LIGHT & SOUND INTERNATIONAL • JULY 2022
ENTERTAINMENT • PRESENTATION • INSTALLATION

LSI

www.lsionline.com

DIGITAL EDITION

IN THIS ISSUE:

Event: Platinum Jubilee
Celebrations fit for a Queen

Festival: GALA '22
Ibiza comes to Peckham

Tech: Cyberlight LED
High End Systems updates

Life of Pi

An extraordinary adventure on stage

EVENT: EUROVISION SONG CONTEST, ITALY • INSTALLATION: YORK ST JOHN'S CREATIVE CENTRE
PRO AUDIO: FLEXIBLE THEATRE SOUND • RIGGING CALL: DOUBLE BRAKES • PRODUCT NEWS
TOOLS FROM WITHIN: PANLAB • PROFILE: FOH ENGINEER, EMA GAZDÍK - AND MUCH MORE . . .

plasamedia

Martin®

The Martin ERA 800 Performance packs a full lighting rig of features into a powerful, cost-effective LED profile that's bright enough for stadium-size applications, yet versatile enough for small-scale productions. The 800W white LED engine of the ERA 800 delivers the pure precision and performance our Danish engineers are famous for, giving you all the tools need to bring your ambitious designs to life. A light that's bold, bright and right on budget? Now that's brilliant!

ERA 800
Performance

EXCEED EXPECTATIONS
NOT BUDGETS

LEARN MORE:

© 2022 HARMAN

The "Yes" amp.

It's not just that the 5D has integrated audio networking. Or flexible output power sharing. Or that you can easily hide it. You're saying "yes" to more. A d&b system that provides the scalability, flexibility, and reliability needed for installations. Still, the 5D is a very impressive amplifier.

Discover more: **dbaudio.com/5d**

The art of creative engineering.

d&b audiotechnik®

Photos: Thomas Peham (background), Alexander Popov, Benjamin Child, Donny Jiang, Hulki Okan Tabak, Marcos Luiz, Pablo Merchan-Montes, Rodan Can, William White (all unsplash)

contents

FEATURES IN THIS ISSUE

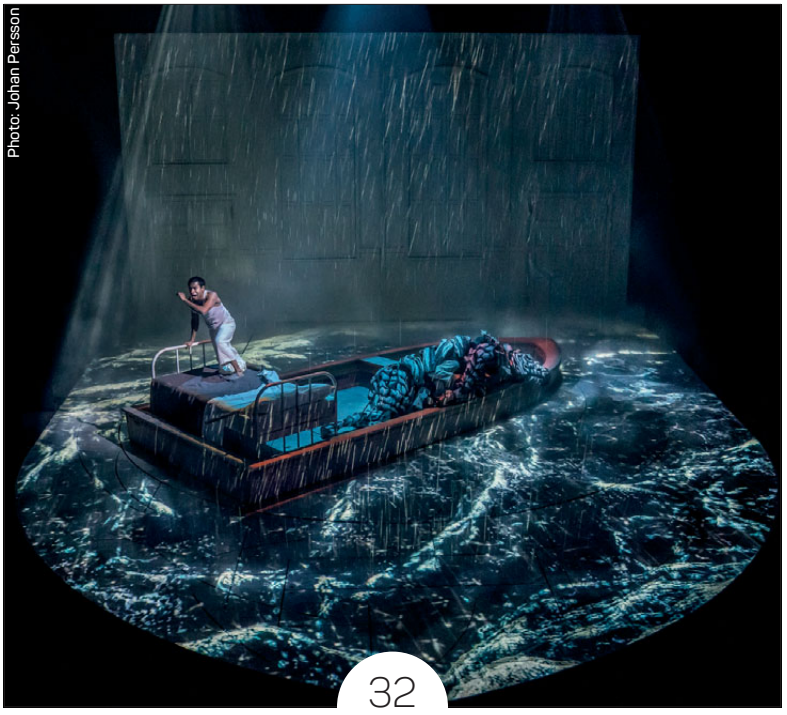


Photo: Johan Persson

32

COVER STORY

Theatre : Life of Pi

Rob Halliday reports on the Olivier Award-winning stage adaptation of *Life of Pi* that has pushed the limits of tech for theatre . . .

42

Event : Going Platinum

LSi discovers some of the technology at work behind the awe-inspiring events that celebrated Queen Elizabeth II's Platinum Jubilee . . .

56

Ibiza comes to Peckham

As revellers descend on Peckham Rye for dance music extravaganza GALA '22, Simon Duff checks out the audio systems at work . . .

64

TF : Cyberlight LED

Richard Cadena reviews the new moving mirror fixture from High End Systems . . .

READ LSi ONLINE FOR FREE. DOWNLOAD THE 'LSi-VIEW' APP - AVAILABLE FOR BOTH APPLE AND ANDROID DEVICES

NEWS

08 In the News
Latest business news & developments, association news, events, training & education, standards & safety

18 Eurovision dazzles in Turin
LSi discovers how the 66th edition of the Eurovision Song Contest quite literally found its sparkle . . .

20 Fit for the future
LSi discovers how York St John University has benefitted from a flexible light and sound installation in its recently opened Creative Centre . . .

24 A marvel of flexibility
Gareth Owen explains how he deploys a specific loudspeaker to achieve the same sonic quality across a diversity of theatre productions . . .

26 Product News
A round-up of the latest product releases and developments from across the industry . . .

REGULARS

16 Membership Matters
The latest news from PLASA

30 Early Stagers
Graeme Smith

40 Future Tech
Digital humans

52 Audio File
Worthy causes

54 Crew Cuts
Nuno Torres

55 Classic Gear
LCS SpaceMap

62 Rigging Call
Them's the brakes

63 Tools From Within
panLab

68 In Profile
Ema Gazdík

NEXT ISSUE

Coming up in the September issue*:

- Touring: Ed Sheeran
- Concert: ABBA Voyage
- Preview: PLASA Show 2022
- Tech: Meyer Sound's Panther
- Plus all of your regular favourites . . .

*Subject to change

For advertising enquiries:
advertise@lsionline.com

Copy deadline:
Friday 5 August 2022

LSi Digital Edition - published by PLASA Media Ltd.

© Copyright PLASA Media Ltd.

ISSN 1759-6343

Fog is our passion!

Unique 2.1

- Economical and powerful
- Quiet
- Low maintenance
- Compact and blue

- Optimal support of light and laser effects
- Minimal heat-up time (60s)
- Pump and fan separately adjustable
- DMX 512, analog, stand alone
- Internal timer
- Individual profile programmable
- Simple operation
- Filter
- Minimal fluid consumption
- 1500 W, 230V/50Hz

Accessories:
- Diverter
- XLR-remote
- Hanging set
- Flightcase

Look Solutions
Fog machines made in Germany
Look Solutions GmbH & Co. KG
Buenteweg 33 · DE-30989 Gehrden
Phone +49-(0)5108 - 91 22 10 · Fax 91 22 111
www.looksolutions.com · info@looksolutions.com

INDU-ELECTRIC
Power Distribution

You need to power Global Events?

We are specialized in worldwide configurations

www.indu-electric.de/en

Customized Power Distribution Systems

For over 30 years **INDU-ELECTRIC** has supplied companies and event organizers around the Globe with Power Distribution Systems.

made by PREMIUM QUALITY INDU-ELECTRIC

POWER WHERE YOU NEED IT

The **INDU-ELECTRIC** Power Distribution Boxes are famous all over the world for their build quality, reliability and unfailing performance.

INDU-ELECTRIC – Uncompromising reliability at the highest level!

Contact us: info@indu-electric.com

LIGHT & SOUND INTERNATIONAL

PLASA Media, Redoubt House,
1 Edward Road, Eastbourne,
East Sussex, BN23 8AS, UK.
Tel: +44 (0)1323 524120
www.lsionline.com

Editor
Claire Beeson
claire.beeson@plasa.org

Assistant Editor
Teodora Lyubomirova
teodora@plasa.org

Technical Editor
Richard Cadena
richard.cadena@plasa.org

Sales Manager
Jamie Mould
jamie.mould@plasa.org

Sales Executive
Natasha Adams
natasha.adams@plasa.org

Production Manager
Sonja Walker
sonja.walker@plasa.org

Subscriptions
subs@lsionline.com

PLASA MD
Peter Heath
peter.heath@plasa.org

PLASA FD
Shane McGreevy
accounts@plasa.org

Regular Contributors:
Simon Allen, Mike Clark, James Eade, Jim Evans, Rob Halliday, Roland Hemming, Julie Harper, Mark Johnson, Mel Lambert, Kate Lyon, Steve Moles, Sarah Rushton-Read, The Shend, James Simpson, Louise Stickland, Cat Strom, Phil Ward, Mike Wood.

Annual Subscription Rates:
UK: £40.00
Standard Mail: £60.00
Europe (Airmail): £70.00
RoW (Airmail): £80.00
Single copy price: £3.95

Every effort has been made to ensure that the information carried in LSi is accurate, but the Publisher cannot accept responsibility for its contents or any consequential loss or damage arising as a result of the use of material printed. The views expressed in LSi are not necessarily those of the Editor or PLASA Media.

The editor's consent must be obtained before any part of this magazine may be reproduced in any form whatsoever. LSi reserves the right to edit news and features as required.

LSi is published by PLASA Media Ltd, a commercial arm of PLASA. While LSi works to promote the interests of PLASA's Members, and the activities and initiatives of the Association itself, it is not positioned as a service to PLASA members. Our aim is to continually improve and refine LSi to ensure that it continues to offer industry-leading coverage.

PLASA Media aims to produce LSi with an approximate 60/40 split between editorial content and advertising respectively.

LSeye

Claire Beeson editor
claire.beeson@plasa.org

"Life of Pi began life as a novel and, much like Richard Parker - the story's mighty Bengal tiger - it's a beast that hasn't looked back since . . ."

Currently wowing audiences at Wyndham's Theatre in the West End, *Life of Pi* began life as a novel by Yann Martel. Much like Richard Parker - the story's mighty Bengal tiger - it's a beast that hasn't looked back since. In 2012 a movie version was released, directed by Ang Lee. It was widely praised, receiving 11 Academy Award nominations that year and winning four. Now a play, *Life of Pi* is still receiving critical acclaim, with Lolita Chakrabarti's stage adaptation winning five Oliver Awards earlier this year, including Best New Play, Best Lighting Design and Best Set Design.

No surprises then, that *LSi* was keen to meet the team responsible for bringing this fantastic tale to life on stage. Turn to pages 32-39 for Rob Halliday's detailed production report as he discovers the creative journey taken by the crew to bring *Pi* to life on stage.

Also inside, we report on the event of a lifetime: Queen Elizabeth II's extraordinary Platinum Jubilee celebrations. From a refined, religious service of thanksgiving that required sensitive lighting, to a multi-genre concert complete with a stunning drone show, to a jubilant pageant showcasing the best of British culture, there was certainly plenty to enjoy. We present an overview of the main events inside on pages 42-51 . . .

Meanwhile, Simon Duff visits Peckham's finest dance music festival, GALA '22 (pages 56-59) to detail the sound systems in use; plus we report on the brand new Creative Centre at York St John University, where a new sound and light installation is helping students with their creative studies (pages 20-22). On the tech front, Richard Cadena gets to grips with the new Cyberlight LED from High End Systems and discovers how the new moving mirror fixture builds on the original Cyberlight's legacy (pages 62-64). Plus, we present the latest product launches and developments (pages 26-29).

On the subject of new technology, I'm pleased to announce that the 2022 PLASA Awards for Innovation are now open for entries. A staple of the PLASA Show, the awards celebrate innovative products that demonstrate a new style of thinking, improve technical practice or safety, introduce new materials or techniques, or offer a new commercial advantage. Successfully nominated products will be displayed on the Innovation Gallery at the heart of PLASA Show, and winners will be announced on 5 September. If you're interested in entering, make sure you do so by 5 August via the following web address: www.plasashow.com/awards. Of course, even if you have nothing to do with product development, PLASA Show 2022 provides a great opportunity for the industry to reunite once again, with free registration now open on the show's website. But for now, I'll leave you to enjoy your July issue of *LSi*, with all the previously-mentioned features and plenty more to sink your teeth into . . .

EVENT

PLASA Awards for Innovation welcomes entries

[UK] The PLASA Awards for Innovation 2022 are now open for entries. Organised in association with *LSi*, the awards celebrate innovative products from across the live entertainment technology industry that can demonstrate a new style of thinking, improve technical practice or safety, introduce new materials or techniques, or offer a new commercial advantage.

PLASA Show 2022 exhibitors, PLASA members and non-exhibitors are invited to enter their products by 5 August to be in with a chance of winning one of the coveted awards.

Each successfully entered product will be judged by an independent panel of industry experts who have the authority to present up to eight awards of equal standing, plus a potential Gold Award for an outstanding new product and an Award for Sustainability.

All nominated products will be showcased in the Innovation Gallery at PLASA Show 2022, and will also be featured year-round on the virtual Innovation Gallery.

The winners will be revealed during a ceremony at the PLASA Show on Monday, 5 September.

www.plasashow.com/awards

BUSINESS

Neumann.Berlin and Merging Technologies join forces

(L-R): Ralf Oehl, Andreas Sennheiser and Claude Cellier

[Europe] The Sennheiser Group has acquired Merging Technologies. Under the agreement, Swiss digital audio recording systems specialist Merging will partner with studio sound business Neumann.Berlin as part of a growth strategy.

The first product of the partnership will be an audio interface that enables integration of Neumann products into a digital infrastructure. Meanwhile, the existing portfolio of the two companies will remain unchanged.

Ralf Oehl, CEO of Georg Neumann GmbH, comments: "We plan to strengthen Neumann's offering, particularly in the area of digital workstreams, in order to provide our customers with holistic audio solutions in studio quality. Merging Technologies' products and solutions are an excellent complement to the Neumann product portfolio. We are therefore very much looking forward to working together with the Merging team."

www.neumann.com
www.merging.com

BUSINESS

Diagon opens workshop space

[UK] Set design specialist Diagon has opened a new 40,000sq.ft workshop in Erith, southeast London. The facility doubles the company's indoor footprint and will house specialist departments for carpentry, engineering, paint and CAD.

A provider of bespoke scenic build and installation services for the retail, exhibition and event sectors, Diagon works with clients including Christie's auction house, George P Johnson, the BRIT Awards, and artist and stage designer, Es Devlin.

Tom Sabin, Diagon MD, comments: "This fabulous new facility marks a huge milestone for Diagon. Coming just after our 21st anniversary, we have doubled our fabrication capacity, created a new studio department with incredible draughting and design capability and added some fantastic staff to the team. With a busy summer ahead, we now have the ability to further step up the scale and quantity of projects we can take on."

www.diagonltd.com

TRAINING/EDUCATION

SLX Lighting Programme open to students

[UK] Budding live events professionals can now apply for the 2022/23 edition of SLX's student support scheme, The Lighting Programme. Those who join will enjoy access to mentorship, networking opportunities, specialist project support and an equipment package for one final-year production.

Applicants must be lighting design and/or technical students studying in the UK, who will be in their third year of an undergraduate programme this September. There are four spaces available for the 2022/23 intake of the programme. To apply to The Lighting Programme or to find out more, visit the web address below.

www.slx.co.uk/the-lighting-programme

PEOPLE

Bandit Lites bolsters ranks

From left: Brent Barrett, Roth Edwards and Jake Tickle

[USA] Bandit Lites has promoted three employees to vice-president roles. Brent Barrett has become VP of business development; Roth Edwards - VP of operations; and Jake Tickle has stepped up to the role of VP of business and innovation. Additionally, the company has hired Kelly Feild, Tim Keller, Hayley Elliott and Katie Feltes as full-time touring lighting technicians, to strengthen its team working on this summer's productions.

www.banditlites.com

BUSINESS

Lightware Visual Engineering opens APAC HQ

[Australia] Lightware Visual Engineering has opened new offices in central Sydney. Located in the Newington Technology Park and surrounded by the Sydney Olympic Park and harbour, the new APAC HQ features a training centre, showroom, tech lab, warehouse, and office and meeting spaces. It will be a central hub for customers and partners across Australia, New Zealand and the Pacific Islands, with all Sydney-based staff set to be based at the new HQ.

www.lightware.com

SENSATION

NOT

DOMINATION

LIBERATING
AUDIO

emacoustics.co.uk

OBITUARY

John Simpson (1949 - 2022)

[UK] John Simpson, co-founder of White Light (WL) and chairman of technical entertainment charity Backup, passed away on 11 June after a short battle with cancer. He was 79 years old and is survived by his partner, Sue and three daughters, Victoria, Laura and Emily.

Born in Devizes, Wiltshire in 1942, his family later moved to Chipstead, Surrey where his mother became very active in the local amateur dramatics society, encouraging her children to participate. Simpson soon developed an interest in the technical aspects of the theatre - in particular, lighting, though struggled to see it as a viable career. After a brief stint on building sites and as a teacher in the 1960s, he joined the Arts Council as a trainee administrator before being appointed as general manager at theatres including Watford Palace Theatre, Glasgow's Citizen Theatre and the Royal Court Theatre in London. At the Royal Court, he met Andy Phillips and Rory Dempster, and alongside Angela Fox and David Henderson, they founded WL. Simpson soon maxed out his credit card in order to purchase the company's first set of lighting fixtures. Thankfully, it proved to be a sound investment, with WL's services soon much in demand.

Over the next 50 years, the company continued its work in the theatre industry, establishing itself as a leading supplier for West End and UK touring productions. WL has also used its technical expertise to evolve into other areas, such as live events, broadcast, hospitality, education, live music and many more. Simpson's philosophy was "if you're not moving forward, you're just standing still" and, aided by a top team around him, the company grew and grew.

Outside of WL, Simpson was known for his charity work. In the early 2000s, when Backup trustee Rick Fisher and the late Tony Gottelier put forward the idea of a charity to help lighting colleagues, Simpson got involved and helped to form Light Relief, a charity he went on to chair. He was also central to the creation of Behind the Scenes in 2014, which helped people involved in all areas working backstage. In 2016, when sharing its name with the US version of the charity was no longer possible, Backup was formed, again with Simpson as its chair.

During the pandemic, Simpson was instrumental in setting up Backup's Hardship Fund and a range of resources to help those in need of support with their mental health. A statement from Backup says: "John believed in treating people well, and in fairness. This shone through in his work with Backup as it did throughout all aspects of his life. In a world where so much is only said and polished, John delivered on the real stuff, the stuff that mattered. The morals and the ethics of how one should conduct oneself were lived by John. We will miss his wise counsel and clear vision."

In a tribute to its late founder, WL said: "Those of you who were lucky enough to know John, or work with him, will know what a brilliant person he was and how this is not only a huge loss to White Light but also the wider industry. Thank you for the memories, John. And for being a great boss, a great leader and a great human being. You'll be sadly missed by us all."

www.whitelight.ltd.uk
www.backuptech.uk

BUSINESS

Optimal Audio names two distributors

Team members from Optimal Audio and Audio Brands

[Scandinavia/Australia] Optimal Audio has appointed Audio Brands as its distributor in Australia, whilst the Septon Group will represent the brand in Sweden and Denmark.

