do during the COVID-19 period?

Oh, I had a bunch of time to try and learn new aspects of skills related to live sound engineering and catchup on some potentially game-changing technologies. Some of the leading manufacturers and brand distribution partners offered freelance engineers like myself the opportunity to partake in a series of extremely informative and engaging training seminars and workshops, and I'd love to extend my thanks and gratitude to them for helping us ensure that we continued to stay connected to our passion, even through those challenging and testing times.

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