Sydney-based Audio Brands operates in the installation and production markets and specialises in commercial audio and AV solutions, supplying Australia through a wide network of dealers and integration partners. The Septon Group is one of Scandinavia's leading distributors of pro audio and video equipment, and handles all verticals.

www.audiobrands.com.au
www.optimal-audio.co.uk
www.septon.se

BUSINESS

More AV expands Funktion-One distribution

More AV's Remco van der Werff (left) with Soundsystem.be's Lieven Pillaert

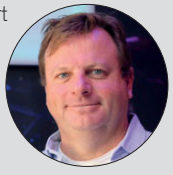
[Europe] More AV has extended its Funktion-One distribution to include Belgium and Luxembourg, making it the loudspeaker manufacturer's representative for the entire Benelux region. More AV will take over from outgoing distributor Soundsystems.be, whose owners Tia Broodcoorens and Lieven Pillaert have decided to close the company.

Funktion-One's Ann Andrews comments: "We're delighted that More AV has grown its operation and taken over the distribution of Funktion-One throughout Benelux. We've known Remco van der Werff and his team for a long time and know they will continue with their professional and attentive approach. We're thankful for everything Soundsystem.be has given as part of the Funktion-One family, and wish Tia and Lieven every success in the future."

www.more-av.nl
www.funktion-one.com

PEOPLE

DWR welcomes Stuart Andrews



[South Africa] Stuart Andrews has joined the team at DWR Distibution as projects and operations manager. With a 30-year career in the live events industry, Andrews has worked at the Wild Coast Sun, looking after the theatre, show bar and conference centre's audio requirements. He then joined Caesar's Palace (Emperor's Palace), before relocating to Dubai for three years to head up the AV department at the Jumeirah International Hotel Group. Upon returning to South Africa, he joined Gearhouse South Africa for 17 years, fulfilling various positions, most recently operations manager in Johannesburg.

www.dwrdistribution.co.za

INDUSTRY ISSUES

Power of Events hub moves forward

[UK] The Power of Events has launched a website to promote its activities. The not-for-profit organisation aims to unite interested parties from across the UK events industry and includes a taskforce (in which PLASA takes part) and several action groups. It's the successor of the One Industry One Voice coalition, which was set up in July 2020 in response to the COVID-19 crisis. Rick Stainton, founder of The Power of Events, comments: "We have always felt that we had to be impactful, clear and content-led, mapping out and signposting the UK events industry in an inclusive way across the seven core sectors. We can now get feedback and suggestions ensuring the main hub is designed by the industry, for the industry.

www.thepowerofevents.org

EVENT

Immersive Experience Network hosts summit

[UK] The Immersive Experience Network recently held its inaugural Live Experience Summit, bringing together over 150 creators of immersive and interactive experiences to debate the future of the sector. The network aims to build a community of creators, facilitate knowledge-sharing, and undertake research amongst a variety of immersive sectors, including theatre, scare attractions, escape rooms, location-based VR/AR, experiential art and audio.

The summit, held on 31 May, included a session on commercial strategy for immersive; finding venues for site-specific shows, and the future of immersive experiences, and the opportunities within the metaverse.

"This was an incredibly encouraging start for this new community and proves to us that there is a desire for the creative sector to work collaboratively together as we try and rebuild a stronger, fairer and more healthy sector out of the COVID disaster," comments co-founder Andy Barnes. The next Immersive Experience Summit is set to be held in January 2023.

www.immersiveexperience.network

All the latest business, people & project news : www.lsionline.com

PEOPLE

Clear-Com expands engineering team

[USA] Calvin Long has joined Clear-Com's applications engineering team. Based in the south eastern region of the US, Long has knowledge on both remote and hybrid broadcast operations from his time at Black News Channel (BNC) as broadcast manager of operations. He was a first-hand Clear-Com user in his previous role, configuring the intercom system to enable remote and hybrid broadcast workflows for the anchors, production team and engineers.

www.clearcom.com

PEOPLE

James Suit joins ACT in NYC

[USA] James Suit has rejoined ACT Entertainment's regional sales team for the New York City Metro area, having previously served as the northeast regional sales manager for brands distributed by ACT.

Suit began his professional career in 2005 when he joined 4Wall in New Jersey as a moving light tech. He spent seven years in system integration and sales for Starlite Productions in Moorestown, later moving to Ushio America where he served as regional sales manager for entertainment, covering the Eastern US for the lighting manufacturer and distributor.

www.actentertainment.com

ASSOCIATION

ESTA announces award winners

[USA] The winners of the ESTA Members Choice Awards were announced during the recent NAMM Show in Anaheim. ESTA member exhibitors nominated new products in two categories - Equipment and Gadget - which were then voted on by ESTA members visiting NAMM.

In the Equipment category, Altman Lighting won for its AIP-200 Hydra PAR, a compact 200W RGBL IP65-rated zoom PAR. Meanwhile, in the Gadget category, Link USA took home the prize for its PCB Widgets, a solution for using standard Cat cabling to take advantage of multi-pin connectors and typical panel-mounted XLRs.

www.esta.org
www.altmanlighting.com
www.linkusa-inc.com

VOICES IN THIS ISSUE

"Our team work tirelessly to create the ultimate visual extravaganza for each and every artist . . ."

p18 Luca Toscano reflects on *Eurovision 2022*

"We've barely dipped a toe in the water in terms of what we can do creatively . . ."

p20 Hugo Glenwright speaks of the new Creative Centre at York St John

"You really can't tell where one element ends and the next begins . . ."

p32 In our cover story, Rob Halliday reports on *Life of Pi*

"The same team who couldn't work for two years and were essentially forgotten about, pulled it out of the bag to make these unforgettable celebrations happen. "

p42 Brit Row's Josh Lloyd reflects on a job well done for the Platinum Jubilee

"We can get a great sound in all our structures and control that sound to suit the performance . . ."

p56 Isambard Gillilan on supplying geodesic structures for GALA'22

"Cyberlight has been through many iterations, which speaks volumes about its popularity . . ."

p62 Richard Cadena reviews High End Systems' latest Cyberlight update

EVENT

Registration for PLASA Show 2022 opens

[UK] PLASA Show is returning to West London from 4-6 September, and those wishing to attend can now register for free via the event's website.

Taking place in Olympia London's Grand Hall, the entertainment technology tradeshow promises to deliver the latest technology and product demos, and delve into key industry issues. There will also be four showfloor theatres running over 60 sessions on a range of topics across the three days.

PLASA Show will also provide plenty of opportunities for networking with leading companies from pro audio, AV, lighting, rigging and staging. Meanwhile, the show's seminar programme will offer valuable business advice, unpack technical topics, and explore a range of the industry's latest creative achievements. Interactive workshops will also return to provide visitors with the chance to try the latest tech - from live audio demos to lighting console training, and much more.

The widely respected PLASA Awards for Innovation will also return to recognise and reward next-generation products and the people behind them. The awards are proudly run in association with *LSi*. See page 8 for further details on how to participate in the awards.

To register for the event and keep up-to-date with the latest announcements, visit the web address below. Free registration ends on 31 August.

www.plasashow.com

BUSINESS

ChamSys and StageMix look to the future

The StageMix/ChamSys team at PALM Mumbai

[India] ChamSys has appointed StageMix as its dealer in India. The Mumbai-based company recently hosted seminars for more than 60 lighting designers, programmers and directors, and worked the PALM Mumbai tradeshow alongside ChamSys.

Nitesh Narayan, sales manager of StageMix, adds: "ChamSys has great products with a lot of features and functionality that are not readily found elsewhere. Our team is committed to providing top-notch support to our customers, so we share this philosophy with ChamSys, which already has a great platform with online training videos, webinars, and training sessions."

www.chamsyslighting.com
www.stagemix.com

PEOPLE

DPA announces company-wide hires

[Denmark] DPA Microphones has welcomed new hires in product management, research and development, sales, marketing, and production. Among them is Helga Somava, who joins as the brand's directors of product management. A graduate of Copenhagen Engineering College with a focus on export engineering, Somava brings leadership experience from past directorial and managerial roles at Bang & Olufsen, GN Netcom and most recently at NUORI ApS, where she served as COO.

Meanwhile, Torben Ekenberg will lead the research efforts needed for the creation of new technology and equipment in the role of head of R&D. He holds degrees in electro-mechanical engineering and business, and has been R&D manager for Brüel & Kjær's Transducer department.

www.dpamicrophones.com

www.lsionline.com

EVENTS DIARY

PLASA Show
4-6 September 2022
London, UK
www.plasashow.com

IBC
9-12 September 2022
Amsterdam, Netherlands
//show.ibc.org

AES 153rd Show
19-20 October 2022
New York, USA
www.aes.org/events

NAB Show
19-20 October 2022
New York, NY, USA
www.nabshow.com

AFIAL
25-27 October 2022
Madrid, Spain
www.afial2022.net

LDI
18-20 November 2022
Las Vegas, NV, USA
www.ldishow.com

JTSE
22-23 November 2022
Paris, France
www.jtse.fr

ISE
31 Jan - 3 Feb 2023
Barcelona, Spain
www.iseurope.org

ISCEx 2023
21-22 March 2023
Coventry, UK
www.isce.org.uk

NAMM
13-15 April 2023
Anaheim, CA, USA
www.namm.org

Prolight+Sound
25-28 April 2023
Frankfurt, Germany
www.pls.messefrankfurt.com

PLASA Focus Leeds
9-10 May 2023
Leeds, UK
www.plasaleeds.com

Showlight 2023
20-23 May 2023
Fontainebleau, France
www.showlight.org

BUSINESS

Version 2 Lights acquires Finelight

[UK] Version 2 has completed the asset purchase of broadcast lighting rental company Finelight, whose rental business will now come under the Version 2 umbrella. Finelight's operations are set to be consolidated into Version 2's Reading HQ during July. Communication channels for both companies will remain unchanged in the interim.

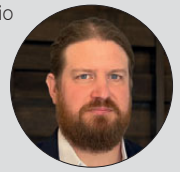
Version 2 MD Nick Edwards comments: "We are excited to integrate Finelight's inventory into our growing operations. As a preferred supplier to the BBC, Finelight has built up an excellent reputation for quality of service. We're equally delighted to welcome Simon Perrott to our management team."

Finelight MD Simon Perrott adds: "We have got to know Nick and the team at Version 2 over recent years whilst collaborating on a number of high-profile shows. We have a shared passion for great customer service, and we're looking forward to building upon this further with the backing of Version 2 and its large equipment inventory."

www.v2lights.co.uk

PEOPLE

Pro Media AV EU promotes Tom Williams



[UK] Pro Media Audio Video EU, part of the Clair Global Group, has promoted Tom Williams from head of engineering to associate director. Working closely alongside director Eddie Thomas, he will help navigate the next phase of the European business, which was launched in 2021. Williams will be based at Clair Global Group's Twickenham, London office, where Pro Media Audio Video's European team is based.

www.promediaaudiovideo.com

TRAINING/EDUCATION

Sennheiser LIPA scholarship winner revealed

[UK] Celeste Jones, a first-year BA (Hons) Sound Technology student, is the winner of this year's Sennheiser Student Scholarship programme of the Liverpool Institute for Performing Arts (LIPA). She will receive financial support for tuition and gain access to Sennheiser's expertise and global network of contacts.

The partnership between LIPA and the audio specialist goes back more than 25 years, with the manufacturer now extending its product support to include the new BA/MArts Filmmaking & Creative Technologies course.

www.lipa.ac.uk
www.sennheiser.com

BUSINESS

Yamaha joins the SDVoE Alliance

[Europe] Yamaha Corporation has joined the SDVoE Alliance, a non-profit consortium of technology providers, which aims to standardise the adoption of ethernet for transporting AV signals.

Yamaha has manufactured network equipment in Japan for more than 25 years, and has more recently developed network switches for pro audio. The company's SWX3220-16MT L3 switch and SWX2320-16MT L2 switch support the SDVoE standard, with two more models also available to the Japanese market. Justin Kennington, president of the SDVoE Alliance, adds: "Yamaha's extensive line of network switches will support the SDVoE standard for seamless and high-quality content distribution. We look forward to the company's participation in the SDVoE Alliance community."

www.yamaha.com
www.sdvoe.org

CHARITY

Stars sign up for Music Support auction

[UK] Music Support, the charity that helps those who work in music and live events affected by mental ill-health and/or addiction, recently held its latest fundraising auction: *Music Support's Music Icons*. Featuring exclusive prizes from four music artists, the funds raised through this auction will contribute towards Music Support's core services.

Auction prizes included a Fender Squier guitar donated by Coldplay; a Fender Stratocaster signed by Roger Daltrey and Pete Townshend; a snare drum signed by Topper Headon of The Clash, and a Fender Stratocaster signed by all six members of Iron Maiden. The auction closed just as *LSi* went to press; to find out how much the auction yielded for the charity, visit the web address below.

www.charitystars.com/musicicons

www.lsionline.com

PEOPLE

Optocore grows technical support team

[Germany] Radha Mohan Rajani has joined the technical sales support team at Optocore. Rajani became familiar with Optocore devices whilst working at Mumbai-based rental company Sound.com on large-scale events. He then joined Poland's Fotis Sound, where he underwent a full Optocore Certification Training. In his new role, he will look after client communications, with a particular emphasis on building BroaMan's presence in the market.

www.optocore.com
www.broadcastmanufactur.com

BUSINESS

LaserAnimation acquires Ray Technologies

[Germany] Berlin-based LaserAnimation Sollinger has acquired Bavarian firm Ray Technologies. The two companies operate in the show and event industry, Ray being better known for its RTI brand. The merger is hoped to lead to "an even broader coverage in the professional market" and will result in shared resources and benefits to R&D. The LaserAnimation and RTI brands will continue to exist, as will the companies' locations in Berlin and Bavaria, with all employees staying onboard.

www.laseranimation.com

EVENT

Theatres Trust reveals 2022 conference theme

[UK] Theatres Trust has unveiled details of its 2022 conference. The event will take place under the banner of *Theatres Fit for the Future* and be held on 11 October at Lyric Theatre, Hammersmith, London.

The conference will explore what the new post-COVID 'normal' looks like and what this means for the way theatres are designed, adapted and operated. The conference will bring together a mix of speakers and case studies, alongside opportunities for discussion and sharing of best practice.

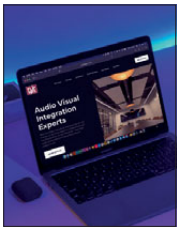
Sessions will feature theatres that are exploring new business models to ensure they not only survive but thrive in this new environment, looking at how they are generating new income streams and finding different ways to engage with their audiences and communities, and developing partnership approaches to increase resilience and impact. The conference will also return to sustainability, the topic of last year's event, and offer information on the latest developments of the *Theatre Green Book*.

With *LSi* as a media partner of the event, readers can benefit from a discount on tickets to the conference by using the code: LSI22.

www.theatrestrust.org.uk

BUSINESS

Flipside Soundsystem becomes Flipside AV



[UK] London-based systems integrator Flipside Soundsystem has rebranded as Flipside AV after opting to close its rental service and focus solely on installed projects. "This name change has not happened overnight, it is the result of a gradual shift in our priorities at Flipside," explains MD James Cooper. "As we have evolved as a company, the AV installation side of the business has gone from strength to strength and become the main driver for where we see our future." Alongside the name change, Flipside AV has redesigned its website to better highlight the company's services and solutions.

www.flipsideav.co.uk

TRAINING/EDUCATION

LEEA webinar focuses on entertainment sector

[UK] The Lifting Equipment Engineers Association (LEEA) recently held a webinar exploring how having the right lifting equipment and safe working loads in the entertainment sector is vital for successful productions and concerts. Also covered was sourcing and training staff, and contracting for thorough examinations. Speakers included Paul Fulcher, MD of Rigging Services, and Sean Pagel, director of Production Services Ireland & chairman of the National Rigging Advisory Group, plus LEEA's technical services specialist Keith Tonge and senior training specialist, Dave Tucker.

www.leeaint.com

BUSINESS

ZaLight to distribute Fantek in Italy

Equipson's Juan José Vila (centre) with ZaLight's Luca Di Donato (left) and Graziano Zanini

[Italy] ZaLight will handle the Italian distribution of all products manufactured by Fantek, Equipson has announced. ZaLight also distributes Equipson's LightShark range of DMX-based hardware lighting consoles, in addition to other brands suitable for the broadcast, film, theatre and architectural sectors. Fantek products include lifting towers, truss structures, platforms, accessories and clamps.

www.equipson.es
www.zalight.it

BUSINESS

New Ayrton focus for Denmark, Sweden and Norway

[Europe] LiteNordic will no longer distribute Ayrton products in Norway, Denmark and Sweden from 31 July, the French lighting manufacturer has announced. Beyond that date, sales enquiries should be made to Matt Hallard, Ayrton's European sales director, with LiteNordic supporting sales made before 31 July and under warranty thereafter. "Ayrton is now actively inviting Nordic distributors and industry captains looking for an exciting new challenge to get in touch," comments Hallard. "We are very grateful to LiteNordic for the past two years of dedication and hard work, but agree that a change in distributorship is now the way forward. We will continue to work closely with LiteNordic until 31 July to ensure a seamless transition to new distribution partnerships. There's a wealth of stellar companies out there whom we are yet know and we look forward to meeting them."

www.ayrton.eu
www.litenordic.com

PEOPLE

Martin Audio appoints HR manager

[UK] Severine Anvoner has joined Martin Audio as a HR manager. Hailing from France and living in the UK since 2001, Anvoner has considerable experience in the corporate world, including at Coca-Cola Enterprises and more recently at Seagate Technology. Alicia Cousins, who had previously led HR at Martin Audio, has been promoted to a similar position at the Focusrite Group.

www.martin-audio.com

All the latest business, people & project news : www.lsionline.com

BUSINESS

Tech giants invest in Imverse

[Switzerland] Hologram video technology specialist Imverse has reportedly secured $4.8m in funding from investors including HTC and Logitech. The company develops Imverse Holo, software for volumetric content and live holograms, which uses a proprietary graphics engine to capture, render and stream multiple holograms in realtime, producing full-body volumetric human figures without powerful computing equipment. The software is compatible with Microsoft Azure Kinect cameras in order to enable 'holoportation' and holographic conference calls.

Javier Bello Ruiz, co-founder and CEO of Imverse, comments: "With this funding, we'll be able to significantly ramp up the roll-out and expansion of our software platform and our partnership network.

www.imverse.com

TRAINING/EDUCATION

Guildhall School hosts summer courses

[UK] The Guildhall School of Music & Drama hosted two short courses at the end of June. Led by Video Design lecturer Angeline Ferguson, *Introduction to Video Projection Mapping* demonstrated the basic principles and techniques of digital video mapping, focusing on how to prepare and project video onto a 3D structure using Resolume Arena 7 and Adobe After Effects. Meanwhile, *Sound Design for Theatre* taught attendees the practical, creative and technological aspects of sound design and management for the stage. Topics covered included the purpose of sound within theatre and there was a focus on relevant software and equipment. The course was led by Production Arts lecturer, Grant Shalks.

Guildhall School is set to unveil its next short courses for 2022/23 soon.

www.gsmd.ac.uk

www.lsionline.com

PEOPLE

1 Sound strengthens EMEA sales team

Leonardo Dani and Leonardo d'Andrea head up EMEA for 1 Sound's Lou and Lindsay Mannarino

[USA] Loudspeaker manufacturer 1 Sound has added Leonardo Dani and Leonardo D'Andrea to its team as sales executives for EMEA. Dani has 15 years of experience in developing and leading international markets and distribution networks. He has spent the last three years as chief sales officer for Pequod Acoustics, where he developed their international network of sales and marketing. Meanwhile, D'Andrea has previously worked for K-array, where he was directly involved in the development of the Italian company's distribution network in EMEA.

www.1-sound.com

HARROGATE
CONVENTION CENTRE

TECHNICIAN'S WANTED
TO JOIN GROWING EVENT DELIVERY TEAM

VACANCIES: Technician – x3 full time roles available
GRADE H: £25,419–£27,514 pa (+5% shift allowance)
HOURS: 37 (annualised hours)

Harrogate Convention Centre is the leading event venue in the North delivering a wide range of conference, exhibition and entertainment events each with their own unique technical requirements.

As part of the event delivery team, you'll ensure the highest quality provision in technical requirements throughout all productions, performances, events and conferences. Reporting to the Technical Supervisor you will use your own initiative to make technically complex decisions in a busy operational environment.

For further information or informal discussion please email Michael Constantine, Head of Operations on michael.constantine@harrogate.gov.uk

CLOSING DATE: 31 July 2022
To apply, please visit: www.harrogate.gov.uk/jobs

outback RIGGING

PROJECT MANAGER
SALARY NEGOTIABLE - BASED ON EXPERIENCE

We are a well-established provider of rigging solutions to the events, exhibition and corporate presentation markets across the UK. We are recruiting now for a Project Manager to be part of our busy Projects and Technical Team.

The role will encompass:

- Project management including creation and interpretation of CAD drawings, H&S paperwork and detailed project documentation.
- Project implementation - resource scheduling, sourcing equipment, plant, purchasing, manpower and logistics for a successful outcome.
- Designing practical rigging solutions in response to a client's requirements or tenders and formulating a commercial proposal.
- Identify new and potential clients and exploit all rental and sales opportunities as they arise.

The ideal candidate will be enthusiastic, self-motivated, a good communicator and have prior knowledge and experience of working within the industry. Some rigging awareness would be a benefit but additional training will be offered if required.

Applications including a CV to:
inquiries@outbackrigging.com

membership matters

Keep up-to-date with PLASA's activities and how you can get involved . . .

NELT courses on the way for London & Bolton

PLASA's National Event Lifting Training (NELT) is a great way to train up new or existing production professionals who operate lifting from ground level. New NELT centres will soon open in London and Bolton. The new centres will offer more opportunities for industry-specific training in live production, helping to make live events and entertainment safer for audiences, performers, and crew. Run over three days, NELT is delivered by qualified, practicing professionals and is the go-to course for production apprentices. To offer assistance, PLASA members can take advantage of a

discount on the NELT enrolment fee. Take a look at the upcoming Autumn dates on the PLASA website.

www.plasa.org/nelt

Save the date: PLASA's 2022 AGM

PLASA will host its 2022 Annual General Meeting on 30 November in London. The AGM will be followed by an update from behavioural economist Roger Martin-Fagg, with members invited to network over the course of the evening. Invitations will be sent out to members in late September, with members encouraged to save the date now to ensure attendance.

www.plasa.org

New Members

PLASA is delighted to welcome the following new members:

- disguise
- Distribution Zone
- Luminous Show Technology
- Purple Sheep LX Ltd
- Rescue Specialist Limited
- George Adam
- Sam Davis
- Laura Stent
- Jessica Sanders

PLASA trade events continue return

It was great to see so many members come together at PLASA Focus Leeds in May, and to receive wonderful feedback from visitors and exhibitors (*see LSi June 2022*). Looking ahead to our next event, PLASA Show is will take place from 4-6 September in Olympia London's Grand Hall, with free registration now open until 31 August. The exhibition promises to be even better than in 2021, and it's still not too late to sign up to exhibit. Entry for the prestigious PLASA Awards for Innovation are now open, with the winners set to be announced at PLASA Show. For more information, see page 8 in this issue or visit the links below.

Info on exhibiting:
www.bit.ly/3OyMQGP
Register as a visitor:
www.bit.ly/3HKbzWu
Enter the awards:
www.plasashow.com/awards

Join PLASA today : www.plasa.org/join

SIC codes explained

PLASA answers some FAQs on Standard Industry Classification (SIC) codes . . .

What are SIC codes?
Standard Industry Classification (SIC) codes are requested and analysed by governments to determine the economic value of industries.

What's the issue and why is it important?
During the pandemic, our industry's collective financial value and contributions could not be tangibly identified by governments due to the lack of appropriate SIC codes. This led to an underestimation of the sector's worth and, therefore, the financial support allocated to individuals and businesses in the events industry. PLASA, #WeMakeEvents and the BVEP want to encourage everyone to use specific SIC codes that will help us demonstrate our true combined value and contribution to global economies. This will in turn help governments understand the industry's worth and encourage more support in general.

When do companies declare which SIC code they are using?
Most SIC codes are added at the point of companies submitting their end-of-year returns. In many cases, the same generic category code is used by accountants, such as manufacturer, supplier, etc. However, these generic codes are not specific to events and don't contribute towards the perceived economic value of our industry.

Which codes should we use?
We have isolated some specific codes that could be used to start to create a spike needed to demonstrate our worth. More information about specific codes is on the PLASA website, but the most suitable for those working in the supply chain is 90020, currently classified as 'support activities to performing arts'.

What can I do?
Spread the word! Ask your accountant, or take action yourself and add one of the suggested codes to your confirmation statement (annual return). You don't have to wait - you can use the code right now. If you have used a generic one in the past, you can continue to do so alongside our suggested codes.

Who should take action?
Company owners, financial and managing directors and company accountants.

www.plasa.org/sic-codes

100% WIRELESS

www.astera-led.com/ax9

ASTERA

THE NEW AX9 POWERPAR

AX5's Big Brother – Twice as bright!

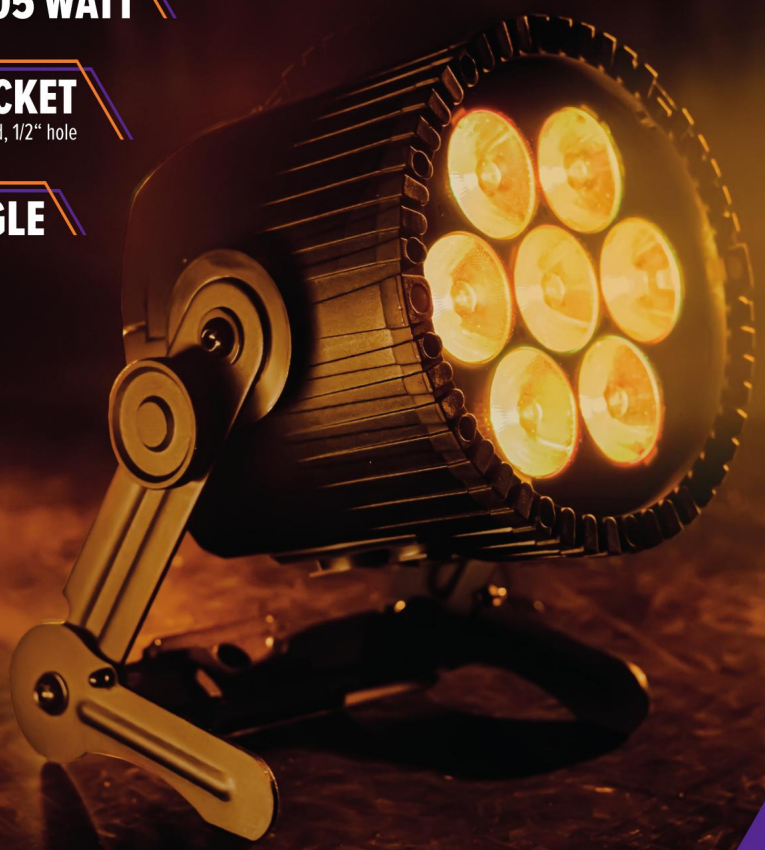
The AX9 utilizes the AX5's successful 3-in-1 concept which allows it to be used as wireless light and elegant uplight as well as a wired PAR light for longer or bigger installations. This makes it an extremely cost-efficient light and keeps your investment to a minimum. The AX9 packs extreme brightness in a compact and light housing while giving you industry-leading colors and white tones thanks to its Titan LED Engine.

Max. 20h | App | Wireless DMX | IP65

105 WATT

OPTIMIZED BRACKET
with Airline Track, 3/8" thread, 1/2" hole

13° NATIVE BEAM ANGLE



AX9 POWERED BY
ASTERA TITAN LED ENGINE

TITAN LED ENGINE

RGB+MINT+AMBER
FULL SPECTRUM

1750K - 20000K
WIDE CCT RANGE

TLCI/CRI Ra ≥ 96
EXCELLENT COLOR RENDERING
from 3.200K to 6.500K

RGB, HSI, X,Y & FILTER GELS

KEYPAD
with dedicated brightness & color buttons

3-IN-1:
WIRELESS PAR | WIRED PAR | ELEGANT UPLIGHT

Eurovision dazzles in Turin

LSi discovers how the 66th edition of the Eurovision Song Contest quite literally found its sparkle . . .

[Italy] *The Eurovision Song Contest (ESC)* returned to its full splendour for its 66th edition this May. Held by the EBU in the Italian city of Turin, the televised spectacular had almost a full audience in attendance once again, following several years of disruption caused by the pandemic. Even the continuing horror of war in Europe failed to affect the event, in fact only serving to intensify the joy, the magic and the music that *Eurovision* brings to the world every year.

The stage design in Turin's PalaOlimpico centred around *The Sun Within*, designed by Francesca Montinaro, with a concept inspired by the light of a kinetic sun. The multilevel stage set-up was complemented by waterfalls, large LED video walls and - as always - an impressive array of lights and special effects.

With the show on its home turf, Italian lighting manufacturer Claypaky was there with over 400 fixtures, including 120 Sharpy X Frame, 64 Xtylos, 25 Mini Xtylos, 42 Arolla Profile HP, 25 Stormy CC and 144 Sharpy Wash units. Particularly prominent were the new Claypaky Sharpy X Frame hybrid lights, which flanked the two side catwalks that led from the upper stage down to the stage below. Meanwhile, the compact Mini Xtylos HPEs were fitted in unusual places, including inside the stage-side trapdoors, from which sharp blades of coloured light shot out.

Photo: Nathan Reinds

Photo: Nathan Reinds

ADDED SPECTACLE

To bring a kaleidoscope of SFX to the stage, Luca Toscano, CEO of Artech - a group of companies specialising in delivering SFX and show solutions - teamed up with Lucas Gerritzen of Pyrofoor de Amsterdam who supplied the FX for the 2021 show in the Netherlands.

Appointed by this years' host broadcaster RAI Television as the SFX, pyro and laser supplier for ESC 2022, Toscano sees the event as "a glorious celebration of the entertainment industry - a showcase for the best of the best". Across the two companies, more than 20 people were involved in delivering the dizzying array of SFX for the event. Flames, smoke machines, CO2 launchers, spark machines and close proximity pyrotechnics were all part of the package that was offered to the delegations to enhance and excite their *ESC* performances.

"Each delegation has its own director and artistic director," explains Toscano. "They have a list of the special effects we can supply for them along with the positions embedded on the stage area. Of course, it depends on what each entry has in mind for their visuals. Not everyone will choose to employ SFX - it is entirely up to them - but our team work tirelessly to create the ultimate visual extravaganza for each and every artist."

The effects were programmed and delivered through two grandMA3 consoles by SFX operator and project manager Marco Malatesta and pyro operator Vitor Machado under the supervision of Paul Philipsen. The SFX team also included Pieterjan Ruysch on lasers and Fabio Cimetta in charge of logistics along with technical stage manager Gaetano Corriere. The event was directed by Duccio Forzano and Cristian Biondani, with Mario Catapano as lighting director.

LASER MAGIC

The list of consumables deployed for tests, rehearsals and shows is extensive, comprising more than 2,878 pyrotechnic shots, 100kg of confetti, 530 litres of various smoke fluids, 21kg of flammable gas, 1,228 litres of flammable fluids, 20kg of Sparkular powder and a whopping 742 CO2 tanks.

The laser element of the show came via six Kvant Spectrum 30W and four Clubmax 10W. For added magic, the opening and closing of the televised final featured a special laser effect which could only be seen by the TV audience. Artech FX laser operator Pieterjan Ruysch explains: "Laser banding is a live camera effect where the laser creates tunnels of ribbons or bands in mid-air. We move a laser dot so fast that the laser spot moves as the camera updates its image, achieving 'magical' laser ribbons in mid-air. It may appear like AR (augmented reality) but it is the laser doing the work."

The visual splendour on show at the PalaOlimpico is a testament to the resilience and determination of the entertainment industries and proved it is back with a bang.

As Toscano says: "Eurovision is a celebration of our industry and was one of the most challenging projects we've ever achieved at Artech. It was a wonderful opportunity to create a mixed, dynamic crew and cement our teamwork with Lucas Gerritzen, managing director and owner at Pyrofoor de Amsterdam."

Photo: Nathan Reinds

On the night, Ukraine's Kalush Orchestra took home the prize, further boosting the feel-good nature of the show. And in an unexpected twist, the UK bounced back from 2021's "nil points" to finish in second place, thanks to a stomping performance by Sam Ryder, with lighting design and visual work for his performance by Mandylights, Black Skull Creative, Light Initiative and Setstage.

www.artechfx.com
www.pyrofoor.com
www.claypaky.it

A rare and exciting opportunity to join the team at LSi ...

PLASA Media is looking to fill the role of **Assistant Editor** in a team producing both LSi magazine and its popular daily news website - www.lsionline.com

The successful applicant will have a high level of literacy and an excellent eye for detail, a knack for spelling and punctuation and a proven ability to write clear and concise English. They will be presentable, confident and outgoing, good at operating within a team, and able to cope with the demands of production deadlines. The applicant must also be able to demonstrate a good level of computer literacy.

The position offers excellent long-term opportunities for career progression and for national and international travel, working for PLASA in a fascinating and varied industry.

Role Overview:

Working with the Editor, the Assistant Editor is responsible for assisting in planning, generating, processing and developing the editorial content of LSi and associated online media; is able to prepare editorial content to the very highest standard, ready for print, ensuring factual accuracy and consistency of style; and is able to progress magazine production and field all editorial enquiries in the editor's absence. The successful candidate will be required to partake in national and international travel.

Beneficial experience:

- Proven high level of English language and grammar
- Attention to detail, sub-editing and proof-reading skills
- Strong, creative copywriting skills
- Working knowledge of Adobe Photoshop, Adobe InDesign, Microsoft Office
- Excellent organisational skills and time management
- Strong interpersonal skills
- Social media skills
- Technical writing ability would be a benefit

More information: www.lsionline.com/jobs

LSi

the industry's favourite

Please apply with your CV and include a 500-word sample of original factual reporting on a subject of your choice, to:

Claire Beeson, Editor
claire.beeson@plasa.org

Fit for the future

LSi discovers how York St John University has benefitted from a flexible light and sound installation in its recently opened Creative Centre . . .

[UK] Established in 1841 as a Diocesan College, York St John University occupies a large urban campus in the historic cathedral city of York. Achieving university status in 2007, it is one of several higher education establishments in the UK that have religious foundations being part of the Cathedral Group of Universities, and is one of the fastest growing universities in the UK.

Spanning three floors, the university's recently opened Creative Centre features a 200-seat auditorium and 2,600sq.m of flexible, specialist teaching space. The space has been designed with sustainability and adaptability in mind by leading environmental architects Tate + Co, and demonstrates a commitment to students, the wider community and the creative industries in the region. The voluminous 550sq.m glass and timber atrium commands expansive views over York Minster and the city and will be used as an exhibition space as well as a flexible foyer to host musical and theatrical performances, film screenings, lectures and events.

Wrapped in a sculptural timber cladding system, the auditorium is the centrepiece of the Creative Centre's flexible teaching and training facilities, with its retractable seating arrangement providing a flexible space to support multi-disciplinary and technology-driven creative collaborations.

In addition to the main auditorium, a whole floor of the Creative Centre provides the latest high-specification hardware for computer science, software engineering and games development in purpose-built teaching rooms. Critical listening and screening rooms for music production allow students to make use of the media production courses that teach them to make films, documentaries and movies, and a film and TV studio is used for media production courses, news and journalism. Meanwhile, music practice rooms and performance recital rooms are at the disposal of students who are involved in playing in bands and putting on concerts.

Photos: Martin Reid

The Creative Centre's facilities are also available to rent by the public for a variety of uses such as conferences, lectures, award ceremonies, and presentations.

EARLY ROADBLOCKS

Huddersfield-based Sound and Light Concepts worked alongside acoustic consultant Sound Space Vision and main contractor Kier Construction to install a comprehensive and wide-ranging production sound and lighting package that includes loudspeaker systems, mixing consoles, audio and data networks, intercom and paging systems, as well as video infrastructure.

The scope of works set out by Sound Space Vision, although substantial, would have presented no particular difficulties under normal circumstances, but the combined influence of the COVID pandemic, atrocious weather and serious component supply delays compounded by Brexit, conspired to throw up roadblocks from the beginning of the project.

"Our biggest constraint was time," opens Sound and Light Concepts project manager, David Kelland. "We were allocated site work by Kier from March through to September 2021, but equipment was difficult to source and delays by other contractors meant that we didn't actually start work until late July. In addition, unexpected budget reductions meant that we had to value-engineer several items, such as downgrading the main audio console and curtailing the total channel count for the auditorium."

But despite the lengthy delays that dogged the front end of the project, construction and

The Tate + Co-designed building has a textured facade with various timber finishes

Inside, a Yamaha QL5 digital mixing desk is available at FOH

installation work continued apace throughout the summer of 2021, and commissioning was eventually completed smoothly at the end of the year in less than two weeks.

EXPANSION OPTIONS

Given the reduced budget allocated for the project, a decision was made from the outset to put broad-based infrastructure in place to accommodate future expansion. This means that additional or updated equipment can be integrated quickly and easily into the overall AV system in what will essentially function as a plug-and-play approach. "A great deal of thought went into designing the technology infrastructure so as to allow for maximum flexibility, and for the simple integration of industry standard equipment in the future," Kelland explains. "As the Creative Centre - which is primarily a teaching and learning space - grows with the demands of new teaching courses geared to the University's dynamic curriculum, so will the production facilities be able to keep pace with their needs."

The production facilities' specification allows for virtually limitless expansion as future demands increase, providing a backbone of connectivity that can easily be accessed. Over 150 AV patch panels and a similar number of production lighting panels are distributed widely throughout the building, giving access to mains power, data, audio networks, LX data and technical power. More than 10km of video, audio, power and data cable was installed over a five-month period to connect the myriad of separate components, with all cables separated by type. AV and lighting devices of any kind can be plugged in to the patch panels practically anywhere in the building and integrated into global networks without the need to bring in portable and potentially incompatible equipment.

DISCREET SYSTEM DESIGN

The audio brief called for a high-quality loudspeaker system capable of natural sound reinforcement for speech and musical events as well as multi-channel effects playback, and specified full-range loudspeakers to be installed at stalls and balcony level of the auditorium. EM Acoustics' recently released R10 compact two-way speakers more than met the spec' and are unobtrusive against the auditorium's woodwork as main left and right speakers, with a further pair of R10s installed at balcony level suspended from the lighting bridge. There is also provision for subwoofers to be added to the main system at floor level, and for stage monitors to be connected as and when needed.

The auditorium loudspeakers are powered by EM Acoustics DQ series amplifiers, with additional capacity available in the equipment racks and with

"We've barely dipped a toe in the water in terms of what we can do creatively. What we're able do in there is phenomenal, it's limitless . . ."

- Hugo Glenwright

Photos: Martin Reid

"The production facilities' specification allows for expansion as future demands increase . . ."

pre-installed cabling to accommodate further amplifiers to power additional speaker systems, subwoofers and monitors.

The 100V line paging system consisting of Adastra sound projector speakers, and Biamp bi-directional paging loudspeakers take care of voice announcements; these are powered by Yamaha amplifiers. At FOH, a Yamaha QL5 console and a Rio stagebox provide 32 channels of audio, all running on Dante, and that integrates into the AV lectern system.

On the lighting side, an Ion Xe compact console from ETC offers 2,048 channels of control for the ETC and Chauvet Professional stage and show lighting rig, and for the LED fixtures which give the flexibility to change colour on the fly. Various pre-designed room modes of audio and lighting can be called up via the Extron network touch panel from FOH or another data panel.

LIMITLESS OPPORTUNITIES

According to the Creative Centre's digital media manager Hugo Glenwright, the design of the space is "geared towards future-proofing the investment, and that gives us flexibility to adapt and expand as rapidly moving technology opens up new possibilities and as course requirements change. The concept will allow the space to match the creativity of the content that's going in there in ways that would not be possible without the comprehensive infrastructure already being in place. So, if we might have a new course or a student that decides to do something new or differently, the high level of flexibility allows us to accommodate and work on that.

"During the few weeks we've had the run of the space, we've run several events already but we've barely dipped a toe in the water in terms of what we can do creatively," says Glenwright. "What we're able do in there is phenomenal, it's limitless. Sound and Light Concepts coped with the challenges really well. We were shoulder-to-shoulder with Dave and his team who worked with us to give us exactly what we needed, even for an event that took place mid-way through construction. It was great having that one-to-one time with them to understand how it's all integrated."

"As my input into the Creative Centre auditorium is essentially the teaching element, it was the integration into the theatre side of things that was key for me because what we need is a space that can be a professional theatre one minute and a teaching space the next," he continues. "That integration is really important for us, and Dave and his team put that all together really seamlessly. The whole system can be transformed so quickly, as fast as you can clear the stage - by the time you've taken all the set out and swept the stage, you can be teaching in it the next minute. And it's great that we're teaching on equipment of a professional standard, so that the students can learn on something that they would encounter in the real world."

Concluding, Glenwright says: "I'm incredibly happy with it. Obviously as a tech I would have preferred to spend even more and put even more kit in there, but I've run three events in there so far which I've really enjoyed - it's a really great space to work in, so I'm really happy with the outcome."

www.soundandlightco.com
www.soundspacevision.com

EM Acoustics R10 two-way speakers, driven by DQ power amps, are used in a L/R configuration in the auditorium

Change is not evident,
RESULTS ARE.

www.dts-lighting.it

DTS

A marvel of flexibility

Gareth Owen explains how he deploys a specific loudspeaker to achieve the same sonic quality across a diversity of theatre productions . . .

[UK] Positivity and joyfulness are central messages of many a musical production conceived to uplift and entertain its audiences. These sentiments also ring true for *Joseph and the Amazing Technicolor Dreamcoat* and *Singin' in the Rain*, two well-established productions that are much-loved staples on the international musical circuit.

Currently running simultaneously in the UK, *Singin' in the Rain* is a homage to 1920s Hollywood, featuring dazzling dance moves and delightful orchestral music, whilst *Joseph* is a fun and energetic adventure-boasting earworm-worthy pop tunes and colourful costumes. Both shows' sound design is the work of Olivier Award-winning sound designer Gareth Owen, and utilise d&b audiotechnik's Y-Series.

Despite having completely different musical genres and storylines, the two shows share "virtually identical sound designs," as Owen explains. Each system consists of a Y-Series line array - L/R proscenium hangs, with Y point-source centre clusters, E6 delays and front-fills, and V-SUBs, all powered by D20 amplifiers. "It's a powerful system delivering great audio quality in a compact box," he explains. "It's the power-to-size ratio that makes this such a versatile product. We proved this when we incorporated a couple of Y point-sources into the iconic DeLorean for *Back to the Future*, currently running at the Adelphi Theatre in London. I didn't think they'd deliver the necessary output for the sound effects, but they did."

Photo: Tristram Kenton

RIGHT AS RAIN

Both *Singin' in the Rain* and *Joseph* have their own special elements that Owen had to take into consideration with his sound designs. On the former, 14,000 litres of water pour onto the cast, resulting in memorable dance scenes - splashes, kicks and drips included - not only soaking the cast and the first few rows of the audience, but the loudspeakers too. "During the water scenes, the front-fills and backs of the line arrays get their fair share of water on them," says Owen, "but they are super robust and handle the 'bad weather' very well."

All standard Y-Series cabinets are built from marine plywood and have an impact- and weather-protected PCP finish; they house two 8" LF drivers and a 1.4" compression driver. "The Y-Series is well-suited to reproduce the nuances and pureness of the voices of the 24 strong children's choir in *Joseph,* just as much as the subtle notes of the live orchestra for *Singin' in the Rain*," Owen explains.

Doing justice to the orchestral nature of *Singin' in the Rain* was also a priority for musical director and supervisor, Robert Scott. "I wanted the show to sound authentic - '50s orchestrations - a real 'big band' feel - it had to sound as acoustic as possible. This was made more difficult in where the band were situated - behind the action; they couldn't be in the pit as they would have got very wet!"

Photo: Johan Persson

THE PRACTICALITY FACTOR

For David Andrew Wilson, head of music at The Really Useful Group, working with Owen and using d&b is a trusted choice. "I have worked with Gareth many times over the years, including on *Joseph*. I work very closely with the sound department on any show to ensure that the music is delivered at the highest possible standard. Gareth's expertise in live sound is excellent and he always has various solutions to discuss with me to achieve the vision for what we are trying to do musically."

Both Wilson and Scott are delighted with the audio results thanks to Owen's sound design. Scott says: "All of the sound department were acutely aware of how I wanted it to sound, and the end result was fantastic. So much great feedback from the audience too."

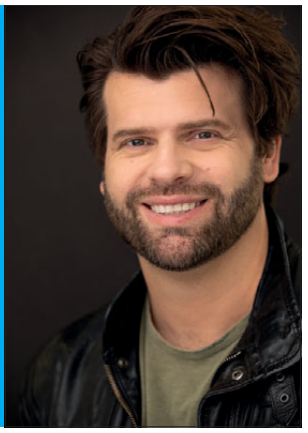
In addition to its sonic qualities, the Y-Series is "extremely easy to deploy" according to Matt Peploe, associate for *Singin' in the Rain*. "As these two shows aren't stopping anywhere for too long, the practicality factor was important in the choice of sound design," says Peploe. Andy Green, associate for *Joseph*, chimes in: "It's a great piece of kit to own. If I were a rental company, I'd buy loads of it."

Phil Hurley, managing director at d&b rental partner and equipment supplier Stage Sound Services, says the system continues to be in-demand across the board. "The Y8s and Y12s are our most popular line array boxes that effortlessly deliver to the highest industry standard," he explains. "We first purchased them in 2015 and hardly see them in our warehouse as they tend to be out on some tour or other all the time."

Whether the system will continue to find a place on Gareth Owen's shows, the sound designer says: "I also used this system design for *Bat Out of Hell (see LSi June 2018)*. Again, a totally different musical genre with heavy metal and rock and roll songs, yet the Y-Series managed to cope with all that ferocity beautifully. It really is a marvel of flexibility. I'm sure I'll use it plenty more often in the future."

www.dbaudio.com

"I wanted the show to sound authentic – a real 'big band' feel. This was made more difficult with the band situated behind the action; they couldn't be in the pit as they would have got very wet!"



AUDIO

JBL expands Control Contractor series

[USA] Harman brand JBL has expanded its Control Contractor series of installed audio solutions. New products include wall-mounted speakers, pendant speakers and landscape speakers and subwoofers. All products feature premium multitap transformers for use in distributed systems, and are switchable for direct operation.

The Control 68HP provides clarity and consistent coverage in rooms with open-architecture ceilings, spaces with challenging acoustics and other locations requiring especially high SPL capability from a pendant loudspeaker. Its drivers feature an 8" Kevlar-reinforced low-frequency driver with a high-powered 2" voice coil.

Other new products include the compact, weather-resistant GSF3 (two-way coaxial 3") and GFS6 (two-way coaxial 6") aimable landscape loudspeakers for outdoor applications. Both models can be extended further with JBL's new GSB8 and GSB12 landscape subwoofers. Meanwhile, the Control 89MS is an IP56-rated subwoofer that features a long-throw 8" driver and augments the low-frequency performance of the JBL Control 80 Series. Finally, the SLP12/T and SLP14/T loudspeakers provide broad, consistent coverage for indoor applications requiring a close-to-the-wall form factor.

www.jbl.com

Clear-Com adds HelixNet integration for Arcadia

[USA] Clear-Com's Arcadia Central Station now offers new features, including integration with HelixNet Digital Partyline, providing support for over 100 beltpacks and 180 ports of mixing capability. In a 1RU package, Arcadia powers Clear-Com's wired and wireless analogue and digital intercom systems, together with Dante connectivity, supporting the broadest range of wireless solutions with 1.9GHz, 2.4GHz, and 5GHz systems working together simultaneously. This latest set of features also includes a 5GHz scanning tool for FreeSpeak Edge systems, along with increased beltpack capacity for FreeSpeak systems and an increase in licensed port capacity.

www.clearcom.com

Austrian Audio debuts dynamic vocal mic

[Austria] Austrian Audio announced the OD303 dynamic vocal microphone at the recent NAMM tradeshow, describing the mic as "well-balanced and open." The OD303 will withstand daily use in the rehearsal room and also the wear and tear of the road thanks to its die-cast housing. It also incorporates Austrian Audio's Open Acoustic technology which delivers an optimally-shaped supercardioid polar pattern across a wide frequency band and with "excellent feedback stability." In addition, the proprietary 3D Pop Noise Diffuser, developed by Austrian Audio, reduces noise caused by plosive sounds.

www.austrian.audio

All the latest business, people, project & product news available daily at : www.lsionline.com

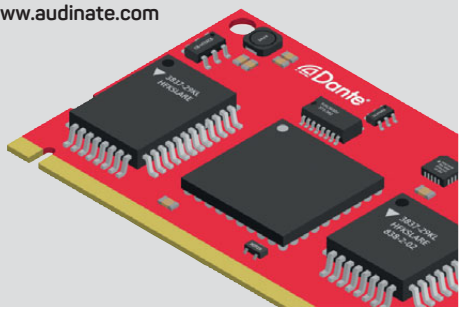
Daily news: www.lsionline.com

Audinate debuts Dante Brooklyn updates

[USA] Audinate has introduced the Dante Brooklyn 3 audio networking module and Dante Fremont 3 AV networking module. Both are pin-compatible replacements for the popular Dante Brooklyn 2 and Dante Fremont modules and have been redesigned to ensure continuous availability while delivering support for current and future Dante features. Samples of both modules will be available to manufacturers in Q3 and will start shipping in production quantities in Q4.

The Dante Brooklyn module family is the most widely deployed implementation of Dante, and is used in hundreds of mixing consoles, DSPs, amplifiers, and more. The Dante Brooklyn 3 audio module is available in 8x8 to 64x64 channel SKUs, delivering ultra-low latency networked audio in a small footprint and supporting the complete suite of Dante audio features. Meanwhile, the new Dante Fremont 3 supports low-latency Dante AV over IP along with 8x8 channels of Dante audio for use in encoders, decoders, PTZ cameras, AV-over-IP monitors, format converters and matrix products.

www.audinate.com



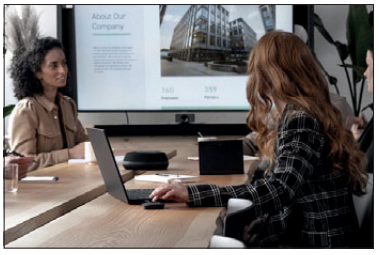
Lectrosonics debuts digital slot receivers

[USA] Lectrosonics has introduced the DSR and DSR5P dual-channel and DSR4 quad-channel digital slot receivers. All are compatible with existing Lectrosonics mono and stereo digital transmitters and are backward compatible with any of the Digital Hybrid Wireless transmitters made in the past 20 years. The DSR and DSR5P receivers provide two independent receiver channels while the DSR4 provides four at the highest level of RF and audio performance available, with versatile feature sets and next-generation capabilities in the Unislot/Superslot form factor for ENG (Electronic News Gathering), field, and location production.

Both receivers are offered in several tuning ranges including A1B1 (470-614 MHz), B1C1 (537-692 MHz), 941 (941-960 MHz for use in North America) and 961 (961-1,015 MHz for use in the UK). Settings can be made from the front panels which feature high-resolution displays, making the units suitable for use in portable bag systems, mounted in or on cameras, and on sound carts. An RF spectrum analyzer and SmartTune are built into the receivers to alleviate interference problems in an increasingly congested RF spectrum.

www.lectrosonics.com

Shure and Barco collaborate on Stem Ecosystem



[Europe/USA] Microphones from Shure's Stem Ecosystem, including Stem Wall, Ceiling, Table and Hub, have received full certification with Barco's ClickShare conference room system. With this certification, Shure and Barco have partnered to make it easier for users to seamlessly turn any Bring Your Own Device (BYOD) meeting space into a fully-integrated hybrid meeting environment, where they can combine the high-quality audio of the Stem Ecosystem with easy-to-use wireless conferencing.

"With this certification for Shure's Stem Ecosystem devices, we are pleased to provide our customers with an excellent audio solution that seamlessly integrates into their hybrid workplaces," said Johan Pirot, product manager ClickShare alliances at Barco. "Combining our two solutions, users can operate video conferencing systems and collaboration tools that give them the freedom to connect, collaborate, and wirelessly share content from anywhere."

www.shure.com
www.barco.com

Waves extends commercial audio line

[USA] Waves Audio has introduced the CA3000-MX commercial audio mixer. CA3000-MX offers mixing and built-in processing, plus the option to expand processing by adding plug-ins from Waves' large catalogue. The CA3000-MX system is compatible with standard ASIO audio or Dante network configurations and is suitable for corporate, commercial, government, educational or house-of-worship installations that demand a high level of audio quality and advanced processing flexibility. Housed in a 2U rack-mount chassis, CA3000-MX couples a powerful digital audio processing engine with an install-ready version of the Waves eMotion LV1 mixer, supporting up to 32 stereo inputs, 24 stereo aux mix outputs plus L/R/C/M outs, and a 12x8 stereo matrix. Also new are updated versions of the Waves CA1000 and CA2000 commercial audio DSP engines, now featuring more integration options.

www.waves.com

Yamaha launches VXH pendant speakers

[Europe] Yamaha's new VXH series is designed for use in a wide range of commercial spaces where pendant speakers are the preferred solution. Suitable for high, open structure and sloped ceilings, the VXH series comprises two models, the VXH6 and VXH8, engineered for optimum background music and voice reproduction. Featuring a 120° dispersion pattern, the 6.5" VXH6 has a peak power handling of 300W and is designed for use where the speakers are to be suspended at a relatively low level. The 8" VXH8 has a narrower dispersion pattern of 75° and a higher peak power output of 360W, for higher suspended positions. Users can mix and match both models, as well as with other Yamaha speakers, to achieve the best sound and coverage for any application.

www.yamaha.com

Discover how to enter your innovative new products for the PLASA Awards for Innovation : www.plasashow.com/awards

LIGHTING & VISUALS

Brompton adds features to Tessera

[UK] Brompton Technology has announced two major feature advances - Extended Bit Depth and Stacking - as part of its Tessera v3.4 software release. Extended Bit Depth unlocks higher PWM bit depth output with a free firmware update for all existing and new panels fitted with the Brompton R2 or R2+ receiver card. Up to 3.3 additional bits of precision improves low-brightness performance - reducing visual artefacts and bringing out additional detail and nuance in dark areas of the image. "This substantial increase in dynamic range offers a significant boost in performance that is hard to ignore for ICVFX and other LED on camera applications," the company says. With Extended Bit Depth, users can also reproduce HDR content up to 10 times darker than previously possible, without compromising peak brightness for HDR highlights.

Many setups utilise multiple processors working together to drive different parts of a single LED screen. The second new feature of Tessera v3.4 - Stacking - which is available on Tessera SX40 and S8 processors, allows multiple processors in a setup to be controlled in unison. Tessera v3.4 is now available as beta software for evaluation.

www.bromptontech.com

ADJ expands COB Cannon series

[USA] ADJ has expanded its COB Cannon Series of LED wash fixtures with the COB Cannon LP200ST. Featuring a powerful light engine, smooth colour mixing and a wide beam angle, the flexible LP200ST harnesses the power of an efficient 200W COB (Chip On Board) LED light source, which generates a potent and even output with no colour shadows. This efficient light engine combines red, green, blue, amber and lime LED chips to allow the creation of a large range of colours, as well as white light with a variable colour temperature of between 2300K and 9900K. The inclusion of the lime LED chip helps certain colours to appear more vivid and also boosts the CRI to in excess of 90. Offering a wide native beam angle of 80°, LP200ST is also supplied with a useful lens kit comprising both 40° and 50° lens options. Barn doors for directing the light output are also available as an optional accessory.

www.americandj.eu

ARRI expands Orbiter offerings

[Germany] ARRI has added the Orbiter Fresnel lens to its already large pool of Orbiter optics, making this LED luminaire even more versatile. Combined with Orbiter's ARRI Spectra light engine, the high-end optical system is suited for cinematic application, broadcast studios, as well as theatres or live productions. Creating a precise light spot with a soft single shadow, the new Orbiter Fresnel lens delivers true Fresnel output with a real Gaussian field of light. The light output of Orbiter with Fresnel lens is comparable to the ARRI L-Series L10 and True Blue ST2/3 with 2000W Tungsten bulb.

www.arri.com

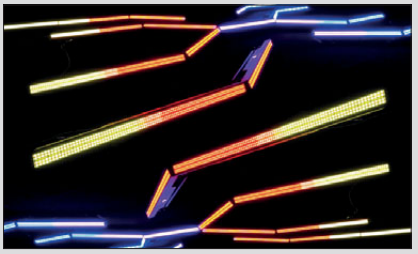
Prolights releases compact battery soft light

[Italy] Prolights has debuted the EclNanoPanel TWC, the smallest member of its successful EclPanel range, containing all the features of the larger format soft lights in a compact, battery-operated luminaire. The new fixture has a 30W RGB+WW source, producing a powerful 1,800lm output. It includes the same colour technology as other soft lights in the ECL range, "producing rich colours, high-quality white tones, colour gel matching, and onboard pixel cinema effects," says Prolights. The EclNanoPanel TWC has a long-lasting battery, with selectable battery-life options, balancing a bright output for a shorter time (approximately two hours at full) to a run time upwards of 18 hours. The fixture recharges with a USB-C connector in under three hours.

www.prolights.it

All the latest business, people, project & product news available daily at : www.lsionline.com

Claypaky introduces Tambora Linear



[Italy] Claypaky has expanded its Tambora family of LED bars with Tambora Linear, a line of static LED pixel-mapping bars designed for versatile lighting effects and artistic set decoration. The hybrid bars incorporate two effects in one fixture, with a system of 400 RGB LEDs providing background light similar to that of an LED wall, and a central line of 200 powerful white LEDs offering a punchy strobe effect. All graphic content can be managed through Advanced Layers Management, an exclusive feature of Claypaky LED bars, with which users can select different levels of effects simultaneously.

Tambora Linear 100 features a large number of built-in effects and can be used in either advanced mode or simple mode for whenever a media server is not available, or the installation requires a speedy solution. The Tambora Linear can be easily connected with multiple units and then operated as one complete fixture from the control software, says Claypaky.

www.claypaky.it

disguise releases vx 4+ platform

[UK] disguise has released its new flagship media server: the vx 4+. With the capability to handle twice the amount of video layers compared to its predecessor, the new vx 4+ machine ramps up storage performance and significantly improves video throughout, with up to 100GbE in bandwidth for higher resolution live video.

Integral to the disguise modular ecosystem and working with disguise VFC cards, rx render nodes and preconfigured network switch fabric, the vx4+ is designed for projects in need of a robust and scalable solution. The inclusion of two 100GbE network ports and 12G video capture as standard enables the vx4+ to be used for 4K xR compositing alongside a cluster of rx render nodes.

www.disguise.one

Daily news : www.lsionline.com

RIGGING, STAGING & ACCESSORIES

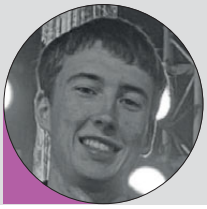
Le Mark releases Dirty Rigger set markers

[UK] Flooring, tapes and labels specialist Le Mark Group has expanded its offering with a new line of British-made Sausage and T-bar markers from Dirty Rigger. The new products deliver practical marking and rigging solutions for outdoor events and filming, as well as for busy theatre environments.

The flexible, hard-wearing, colour-coded Sausage markers are made from tough webbing and weighted with stainless steel shot. Robust but soft to the touch, their design includes a sturdy brass eyelet at one end, which can be quickly and securely spiked in precisely the right spot.

Meeting the needs of outdoor filming work, the range is broadened by the similarly constructed T-bar version, which is used to mark positions precisely and securely for actors, cameras, and dollies in exterior locations - essential for maintaining consistency from take to take.

www.lemark.co.uk



early stagers

Graeme Smith, Royal Central School of Speech and Drama

"Reaching out to professionals and asking for advice or to shadow them helps to build contacts, which makes a huge difference when you finish university . . ."

Name, age, place of study & course?
Graeme Smith, 21, Royal Central School of Speech and Drama, Lighting Design

What attracted you to this business?
I've been interested in lighting since school - I was always more intrigued by the lighting when I went to the theatre rather than what was happening on stage. When I was in my final year of school, I started looking at what I could do next to pursue a career in lighting.

What do you think of the course?
I've really enjoyed my three years at Central. I've got a lot out of it, not only in terms of experience, but also in contacts that have allowed me to gain freelance work. The course has enabled me to gain experience in a variety of different roles, including as a lighting designer, assistant lighting designer, programmer and video system designer. This has given me valuable insight that I would like to take forward into my work.

What work experience have you had?
I am currently working at Regent's Park Open Air Theatre for their summer season in the lighting team. As a freelancer, I've worked mainly in theatre, including *Cabaret* at the Playhouse Theatre *(see LSi March 2022 for a production report)* and *Prima Facie* at the Harold Pinter Theatre. As well as production work, my lighting design work includes *London Road* at Embassy Theatre and *Dusa, Fish, Stas and Vi* at St Peter's Hall.

Who has been your biggest mentor/s?
One of the mentors I have had that has influenced my work and approach to work the most is David Kidd. David was my mentor when I designed the lighting for the musical *London Road* that ran at the Embassy Theatre in Central. His advice on communication - how to approach issues and problems - helped to shape my practice a huge amount and therefore has stuck with me the most.

What's the most valuable lesson you've learned so far?
Gaining the trust of your team is one of the biggest things to do within any team. As well as trust, good communication is the most important factor of teamwork and without it, the team fails.

What would be your dream project to work on?
I'd really like to progress with my associate work and gain more experience in this role.

What's the toughest thing about entering this business?
One of the hardest things I have found about entering the industry is getting your name out there. This is something that can only happen over time and through building contacts. However, getting your name out there is a really good lead into the industry and therefore, a good lead into work.

What's your experience of the industry's attitudes towards students?
My experience has been really positive. I've almost always had a response from industry professionals when I've contacted them. And when on freelance jobs, I've always felt welcome.

What advice would you give to anyone following in your footsteps?
To make use of the fact that they are a student while at university. Reaching out to professionals and asking for advice and to shadow them helps to build contacts, which makes a huge difference when you finish university.

Keep in contact with the visiting lecturers and industry professionals that give seminars, as they are really good contacts and sources of work. Also, fellow students are often the first to offer you work, or the first you would turn to when you need someone, so keep in contact with people from university.

What do you want your job title to be in 10 years' time?
I'd like to progress as an associate lighting designer, and do some lighting design work on the side whilst carrying on with freelance work on the side.

STATS

ROYAL CENTRAL SCHOOL OF SPEECH AND DRAMA

Location: London

Industry courses: (BA) Production Lighting, Stage Management and Technical Theatre, Set Construction, Theatre Sound

Industry links: White Light, SLX, PRG UK, d&b audiotechnik, DiGiCo, Autograph Sound, FRAY Studio

Industry relevance: "At Central, we put your future career at the heart of everything we do, and when you leave, you'll be a specialist in your subject - with the preparation you'll need to get work in a fast-moving performing arts industry."

www.cssd.ac.uk

onAir IP

FACE

THE ELEMENTS

ON LOCATION ?

ON REGARDLESS.

RAIN, HEAT, DUST OR SNOW,

GET READY TO GO

onAIR ANYWHERE

CHAUVET PROFESSIONAL

I suspect when we look back on *Life of Pi*, we'll see it as a marker for an inflection point in the way theatre technology is used in pursuit of making shows. Sure, all the elements it uses - the obvious ones, scenery, lighting, sound, projection, but also the less obvious ones, motion tracking of scenery or allowing the lighting designer access to the video system as virtual lighting fixtures - have been done before. But here is the coming together of all those things with the sense that they were almost expected by the creative team, rather than needing to be developed from scratch - and on a play, rather than on the big-budget musicals or spectaculars that have traditionally been the ones to benefit from all this.

It feels like this is becoming, well, normal. Though of course, you still need the skills and talent to know what to do with it. That's here in abundance, too.

The result, from an audience's perspective, is a wonderful evening of theatre - one where you can't tell where the work of one designer or department ends and the next begins. Where you are just immersed in a world that is alive, that is dynamic, that can dissolve from location to location through combinations of solid scenery, light, projection, puppets and, of course, human performers. One which - though it's almost pointless to consider, since this is now our present - would have had an incredibly different feel to it if staged even just a few years ago, when water would have been a projected light effect and stars maybe a bunch of fibre optics.

From the perspective of those who make shows, what feels most fascinating to me is that the technology has got to a point where now every department has the ability to riff, to present ideas quickly, to react to the ideas presented by others - even video, which has traditionally been stifled by the need to go off and re-render. All of the designers involved with the show that I spoke to - scenic and costume designer Tim Hatley, lighting designer Tim Lutkin, projection designer Andrzej Goulding, sound designer Carolyn Downing - talked about this. All seemed to revel in it.

SHOW

This is all in pursuit of telling the story of a boy, trapped at sea on a lifeboat, with a tiger. A story originally told in a novel by Yann Martel, then as a movie, and now in a new stage adaptation by Lolita Chakrabarti, directed by Max Webster, which opened in Sheffield pre-lockdown and finally made it into the West End at Wyndham's Theatre last November. It is the structure that the novel and film allow and the play has adopted that led to the design approach, rather than a desire to use technology for technology's sake, or even video for video's sake - albeit that both Hatley and Lutkin have become deeply immersed in the world of video over the last two years on this and their work together on the musical version of *Back to the Future*. "You don't know it's going to be a video show when you start," Hatley explains. "When you go through a design you always make a shopping list of what the priorities are. Here obviously the boat was major. The bed in the hospital room the show starts in was also major. But I remember thinking, do we want 10 beds? Do we make the boat by joining those beds together. You come up with all those sort of thoughts and ideas. But when you really start to analyse it, the answer was no, we really needed a real boat. The other thing I knew was that it's not particularly theatrical writing in the sense that it goes from scene to scene without scene changes, as most modern writing does - it's almost a film script. So, I knew we had to have the ability to dissolve from one space to another, to get from the hospital to the ocean seamlessly and in an instant, which video can do."

Photo: Johan Persson

LIFE OF PI

Rob Halliday reports on the Olivier Award-winning stage adaptation of Life of Pi that has pushed the limits of tech for theatre . . .

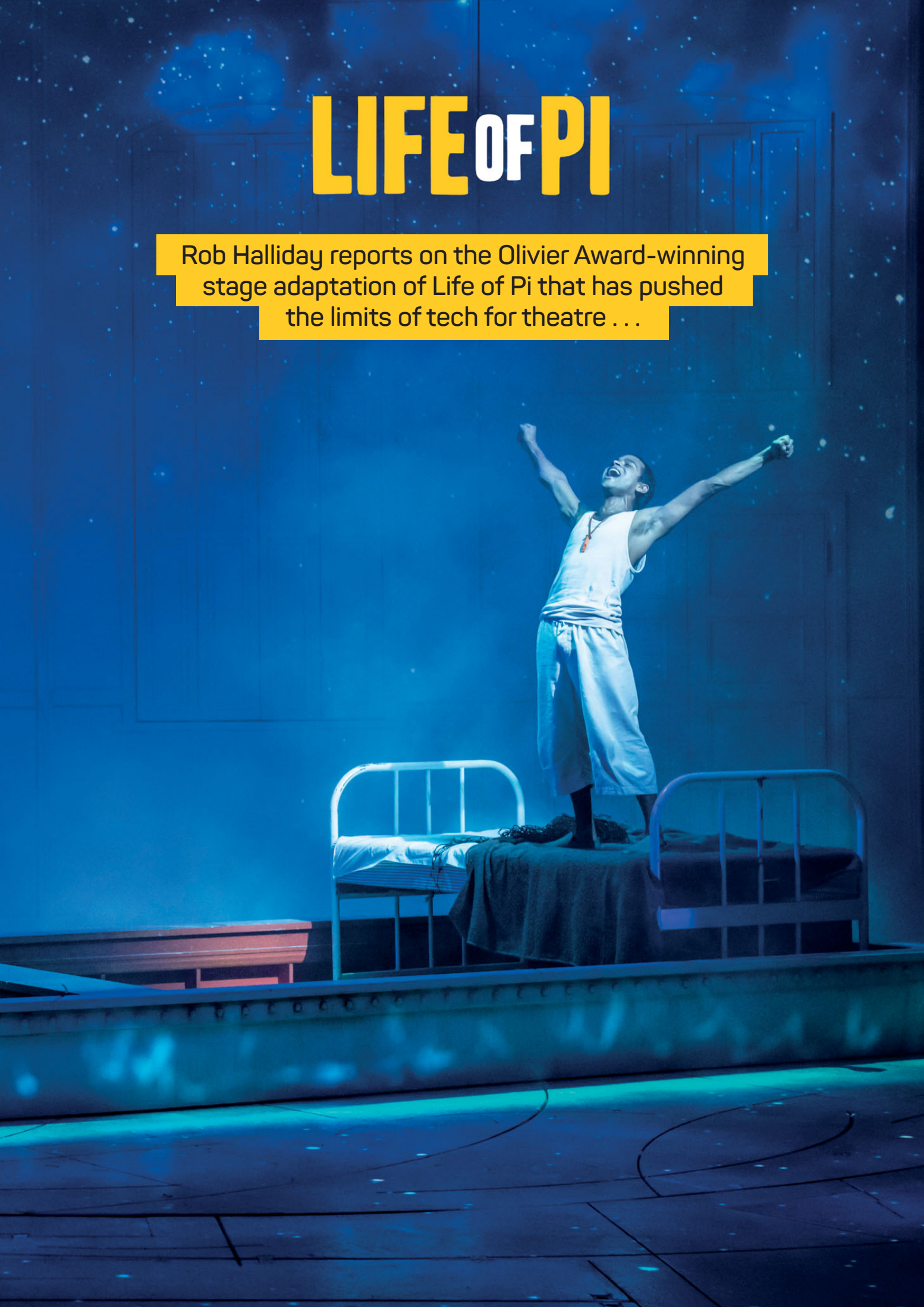


Photo: Johan Persson

Photo: Johan Persson

VISUAL

Hatley provides a core physical world: a floor, and an upstage wall which can track forwards and backwards, or split in the middle with each half rotating to create a central opening, or flipping all of the way around to present other worlds, particularly the ship that Pi, the central character, is travelling on with his family, until it sinks. Downstage of that is a revolve, and set into that is the outline of the lifeboat on which Pi survives, this sitting flush with the floor then rising up when needed. The floor has other secrets - an access trap upstage in the boat, a downstage trap, and a secret trap through which Pi dives as if into the water at one point.

This was all originally designed for the Sheffield Crucible's deep thrust stage, which also has space below it to accommodate all the required access and mechanics. This was harder to achieve in the West End: the design is foreshortened but still needed some depth, so the stage thrusts out through the proscenium and is lifted above the theatre's normal stage to give the space required below. That meant raising the stalls seating to match, which defined the theatres the show could go in to. "We needed the height under the circle to let us go up by a metre, which the Wyndham's has," Hatley explains.

As a bonus, it brings audience and actors closer together with less of the break from the proscenium picture frame, many post-pandemic shows having made similar choices. Theatre consultants Charcoalblue helped with studies showing how this might work. Ultimately, the raised seating wraps around the front edge of the stage, to give a sense of that Sheffield thrust, all achieved by teams led by production manager Simon Sturgess, production carpenters Rob Smith and James Stallwood, and set builders Miraculous Engineering, with Unusual on rigging duties.

On stage, the upstage tracking wall has detail and texture, but it and the floor are then finished in a carefully refined grey. This is light enough to support projection, while dark enough to avoid bounce from light and the projection itself.

Projection then shapes and defines the space: the opening of the show, with a single bed in the hospital to which

Photo: Johan Persson

Pi has been taken after being rescued, appears to have a beautiful, tiled floor. That's all projection. "That was me, made better by Andrzej," is Hatley's summary of the process that arrived at that floor. "I'd say that it'd be great to have a tiled floor; we'd come up with some artwork and some ideas, then Andrzej would take that and make it brilliant."

To enable his work, Andrzej Goulding "always makes a virtual 3D model of the set - that helps me get into the space, understand the surfaces, and lets us work out projector angles and the like. That's something I've always done since I was a set design assistant, and I find it really, really useful. It means I have a model that I can put the actual video that I'm building on to, to previz it, whether that's little animations or just drawings: I can just sketch over the model."

Unusually amongst video designers, who often are the figurehead of a team of animators, Goulding works with just a programmer and system designer (Dan Trenchard) and a system engineer (Mike Samuel), doing everything else himself. "Because I'm doing it all myself, everything is at my fingertips, so I can be very fast in tech. If the director turns and goes, 'can video help with this little moment', I just like to sketch something, so we can see if it's the right idea, rather than having to go away for two days to make something to come back and decide it doesn't work."

Here, his work includes adding almost incidental details to the set, particularly signage in the zoo scene that, through its carefully created, shadowing convinces

Photo: Johan Persson

you it's a real sign with depth. "It's an embossing technique," he explains. "Not too deep, otherwise they look fake." His work also ranges from precisely defining areas of the stage ("I can give a very sharp, well-defined outline to an area - again, just throwing it up on stage - then Tim Lutkin can fill it in a more blurry way with light, at different angles to light the actors and puppets"), to representing many elements of nature - foliage on walls, clouds, lightning, stars and, in particular, many variations on water.

The water is created in several ways. "If you mix real with animated, you always get the best results," Goulding notes. "Fully animated just looks animated, no

Photo: Johan Persson

"The overwhelming design choice was me wanting it all to be in the same world - to be in our imagined world . . ."

- Carolyn Downing

matter how good you are. I tried fully realistic water at one point, and it just didn't have the magic quality to it. But mash things together . . . The water I've animated is not realistic at all - I can do fluid simulations where the water hits the boat, goes around it, that kind of thing, but actually what you needed for the story is to be able to look at Pi in the boat with the tiger. The water is in your peripheral vision and needs to be something that's just constantly there, so I mixed it up in different layers, independently colour-corrected depending on the scene, and then we mixed it in with Tim's lighting and with whatever's on the sky. The relentless motion is all I really needed." The material is all ultimately rendered using a cloud renderfarm. Goulding is exploring generative techniques, "but they weren't really ready when we first did this show in 2019, and they'd also need more powerful and so more expensive playback systems than we can have on this show."

The playback system in use is a pair of base-level disguise solo servers, triggered by the lighting console and feeding eight projectors. These include four Panasonic RZ21ks blended across the floor and boat, chosen for good dimming from their laser engine system, and then two Epson L1755Us with their zero-offset X02 lens for the back wall (one downstage, one upstage), one L1755U FOH for the front edges of the boat, then an L1715 4:3 projector as a toplight to the boat. The Epsons also offer the advantage of going silent when not outputting. The equipment was provided by Stage Sound Services.

The video system receives position data for the wall (upstage/downstage position and rotation of the two halves) and the revolve from the show's Absolute Motion Control system, run by the automation team of Sloan Jorba and James Lynham. "We take the revolve data from the drive unit, which eliminates the jitter the team would sometimes see with the system they had in Sheffield when

Photo: Johan Persson

people jumped on the revolve," explains Absolute's Rob Raskovsky. "It also meant we could give them a rotation angle to three decimal places of accuracy. We also added position tracking to the wall, which they didn't have in Sheffield - this all goes from us to their disguise server using PosiStageNet." Beyond that and controlling the scenery - revolve, wall movement and rotation including slip detection, hydraulic boat and a drop-and-slide trap - Absolute also had to do careful work with interlocks, particularly on the traps in the revolve so that they could only open when the revolve was in its home position, and to ensure the revolve wouldn't turn if the wall was on top of it; their system was installed by Christopher Goode, Gareth Prentice and Seb Matthews, and programmed by Jesse Caie.

The video team use all of this data in a variety of ways. For the wall, it allows imagery to appear to move seamlessly with the wall. For the revolve it allows them to follow the boat, particularly with little details that make this feel real, such as continuing the water projection onto the front edge of the boat which might otherwise be shadowed. It also lets them provide the lighting team with a powerful tool: virtual lighting fixtures for the boat.

"These were in the video system but we had control of them from the lighting desk," Tim Lutkin explains. "One was a block of light lighting the inside of the boat, one the edge of it; another a halo around it. They automatically tracked the position of the boat on the revolve, but then we could change the colour and level of them. It was amazing to be able to do that in realtime - if we were looking at the boat at sea and felt like the inside needed to just be a bit brighter to fill the puppets in, we could do that even though it was coming from the projector." Lutkin is quite at home in this brave new world - "on *Back to the Future* we control the street lights that are in the video, and at Disney Paris we control all of the virtual light sources in the video backdrop" - but still excited by what it now makes possible.

Lutkin describes his work here as "the final layer to enhance everybody's work - I never think that a lighting designer should come in with a style and push a production in a certain direction. You should always be there in support, just to elevate what's already there." He also brought the long experience he now has working with projection. "There are some physical aspects to working with video, to do with the quality of the projectors and the brightness and the angles, which

means that in those moments when you want everything to look like it's tied together, it's a process," says Lutkin. "Once the video is set and giving you time and place and atmosphere, it's then time to add layers to enhance the actors in that environment, and sometimes help with the things video can't really do, such as deep saturated indigos - so there are very subtle things going on to make that seamless image. It's come from Tim, it's gone to Andrzej, but then I know I have to light Pi's face, his eyes, because ultimately that's what the audience are going to connect with."

Lutkin also had to deal with the challenge of the puppets, and particularly the balance of puppets and puppeteers. "The great thing about opening in Sheffield is that their standard thing is to have two followspots on every play - I think because of their three-sided stage, they've always done that. I actually used to followspot on *Lion King* when I was a student, and half the cues were either on a mask or a puppet - and it's exactly the same thing on *Pi*. The operators have cues to be on the tiger and avoid its operator; that lets us put a warm glow on the tiger, get Pi in a colder colour, and really let them stand out from the video content."

Here, as on many other shows now - another inflection point - Lutkin isn't using standard followspots, but rather Martin Encore Performance CLDs that have their colour and size controlled from the show's ETC Eos console, programmed by associate LD Elliot Smith, but which are then run by human operators in the theatre's two side FOH boxes. The same fixtures working more conventionally as moving lights feature elsewhere in the rig, alongside Aura XBs, Lustr2s and some more traditional gear - tungsten Source Fours, PAR cans, 1kW and 2kW Fresnels, and even a CCT Minuette painted in as part of the scenery on the underside of one of the floor traps. All of the lighting is from Sparks Theatrical Hire with the installation overseen by production electrician Theo Chadha.

Fascinating, given how projection shows have historically sometimes shied away from it for fear of revealing the beams from the projectors, is the use of haze and smoke. "Whenever we're at sea, it just enhances everything," Lutkin explains. Goulding adds: "In the storm, we ended up putting more in, especially low smoke, and that really blurred the line between the water and the sky - it made the floor and the backwall feel like a continuation of the same thing, and made the sea suddenly feel more three-dimensional." It also again

"The operators have cues to be on the tiger and avoid its operator; that lets us put a warm glow on the tiger, get Pi in a colder colour, and really let them stand out from the video content . . ."

- Tim Lutkin

Photo: Johan Persson

"Projection and lighting complete the scenery that was designed to receive it, wrapping around it in 3D rather than just landing on. You really can't tell where one element ends and the next begins, so seamlessly and with such artistry is it done . . ."

let the video almost become a light source, filling the air with crackling lightning rather than just seeing that light land on a flat surface. That's really the trick all the way through here: projection and lighting complete the scenery that was designed to receive it, wrapping around it in 3D rather than just landing on it and adding dynamic and motion to it, whether the hustle of a stormy sea of the gentle movement of a shoal of fish. You really can't tell where one element ends and the next begins, so seamlessly and with such artistry is it done.

AUDIBLE

Which includes one more element: we don't just see our world, we hear it too, and it is actually the work of sound designer Carolyn Downing that completes the world on stage, turning the pixels of projected water into a real, roaring ocean - in effect, it is the glue that binds all of these elements together. As Rob Bettle, one of the sound associates on the show comments: "There are very few moments when there is no sound - you had to be in the world all the time to make it believable." And yet, fascinatingly, it is also her work that pulls the production back from becoming too literal, too 'cinema', most particularly through the animal sounds corresponding to Nick Barnes and Finn Caldwell's puppets.

"There are real animal sounds in the show, particularly birds and other background sounds in the zoo," Downing explains, "but what I was very keen to do was record the performers doing their versions of the puppet animals, their vocal performance, so we didn't have a world of a real sound effects from a library and then an actor doing their version; we all needed to sit in the same world. From that, we can extend it - there's a huge tiger roar at the end of the first act that we really needed to nail which mixes a real sound and a recorded sound and trickery with pitch and sending it to subs to give it the gravitas it needed. But the overwhelming design choice was me wanting it all to be in the same world - to be in our imagined world."

This applied to the water, too, which formed a major part of Downing's work on the show just as it did for video. As with video, the trick was combining lots of different elements. She started by gathering a palette full of different types of water - "big sea, big waves, doing some foley to make smaller sounds, finding beautifully recorded foley stock sounds for bigger stuff, then manipulating them, mixing them together. I was very keen to make sure the water felt very real, I wanted to immerse people, make them feel like they're on the boat." Her use of the word 'feel' here - feel real rather than sound real - I think clearly shows Downing's approach to her work, which is about the emotion a sound provokes rather than just the sound itself. "There's a moment in the show where we go back to the zebra and Pi on the lifeboat, like a big film cut, and what I love about that section is that, even though I've worked with other people to make it and I know how it works - it still feels cold. The room feels colder, like oh my god it feels cold! Those are the moments I strive for, when sound changes the feel of the room. And I would think about it from a camera point of view - where is our focus, zooming in. What is the emotional temperature of that moment of the story? So when we're with Pi on his own, let's forget there's an enormous sea, turn up the little lapping sound of the water on the side of the boat, so you suddenly go, 'oh it's so quiet'. Then at the other end of that is the enormous storm, huge washes of sea. So it's really figuring out that graph of the journey through the story."

A key part of this was a desire to specifically link sound to action on stage. "I was very keen that it didn't become generic - very keen that all of the little details are as important as anything. So, with the fish splashing, or Pi putting his hand in the water, perhaps driven by the big space we started in in Sheffield, I wanted the sound to be localised to those moments." To achieve that meant hiding speakers into suitable spots while keeping them hidden. "We've got tiny speakers under the set as points of reference; I call them my anchors," Downing explains. "It was easier in Sheffield because there's a moat around the edge of the stage; we had to re-think that for London. But the system is now so well delayed and localised into different zones to achieve that."

That was achieved using the 24x24 cross-point delay matrix in the show's DiGiGo SD10T console, with Downing supported

in this by her associates Rob Bettle and Sam Clarkson of Sound Quiet Time, and production sound engineer Dan McIntosh. They oversaw the installation of a predominantly d&b loudspeaker system: Y10Ps as centre fills to the theatre's three levels, Y7P as stalls down-fills, E6 as side-fills, balcony delays and surrounds, E4 as front-fills and stalls delays, E5 as circle delays and deck effect speakers, and B22 as stalls subs, driven using d&b D20 amplifiers controlled from the SD10, a TC Electronics Mainframe 6000 system, and a Mac running QLab, the entire system also supplied by Stage Sound Services.

Also under the control of head of sound Jack Vincent (who, with deputy Will Midgley also looks after the video system) is an old-school analogue Sennheiser radio mic system, with each cast member mic'd with a Sennheiser MKE-1 capsule. "I never want to hear it amplified," Downing explains. "And I'm always on the operator's case, saying if you ever hear it, it's too much. It's a really fine balance. We still need to work with the actors on their technique and diction to be sure they're clearly audible. But there's also a big orchestral music score, and the audience still need to hear the words really clearly - if they don't, they'll spend five minutes going, 'what did he say, what was that', and then they've missed five lines and three different story beats . . ."

But here, too, Downing was clear in what she wanted the mics to achieve - and what she didn't want them to: "What they give us is choice. There's an enormous storm. If we amplify Pi's voice over all of that, which is what you might expect, we're saying he is bigger than nature - and that's not the story. The story is that nature does not care a jot. So my choice, and what I said to the operator was, don't go with your instinct of every word of this has to be heard. It was fascinating: this play which is so visually active and engaging let you make different design choices."

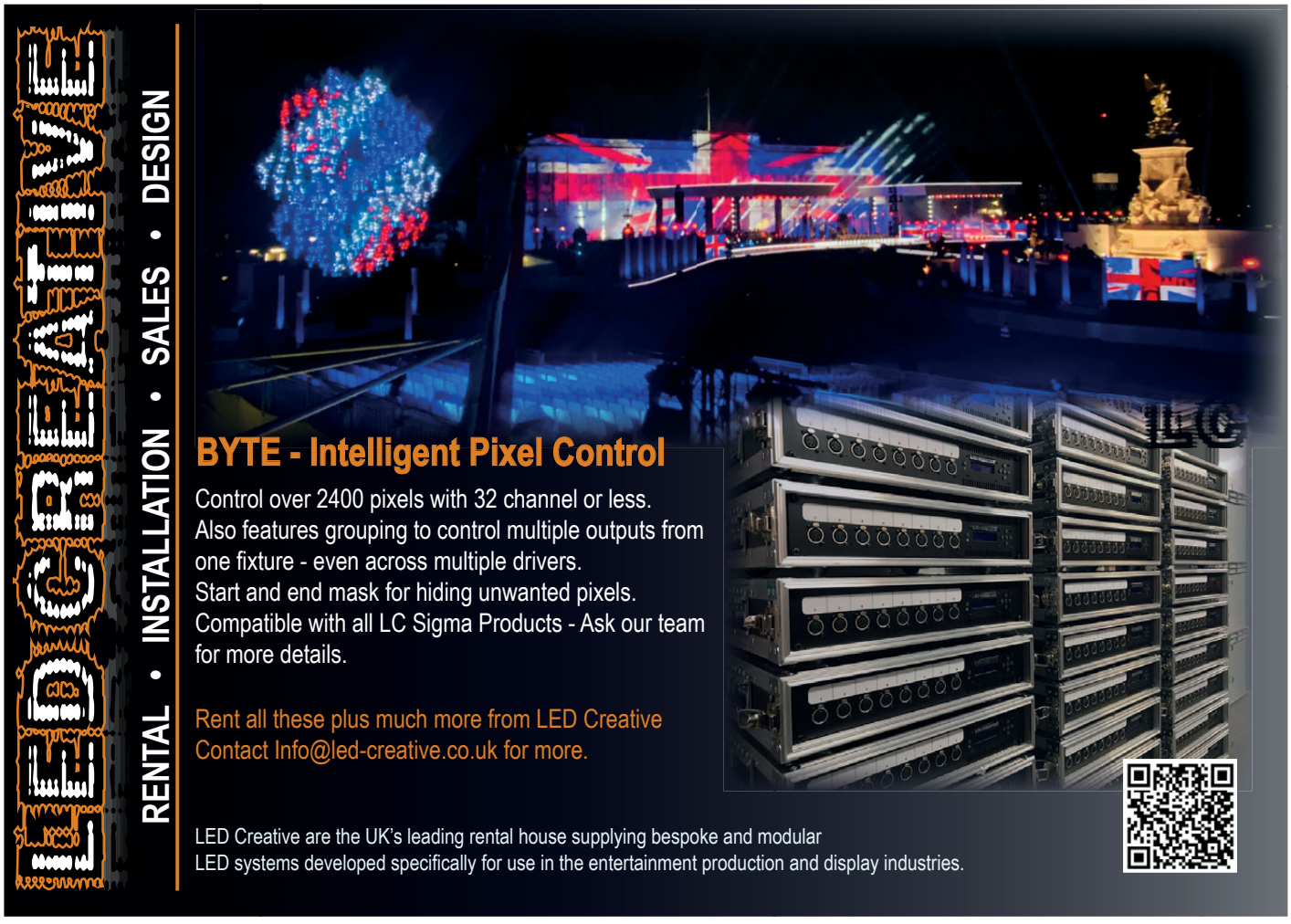
Downing is also proud of the attention to detail in the design choices - hers and across other departments - but also in the way everyone worked together towards the best possible result. "We're all committed to our thing, concentrating really hard on that - but then I've got peripheral vision on what everyone else is doing and how it connects. We had lots of fun with Andrzej for Pi plunging in to the water - he'd do a ripple, then I would add a ripple sound, but we're all so crazy busy we wouldn't have had a conversation about that before - it's just a moment in tech. It's back and forth, from being absolutely in it."

PERFORMANCE

Sheffield established this and was acclaimed; London gave everyone a second go, a chance to refine and improve after a year away. The result: captivated audiences, and Olivier Award wins in the set design and lighting design categories, with Downing nominated for the sound award.

As ever with perfectionists, all still have their lists of things to improve - and they will get a chance to do so as the show goes to the US later this year, to Boston hopefully en-route to New York. There's also a UK tour being planned, though without the ability to go through the floor that will present a host of new challenges to, in particular, Tim Hatley.

It is quite a piece of work, and very definitely a marker in time for production technology serving theatre. But if this technology is now standard, think of the opportunities that are now available to us all, if we have the imagination to grasp them.



future tech

Digital humans

James Simpson predicts the shape of tech to come . . .

"This technology can be used to provide additional presence on stage, with background roles reacting to the live actions of an actor performing through a digital avatar . . ."

Personifying yourself through a 3D avatar is becoming more common, but as the foundations of our metaverse are being laid, companies are expanding the possibilities for making virtual versions of humans with a wide range of new technology for making the perfect "you".

CARTOONS OR A PERSONAL IDENTITY?

Getting the appearance right is the hardest part when trying to create a version of yourself for the digital realm. It is human nature to want to put the best side of ourselves forward for everyone to see, which is why we filter and tailor our life when posting on social media. We will also do the same with our digital avatars and will want to pick from things that most resemble us in real life, such as our hair, eye and skin colour. To get past uncanny valley - the unsettling feeling when something doesn't look quite human - the characters we currently use are often cartoons or caricatures that resemble real people, but are obviously different.

For many, their digital avatars are an alter ego that allows them to be someone else entirely. Games like *Fortnite* allow gamers to be anyone they want to be, creating characters based on franchises, films and myths.

NON-PLAYER CHARACTER (NPC)

If this terminology seems a bit video-gamey, then you are right - there is a lot about video games when we talk about the metaverse, and it's entirely relevant to the entertainment industry. With Bloomberg Intelligence expecting the metaverse to be worth $800bn by 2024 worldwide and Meta (formerly Facebook) annually spending $10bn a year on R&D for the metaverse (the UK's entire R&D budget is $7bn), I am not alone in believing the metaverse will exist and be used by the majority of humans in the near future. So, it is my belief that the entertainment industry will need to create a digital duplicate of itself in this world too, and that means having to converge the language we use to describe theatre and live events with gaming technology.

An NPC is a digital human that is controlled by an AI, not a real person. Artificial intelligence is often misunderstood - people start imagining the *Terminator* when it's actually a set of pre-determined responses and interactions that a digital system enacts in response to you (the player). The NPC's role in the metaverse entertainment industry is to support artists and to build bigger audiences for effect and emotion. Currently, getting more than 100 people together in a social space online is quite hard because it puts a lot of demand on cloud servers that run the games, but if you want to attend a concert, you want to feel a part of an audience of hundreds or thousands.

The NPC has a role here as a generic audience member who, if you interact with it, will be able to run a set of pre-determined responses that you would struggle to tell weren't from another human attending the concert through their own digital avatar. AI company Charisma has developed a tool that uses speech-to-text tools to convert spoken word to data for the AI to read and it will provide you an intelligent response with full gestures and mannerisms. This type of intelligence can also be used to create live audience responses such as applause, laughter and gasps, mimicking the reactions of a real audience. This same technology can also be used to provide additional presence on stage, with background roles reacting and performing in response to the live actions of an actor performing through a digital avatar.

REALISM

The race to create the perfect digital humans will never end, like the quest for the fastest car or the brightest light. It won't end because the goal is a moving target.

When Epic games released the meta humans - a hyperrealistic digital character for use in Unreal Engine games - the company created the closest thing to reality that we had seen. But without natural movement and with lighting and camera positions that hide the messy bits, it is still really hard to make a meta human look like a real person. In June this year, Epic Games released an update to the tool, which supports scans of your face and gets you quite close to a digital version of you. This could be built into a consumer product for users of the metaverse to build their own lifelike avatars of themselves.

Another way of creating realism is to blend your digital avatar with real photos of yourself. There are a wealth of tools that allow you to digitally change your facial proportions, apply makeup or manipulate your body shape. These 'filters' are able to work because an AI can determine the parts of your face and neatly blend a deforming mesh over the image, or place new content over it to make it appear different. Many YouTube stars and Instagrammers are doing this to present a version of themselves that they would rather people see. This same technology can be used to map a photo of yourself over another video, or even map it onto a 3D model or avatar, so that a generic 3D model can look just like you. This means that with a simple photo, anyone can look like a believable version of themselves in a virtual world.

At present, we are nowhere near surpassing the uncanny valley, but these tools collectively allow us to create a virtual version of real people, which would in turn allow us to create virtual entertainment, with your own alter-ego interacting with thousands of people at a time, without knowing if they were all real or not . . .

James is a creative technologist and designer working in the world of digital theatre. He is a pioneer in the use of VR and AR in theatre and is trying to evolve the production design process with his research in design visualisation.

IP65

say **hello** to

OTOS® H5

BEAM-SPOT-WASH HYBRID MOVING HEAD

When it comes to selecting moving heads for outdoor use, there's a lot of truth behind the popular saying 'Only the toughest will survive'. With the OTOS® series, Cameo is making the greatest wish of lighting professionals and rental firms come true: bright, durable and compact IP65 moving heads that are road- and riderworthy for a wide variety of settings, such as festival stages, facades or film sets.

cameo® for lumen beings

DESIGNED & ENGINEERED IN GERMANY

Cameo® is a registered brand of the Adam Hall Group.

For more information please visit:
cameolight.com/otos-series

Going Platinum

LSi discovers some of the technology at work behind the awe-inspiring events that celebrated the Queen's Platinum Jubilee . . .

The Platinum Jubilee of Queen Elizabeth II - a reign unmatched in history - was celebrated with a series of landmark events across a special, extended Bank Holiday weekend in the UK this June. Made all the more special through the use of the latest entertainment technology, the momentous occasion included nationwide beacon lighting, a service of thanksgiving at St Paul's Cathedral, a concert at Buckingham Palace and a pageant up The Mall, not to mention street parties, village fêtes and flag-waving aplenty.

Of course, the main attractions would not have been quite as extraordinary had it not been for the work and dedication of some of this industry's most respected professionals, who contributed their talents to realise the events, many of which were broadcast globally. Here, we bring you behind-the-scenes details from key events that defined the celebrations . . .

TREE OF TREES AND BEACONS: 2 JUNE

Designed by Thomas Heatherwick and installed outside Buckingham Palace, the mighty *Tree of Trees* sculpture served as a striking centrepiece for the long-weekend's celebrations, particularly the nationwide Beacon Lighting ceremony.

Representing the 'plant a tree for the jubilee' Queen's Green Canopy environmental initiative, the 21m tall sculpture was made of recycled steel and comprised hundreds of native saplings, planted in aluminium pots fixed on to the metal bars of the tree sculpture. To illuminate it, rental house LED Creative was tasked with supplying a bespoke modular LED system, providing more than 3,400 Sigma Lamps that were controlled via the company's in-house-designed Byte Control system. This allowed the lighting team to produce some truly extraordinary effects with a low channel footprint (19 channels per 10 lamps), and resulted in the entire tree appearing to be pixel-mapped.

On the evening of Thursday, 2 June, as communities the length and breadth of the UK lit flaming beacons in celebration of the monarch's long reign, *Tree of Trees* acted as the principal beacon. For the Royal Illuminating Ceremony, LED Creative provided lighting designer Nigel Catmur with a further 600m of Sigma Lamps at both Windsor Castle and Buckingham Palace to create a stream of light leading to the *Tree*. Her Majesty The Queen started the light stream by touching a special orb at Windsor Castle. Once 'activated', the stream ran the length of the lawn in Windsor Castle's Quadrant, before continuing at Buckingham Palace and climbing the *Tree* until the entire structure was illuminated.

Catmur reflects: "When Tom Glover of Heatherwick Studio first approached me, I knew that LED Creative would be right for the job. Having worked with them on many other projects previously, I knew their openness, understanding, adaptability and diligence made them the right choice to supply the project. I could not be happier with my decision. From initial discussions right through the project - despite the many challenges - their professionalism, expertise and downright good humour made the experience a total pleasure. My thanks to Tim, Brad, Dani and Ges."

LED Creative project manager Tim Rees adds: "This is by far one of the most prestigious projects I have worked on to-date. From the moment Nigel came to us with it, I knew it would be special. There were many challenges to overcome - the time frame was relatively short for such a huge undertaking, and with the ongoing supply chain issues, there were some sleepless nights! When the *Tree* finally lit up, it was an amazing feeling. My thanks go to the whole team who were involved - without many hours of work, both planning and rigging, the project would not have been such a huge success."

THANKSGIVING SERVICE: 3 JUNE

St Paul's Cathedral is a venue steeped in tradition. This has even applied to lighting, with the PAR64 the fixture of choice for lighting designers tasked with lighting events at the historic cathedral. But for the Queen's Jubilee Thanksgiving Service on Friday, 3 June, its lighting director David Bishop stepped away from tradition, opting for an LED lighting rig. Limelite Lighting, lighting supplier for the occasion, provided 150 Martin MAC Aura PXLs as the main lighting fixture, along with 24 Ayrton Khamsins, 12 Creamsource Vortex8s, four ETC Source Four Lustrs Daylight HD, and Astera AX9s.

"It was important to maintain the traditional feel and the natural look," says Bishop, "yet I wanted to increase the flexibility and efficiency of the lighting rig. The new Martin MAC Aura PXL was ideal. The high lumen output, colour rendering, and zoom range is exceptional for such a compact fixture and perfect for this application. It allowed me to have much greater control of the colour temperatures, while the remote-controllable fixtures meant our focus session was far quicker because we didn't have to communicate each PAR fixture to multiple electricians at height. We could also continue to perfect our focus during camera rehearsals without disturbing the production."

Gaffer Mark Newell adds: "Installing any type of lighting rig at St Paul's Cathedral is challenging - the building was simply not designed with us in mind back in 1675! Access to the triforium level, where the majority of lighting for events and broadcast is installed, is via a tiny window, just half a metre wide. All the equipment must be winched up the outside of the building, then manoeuvred manually around the cathedral's small alleyways. Because the MAC Aura PXL is compact and weighs just 16kg, we could access most areas without too much trouble. Using an all-LED rig also reduced cables and power requirements of this previously power-hungry rig."

Photo: PA Media

Photo: Courtesy of Stufish

Above: LED Creative supplied a bespoke modular LED system to illuminate the Tree of Trees

LED fixtures were sensitively deployed at St Paul's for the Thanksgiving Service

PLATINUM PARTY AT THE PALACE: 4 JUNE

On Saturday, 4 June, the nation turned up and tuned in to watch the *Platinum Party at the Palace*, a spectacular concert staged in front of Buckingham Palace and around the Queen Victoria Memorial (QVM).

With comedian Lee Mack as host, the party kicked off with a surprise pre-recorded VT in which The Queen sat down to tea with Paddington Bear. After exchanging marmalade sandwich tips, the pair tapped out the opening beats of *We Will Rock You* on their teacups, with this then transitioning to a live performance by the rock band, Queen on the QVM stage.

The night continued with live music from Diana Ross, Elbow, Jax Jones, George Ezra, Rod Stewart, Alicia Keys, Andrea Bocelli, Sam Ryder and many more. There was also dancing from Diversity, and a musical medley from Andrew Lloyd Webber, Lin-Manuel Miranda and the casts of *Hamilton*, *The Phantom of The Opera*, *Six, The Lion King* and *Joseph and the Amazing Technicolour Dreamcoat*.

Throughout it all, Buckingham Palace acted as a giant projection surface backdrop, complementing the action on the four-stage, in-the-round performance area that centred around the QVM. Designed by Stufish, this included two end-on stages, North and South, radiating outwards from the palace railings; the Palace Gate stage positioned between them in the palace forecourt, and the main QVM stage.

SET DESIGN

Stufish was approached by BBC Studios in July 2021 to pitch a concept for the concert's set design and was successfully awarded the job in September 2021. Ric Lipson of Stufish explains: "The brief was to create an experience that brought a sense of unity, covering 360° around the QVM and with multiple stage areas. Having also designed the previous two jubilee shows, we were very knowledgeable about the site. The BBC team were keen that this year's design felt very different from the 2012 Diamond Jubilee, which only had one main stage in the centre and a 180° audience."

"Our original concept centred around the idea of three stages," he continues, "one for an orchestra, one for pop performances and one for spoken word and presenters. Together with this, we developed the idea of 70 columns surrounding the QVM and linking the stages together. These became an important theme of the design as they represented the 70-year reign of The Queen, her strength, stability, and the support she shows to the nation. This version won the pitch, but due to various factors, became hard to deliver."

A combination of rising material costs, continuing supply chain issues and a lack of available equipment resulted in a slight rethink. "We decided late in 2021 to slightly pivot the concept and shift to something that re-framed the design to use Buckingham Palace as the centre of the design and the background for the stages," says Lipson. "At night, the palace became a huge canvas for projection and 3D mapping [*more of which later in this report*]. By using smaller, more simple, transparent structures to create the roof areas over the stages, we were able to customise the finishes to make a design that was more sympathetic to the environment and celebrated the site in a much more holistic way."

The 70 columns remained in the design, along with the three stages for pop, orchestra and spoken performances. A fourth stage was also added in front

Photo: Courtesy of Stufish

of the palace gates, making it possible for a couple of large performances to take place facing the 100,000-strong crowd on The Mall. "The width of the Palace Gate stage was 110m and the distance from the main gates, down the catwalk and to the tip of the QVM stage was a 170m walk," says Lipson.

"We started building on site around mid-May," he adds. "There was a huge amount to construct, from the seating blocks to the multiple staging areas." The work was phased so as not to disrupt the daily schedule of the site until closer to the jubilee weekend. Even then, the weekend's other events required careful timing of set construction, as Lipson explains: "We had to make sure that we could build the stages but still allow for the other events to work on the site, such as *Trooping of the Colour* and the *Platinum Pageant* the day after the concert. For both, we could not have the centre catwalk, and for the *Trooping of the Colour,* we had to leave the space between the stages open so that the royal vehicles could drive through the centre gates. This meant we had to build the final parts of the stages very quickly overnight two days before the show to be able to still rehearse the show before the big day. We worked on the staging right until the day of the show."

On the challenges faced whilst realising the concept on site, Lipson says: "The biggest challenge was how to fit the stages into the space available in front of the palace without getting in the way of its daily access needs. We had to build cantilevered structures over the fence of the palace, to allow the two back legs to sit in the forecourt without being an obstruction to vehicles and Guard Change ceremonies. The generous support from Buckingham Palace in allowing us to build over the fence and into the forecourt enabled the stages to be positioned in such a way as to frame the famous building. This is a very large site and the design complemented it without trying to overpower or being overpowered."

He continues: "We wanted it to look like the artists were performing around the iconic monuments of the site and have the stage elements highlight its beauty. Equally, huge areas of backstage infrastructure were required for the show to run, and we wanted to make sure those disappeared as much as possible from the main viewing points and camera positions. Another challenge we faced was making sure we could provide the best possible sightlines for the live audience, which of course was difficult because of the nature of the site. The whole project was only possible due to the close collaboration with the team at the palace, together with our production team, the BBC team and the various fabricators and suppliers."

Reflecting on the team's involvement in the concert, Lipson says: "Stufish was very honoured to work on our third jubilee celebration. This was particularly special as it marked such an iconic jubilee for the longest-serving monarch. This design was hugely ambitious at the best of times, but with high material costs and labour and resources being in such high demand following the pandemic, we really pulled off something that was only possible due to the hard work and dedication of all the collaborators, fabricators, and performers. On the whole, the show really represented the UK's ability to deliver top-class events to a worldwide audience and we are proud to have had a part in that."

LIGHTING

Lighting a multitude of live acts from different genres for both live and TV audiences, going from daylight to darkness, was no easy feat - but the *Platinum Party* was in safe hands. Lighting designer Nigel Catmur has over 20 years of experience in designing, operating and directing a variety of productions, from fringe and West End theatre to some of the UK's largest broadcast shows, including a previous jubilee celebration. Working for BBC Studios, he says he "had an inkling" that the big job was coming his way. "I was eventually asked last July," he reveals. "There was no tender, unlike for the set design - the lighting came straight to me." Also on the team, Mark Gardiner was gaffer; Martin Higgins and Alex Mildenhall were in charge of the effects lighting; Oliver Lifely did keylighting, with Matthew Lee driving the Green Hippo Hippotizer media servers for the screens.

"I had a very clear idea of how I wanted this show to look from the outset," Catmur continues. "I wanted to have a very clean design, with a lamp-into-camera feel. Having operated on 2002's *Party at the Palace* for the Golden Jubilee - which was held in the Buckingham Palace Garden - I thought that type of design worked incredibly well on TV. We wanted to get every light in white, pointing to the lens - it just brings a level of excitement. This is what you saw when Queen were performing. I wanted to develop that process through as the evening progressed. I didn't want heavy, saturated colours early on, and only worked with colouring as we were getting towards the final point; which, on 4 June, was 9:27pm - only then does your work start to get recognised," he laughs.

"Once the set design by Stufish was settled, we came up with our creative design, which then had to be approved by production," he adds. "That's where the use of WYSIWYG became invaluable - 3D models offer a great way of explaining what you are thinking of. Our time on site was so minimal, plus

we had just six hours of darkness per day, from 10pm to 4am. So most of the programming was done on Depence, which was manned by Alex Mildenhall. He took my model from WYSIWYG and put it into Depence; then he and Martin Higgins both programmed in that."

"We were planning to have three days of WYSIWYG, one of which was off-site," Catmur continues. "Due to complications, the FOH team turned up on the Sunday before the show; and from then, there were just two days to get to grips with everything and start programming. Rehearsals were on Tuesday and Wednesday; Thursday was the *Trooping of the Colour* and the Beacon Lighting, and then on Friday we had more rehearsals during the day and a dress at night. Mark [Gardiner, lighting director] and I were on site from the 19 May. Lighting supplier Version 2's Joe Marter was on the client manager side of that arrangement, and we only finished de-rigging on Thursday, 9 June."

The team also had to work around daily, two-hour Guard Change ceremonies; pause during international media news broadcasts, and contend with an electrical storm that required the whole site to be powered down. "That took us around four hours from the minute we powered down to the moment we got the site back up and running," explains Catmur.

On the night, balancing the brightness levels from the screens and the luminaires as the evening progressed was one of the more challenging aspects of operating. "We needed to bring a constant balance and power control," says Catmur. "At 8pm, the sun light added that fantastic twinkle to the lens, but at 8:45pm, it was the biggest burnout. So we had to keep a constant measure. Likewise, Matt [Lee], the content programmer, was pulling the LED screen brightness back, from 80% down to about 4% as the evening went on."

A lack of high rigging points for lighting fixtures also presented a challenge for Catmur and his team in terms of both performer and audience lighting. "The lack of height meant we would struggle to hit the audience at night," he says. "There were 70 columns in the set design, with video on the main stage, so that was our only little bit of height, apart from our own followspot towers. The idea was that we would use LED lamps to light out into the audience, and then we would tip the hybrid lamps that were on top of the washes and were primarily purposed to do beams, into the front of the audience. That was the mission before we got on site."

What of the sequence of events? "The majority of the show was timecoded," says Catmur. "The orchestra were playing to click. Queen, however, had to sync into the Paddington Bear opening VT - there were several discussions about how that was going to be done. We needed to come off video and be playing outside the Palace, so Queen started with a click, then did their own thing." He continues: "The other complication was keeping the VT content a secret - there were only around 70 people that knew about it and we could never rehearse with it as if it was revealed, it would have had to be pulled."

On his choice of fixtures, Catmur says: "I knew I wanted Robe BMFLs because of their brightness and reliability; we water-proofed those with rain hats. Everything else had IP65 rating, unless it was under cover. We wanted Robe iSpiiders but couldn't get them, so we ended up with Prolights PanoramaIP WBX - a phenomenal effect light. On the pillars and towers, certainly around QVM, were four LED PARs for uplighting. The throw range from the front followspots to the QVM was about 61m, and we could also get past the QVM and hit the Palace Stage, which was further away at 138m. So I specified four Robert Juliat Lancelot 4Ks, which give you that firepower."

There were also four Robe BMFL followspots, four Robe Forte spots and 28 additional BMFL Blades. The forecourt as well as the palace itself was illuminated by 62 Cameo Otos H5s, 156 Cameo Zenit W600s, 392 Cameo Flat Pro 7 G2s and 72 Flat Pro 12 G2s. "The Cameo Otoses we used as beam lights, though they are a hybrid luminaire," says Catmur. "We bench-tested Otos H5, the IP65 variant - it's very good. We also had Martin MAC Auras under the roof, Robe MegaPointes on skates on the floor and beams at the back of the stage, hitting under the roof. Then Robe Spiiders by the sides on the legs and the Cameo Zeniths on the top of the pillars."

SCREENS AND PROJECTIONS

More than 200sq.m of Roe Black Quartz LED screens, supplied by Creative Technology, were erected on the stage which surrounded the QVM. These were split into one large LED screen upstage-centre and eight LED pillars edging out toward the audience. Tasked with media server programming was Matthew Lee. "We had two Hippotizer Boreal+ MK2 servers, one main and one backup," he says. "LED screens were fed from two 4K canvases, with other outputs used for my own monitoring, and as confidence feeds to the OB trucks. The Boreal+ MK2 servers were chosen for the amount of outputs and inputs required, and their power."

Lee programmed the Boreal+ MK2 using a High End Systems Hog 4 lighting console, and the whole show was on a Cue Stack, with various manual buttons for items such as the *We Will Rock You* stabs when Queen opened the show.

"I used a lot of timecoded content, so we were in-sync with the projection teams, which meant Hippotizer's Sync Manager was my friend there," Lee explains. "We also used the NDI send to great effect, as I was feeding into the lighting team's Depence visualiser."

"The same team who couldn't work for two years and were essentially forgotten about, pulled it out of the bag to make these unforgettable celebrations happen . . ."

- Josh Lloyd

LED screen content ranged from live stage feeds to custom-made content, which was supplied by NorthHouse. Lee and the visuals team also utilised the live feeds to provide IMAG on various screens rigged at sequential positions down The Mall for the gathered crowds.

As the concert moved from daylight to dusk, Lee remained in confident control. He explains: "The Roe Black Quartz LED enabled me to take control of the LED brightness via sACN from my control desk, allowing me to have fine control over brightness as the concert went from bright daylight, through to fully dark. It also meant we were able to push to its brightest output for the daytime events such as *Trooping of the Colour*."

Creative studio NorthHouse was also commissioned to design and create the projection mapping and broadcast graphics content, including the LED screen visuals complementing the array of live performances. Tom Bairstow, creative director and founder, explains how the show came together: "We wanted to create an incredibly special and memorable show and completely transform Buckingham Palace into something that has never been seen before. Big ideas came with immense technical challenges, but as a team, we're used to large-scale projection mapping and built our own software to visualise the show in advance. That enabled us to see our visuals on the palace from multiple perspectives and look at how varied times of day or night and weather conditions affected clarity. Once we got there, it was almost a case of just pressing 'Go'."

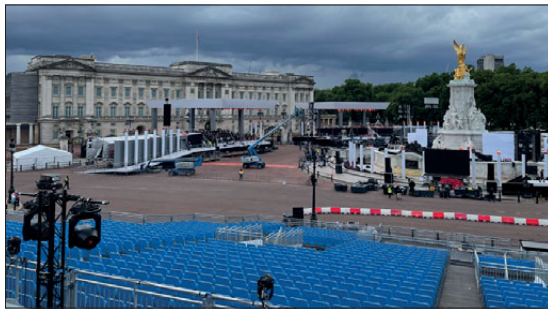
He adds: "We could let our imaginations go wild and had a lot of freedom to create a range of visuals. We 'poured' liquid platinum over the palace for Alicia Keys, collaborated with SkyMagic on the drone and projection show for Sigala and Ella Eyre, 'swung' disco balls around for Diana Ross, dug into an incredible amount of archive footage for the Prince of Wales' speech, and for Duran Duran we 'peeled back' 70 layers of wallpaper from the palace, inspired by Her Majesty's amazing styling over the years."

DRONES

A particular highlight of the *Platinum Party* was the striking and intricate drone display that lit up the sky over Buckingham Palace. Tying into the content projected on the building's façade, the drones formed an assortment of quintessentially British scenes relating to Her Majesty. From a postage stamp, to a cup of tea and even The Queen's favourite animals - corgis and horses - the display added an extra wow-factor to the night, finishing with 'Thank you Ma'am' spelled out across the sky.

Having delivered the last two New Year's Eve drone shows in London, SkyMagic was brought onboard by BBC Studios at the start of the year to produce the display which involved around 400 drones. "We were delighted to have the opportunity to be involved with this prestigious project," opens Ollie Howitt, creative designer for the drone show. "From the point of being contracted by BBC Studios in early January, we followed our well-established pathway from inception through to execution. We worked very closely with the BBC's executive production team, led by Mark Sidaway, allowing for regular client feedback and input. We also found ourselves in the rare position of having ample time to work through several ideas and iterations of the choreographic design, with plenty of back and forth with Mark and his team. Over the course of Q1 2022, we developed hero renders before moving to animatics in April. By mid-May, we were ready to conduct test flights at our off-grid location ahead of executing the full show in-situ on 4 June."

Of the design process, Howitt says: "The creative design process starts with a session with the client - in this case BBC Studios. It was really refreshing to



From top: For the Platinum Party, a TiMax-based audio system was designed around the four-stage, in-the-round concept

70 columns in the set design provided the lighting team with the chance to rig fixtures at height

L-Acoustics Soundvision and TiMax PanSpace in use, in situ

Trooping of the drones - SkyMagic's drones line up ahead of the big day

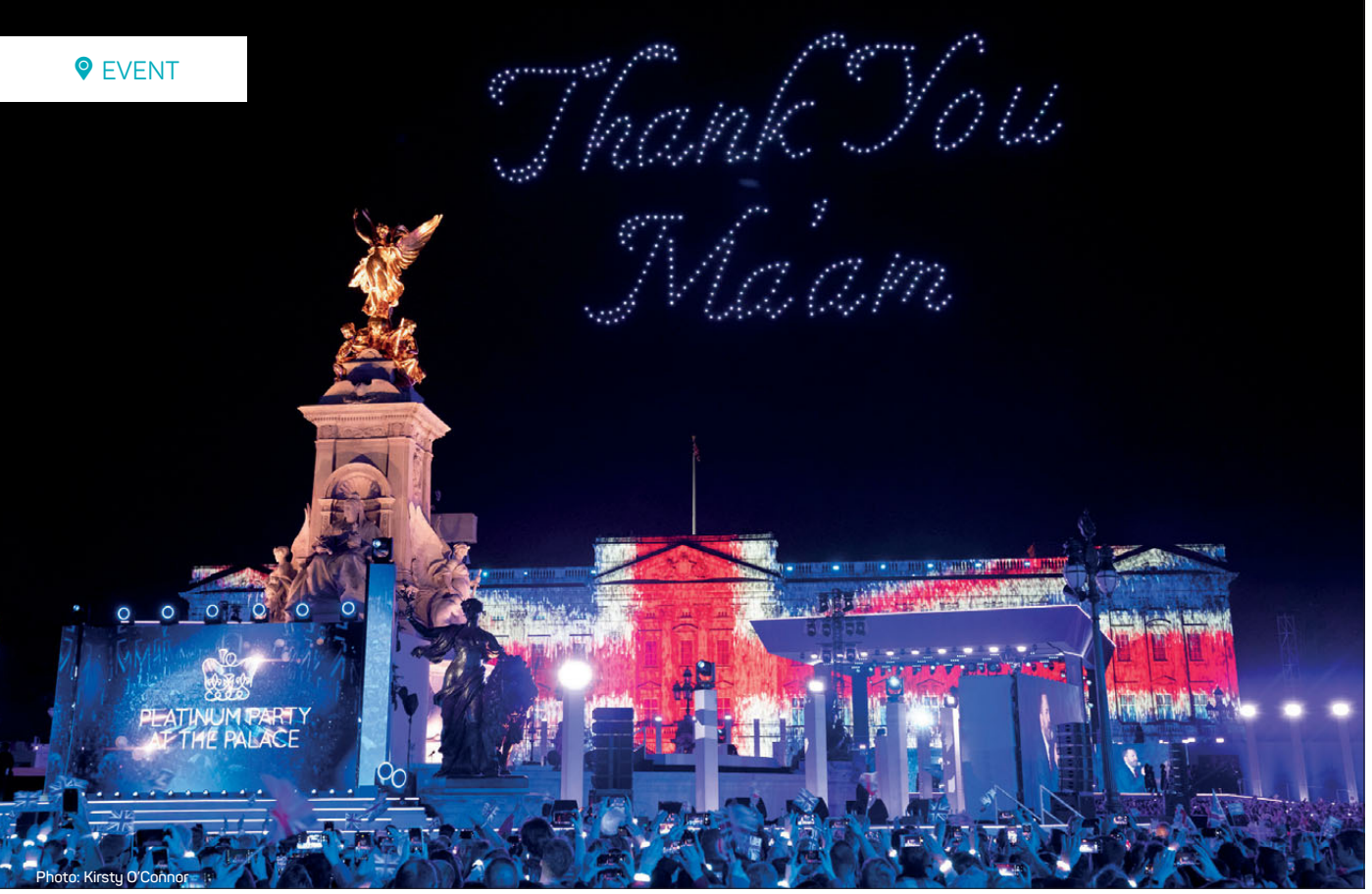


Photo: Kirsty O'Connor

hear that they were happy for us to lead on ideas, working to a show that essentially fell into two halves - a lighter, fun opening section that then transitioned into something a little more formal and classic."

He continues: "Once we had client approval on the show's flow, we moved onto static renders that formed the basis of our storyboard." SkyMagic was then looped in with the NorthHouse team responsible for the content projected onto the palace. "We worked closely with them to ensure our collective outputs worked in concert with one another, finding those moments of light and shade to deliver an emotive, playful and punchy piece," says Howitt. "All the way along there were regular touch points for Mark and the BBC team to critique, amend and approve. There can often be a disconnect with 'render to reality', with what one sees in the real world jarring with the renders produced to sell in an idea. One of our strongest assets is that what the client signs off is the fly file, with what one sees on one's screen replicated faithfully in the sky above."

Of the various 'scenes' created for the occasion, Howitt says: "Our biggest challenges were the horse and the swan - both of which were difficult to execute accurately. The wing on the left-hand side of the swan as it flew over the palace in profile was tricky as viewers could see through our swan, so we spent a huge amount of time finessing this. The horse was equally challenging, specifically its rear legs as it jumped over the flagpole. Getting an accurate depiction of the movement of a horse's rear legs when jumping required our team to spend literally hours studying footage and stills of horses jumping!"

Rehearsals were carried out at SkyMagic's North Yorkshire test site - an undertaking that required a high degree of secrecy, as Howitt explains: "With an event such as this, and wanting to keep it under wraps, we flew a full rehearsal to ensure timings were right to the music, whilst affording the BBC's team an opportunity to see it for real. The NorthHouse team were also present and were able to understand in the real world the size and scale of the creative. Once on site, we only needed to fly a handful of drones to double-check our centre point and the show's extremities in a way that did not alert anyone to what was to come."

On the night, the unpredictable British weather presented one of the biggest uncertainties for the team. "Our biggest concern was the weather, with the wind really picking up during the day," says Howitt. "We had been evaluating the conditions for weeks, and were confident we would have a window at our stage time, which proved to be the case. Shortly following the end of the concert, the heavens opened, complete with rumbles of thunder!"

He adds: "All our hardware and software is proprietary. Our current fleet is 3D printed. Our super bright LEDs, housed within the frosted dome on the underside of the vehicle, allow us to be visible from over 2km away - as evidenced by the images we have seen on socials taken by Londoners a long way from the palace."

The SkyMagic team included: Soon-Hooi Chiew, lead pilot; Stuart Fairhurst, pilot-in-command; Patrick O'Mahony, co-founder and director who called the show on the night; Ollie Howitt, creative director and creative associate, responsible for the creative design of the show; and Katie Flanders, project manager. Howitt concludes: "Everyone at SkyMagic is extremely honoured to have been involved in what was such a unique event. The reaction to the drone show was terrific and very humbling. We were delighted to be asked to play a part in what was a fantastic night."

AUDIO

To develop and manage the televised live events, BBC Studios appointed broadcast sound supervisors Kevin Duff and Andy Deacon of Zen Broadcast in July 2021. In turn, Zen briefed their go-to sound designer, Ben Milton of Ben Milton Associates, who designed a TiMax-based audio system around the four-stage, in-the-round concept.

Milton explains why TiMax SoundHub was at the heart of his sound design: "To accommodate the four key stages, four different environments needed to be imaged, allowing me to apply multiple delays to each single source and provide super clean audio from a broadcast perspective. There was only one way I could go and that was with TiMax."

Britannia Row Productions supplied the audio system. "I was keen for it to go to Brit Row," says Milton. "You just know

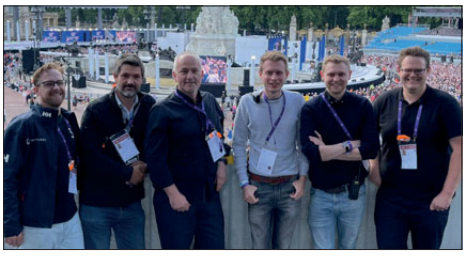
they can easily handle a production of this size. There's not many companies who would have that quantity of loudspeakers, mixing desks and technology available in-house at such a busy time of the year."

Britannia Row's head of engineering, Josh Lloyd, had no concerns over equipment supply, but notes that the logistics of events this size are not simple. "The scale is hard to visualise. Getting cables laid and testing radio mics in and around a royal palace comes with its own level of constraints and limitations," he explains. "The Brit Row team on this production were amazing and made the delivery of this show a huge success. The same team who couldn't work for two years and were essentially forgotten about, pulled it out of the bag to make these unforgettable celebrations happen. Laurie Fradley and Tom Brown deserve a particular mention."

Milton had appointed his own team of FOH, monitor engineers and chief system engineer alongside a 12-strong team from Brit Row that included stage, system, and RF engineers along with technical support. Zen Productions supplied the broadcast side of the audio, with facilities and engineers for the three OB trucks. The audio contingent in total numbered 50 and, with the OB trucks, the live and broadcast engineers were subdivided across the three performance stages.

Milton took TiMax SoundHub as the starting point of his audio design because of the spatial audio engine's ability to natively simplify an audio environment, delivering multiple audio sources to any system of loudspeakers then facilitating its regeneration into an ideal listening environment. Milton explains why this was necessary for his design: "From the audience perspective, there's no way that you could have a performance on one stage and the sound coming from another stage because that would jar. Also, as a performer, you can't have audio firing back at you. With TiMax, we were able to redeploy every loudspeaker with an individual time on it so it would image back to where it was coming from, and the performance would stay locked in, musically."

A matching pair of 64-channel TiMax SoundHub delay-matrix spatial



Top: Zoe Milton of the Zen Broadcast OB team with Ben Milton, sound designer

Above: The lighting and visuals team for Platinum Party (L-R): Aaron Thomas (PixMob wristband programmer), Oliver Lifely (generics programmer), Nigel Catmur (LD), Alex Mildenhall and Martin Higgins (moving light programmers), and Matthew Lee (media server programmer for LED screens)

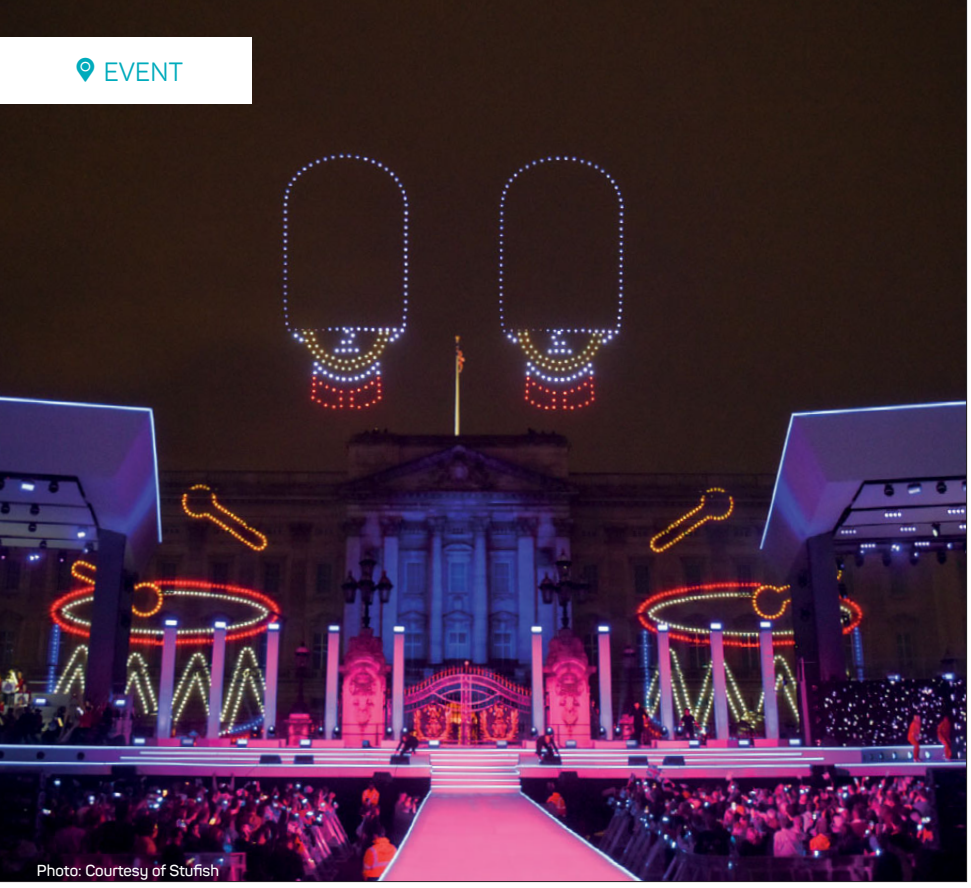


Photo: Courtesy of Stufish

"The reaction to the drone show was terrific and very humbling. We were delighted to be asked to play a part in what was a fantastic night . . ."

- Ollie Howitt

PLATINUM PARTY KEY PERSONNEL . . .

Show director: Julia Knowles

Set design: Stufish - Ric Lipson, Zarya Vrabcheva and Dionysis Toumazis

Creative director for BBC Studios: Claire Popplewell

Executive producer: Mark Sidaway

Creative producers: Cheryl Ko Pearson, Claudia Bishop, Tom Dennings, Jerry Reeve and Matt Flint

Line producer: Caroline Lloyd

Production executive: Gemma Thomas

Production director: Steve Nolan

Technical director: Malcolm Birkett

Orchestrator: Steve Sidwell

Conductor: Simon Haw

Lighting design: Nigel Catmur

Lighting director: Mark Gardiner

Lighting supplier: Version 2

Sound design: Ben Milton

Sound supplier: Britannia Row Productions

Video design and animation: NorthHouse

Video supplier: Creative Technologies

Staging suppliers: Star Live, Illusion DC and Blackout

Integrated set electrics: Electric Foundry

Drone show: SkyMagic

Crowd interaction: PixMob

processors were supplied by TiMax manufacturer Out Board. Milton points out that the one event design "became four events, all very different in concept. Each using the audio department's timecode output to trigger every other aspect of the shows, from lighting, projection mapping and even drones."

A multi-channel distributed L-Acoustics sound system included left-right pairs of groundstacked K3 arrays for each of the four grandstand seating blocks positioned opposite the stages, plus 14 alternate left and right groundstacks of Kara II with KS28 subs surrounding the QVM stage. An alternate left and right system of flown K2 and KS28 hangs reinforced the front of the North and South stages respectively, supported by further out-fill and front-fill arrays of Kara per side, plus KS28 subs. Front-fill for the QVM stage was handled by Kiva II boxes, and a pair of eight-box Kara systems pointed down the Mall between the seating bleachers to support AV and delay systems. A further discreet L/R system for the VIP Royal Enclosure comprised a selection 5XT and X12 compact boxes.

All stages were mixed and controlled via DiGiCo mixing consoles, all located up in the main grandstand, with local monitor systems timed back to the arena zones in TiMax. Milton adds: "DiGiCo is my desk manufacturer of choice and also a rider-pleaser, popular with touring engineers throughout the world." The South and North stages both featured a pair of DiGiCo SD7s for FOH and monitors. A DiGiCo 338 and SD10 handled the mix of acts on the QVM stage. All the FOH boards were bussed through to a master DiGiCo Quantum SD7 which took in not only the stage mixes but all the spoken word and VT lines. From here the mixes were bussed via Dante and AES to TiMax. TiMax then distributed the final mix via Dante over fibre to the pre-imaged and delay-matrixed loudspeaker positions. Milton explains: "Through the common bus structure, I could return mixed vocal and music stems to the stage from the FOH QSD7. So, for each stage position, without me being involved, each engineer could take a blended mix without having to take all the inputs for the whole show into a board."

Having not had his hands on TiMax before, Milton worked in a few trips to Cambridge to meet with Out Board director Robin Whittaker, who also spent several days on-site helping to bed in the final set up pre-show. "We had a two-day on-site set up period and TiMax transferred perfectly. The top of The Mall is a huge area and TiMax delivered a system in time, which is just amazing. We had a functioning system on day one and went straight into orchestral rehearsal on day two. Incredible!"

He concludes: "Not only was it a great honour to be involved in this historic event, but what I and Mark Edwards, my system engineer, discovered is that TiMax is the way you should approach any show, even if you're not using it for 3D spatial placement. The ease of planning the pre-production which you need on your system before getting onto site is second-to-none. You can accurately time your whole system before you've even walked into the venue."

THE PLATINUM JUBILEE PAGEANT: 5 JUNE

Held on Sunday 5 June, the *Platinum Jubilee Pageant* covered a 3km route similar to that taken by The Queen during her coronation day in 1952 and centring around Buckingham Palace. It featured thousands of people from across the UK and the Commonwealth and was split into four distinct acts. Act 1 - *For Queen and Country* - involved a grand military parade and a rare outing for the Gold State Coach, while Act 2 - *Time of Our Lives* - represented changes in culture throughout Her Majesty's 70-year reign. Dubbed *Let's Celebrate*, Act 3 involved a procession of carnival floats, plus street theatre and urban dance performances, before Act 4 - *Happy and Glorious* - drew proceedings to a close with a special performance by Ed Sheeran and a flypast by the Red Arrows.

Audio for the pageant was handled by Roland Hemming and Richard Northwood of RH Consulting. Hemming, head of audio for the event, explains: "The pageant audio comprised many parts - use of the concert stage from the night before, feeds to and from the BBC, and the 20 or so different pageant elements that had their own audio systems. Initially, a concern was the spacing of the different parts of the pageant, so we produced an acoustic model of each element - a 'heat map' of the whole procession. We wanted everything to be a close as possible, but too close would be cacophonous."

The crowd-pleasing *Time of Our Lives* section of the pageant saw seven double-decker busses travel up The Mall, each bursting with stars from the worlds of music, fashion and culture from each decade of the Queen's reign. Hemming explains: "Each bus needed a PA system. These had to be imaginatively mounted on the upper handrails with a sound engineer operating from the lower deck. Inside each bus was a radio transmitter, so as each bus approached the VIP seating outside Buckingham Palace the sound from each bus could be fed into the main concert PA system and also sent to the BBC."

He continues: "All the pageant audio equipment was supplied by Blue-i. In addition, there were over 1,400 performers around each bus, and each of them was equipped with in-ear monitors fed from another transmitter on the bus. The performers listened to the music along with instructions from a dance captain on a radio mic. The mass-movement in-ear systems were supplied by Sound Decisions."

During *Let's Celebrate*, eight of the 11 acts also had their own PA systems; these were equipped with a transmitter so they could be relayed out of the concert PA system. This included a peloton of some 300 cyclists, including Sir Chris Hoy, Dame Laura Kenny and Sir Jason Kenny. "The peloton was another important element where we fed the soundtrack into The Mall and concert PA system," says Hemming. "When the peloton was not on The Mall, we had specially-designed tricycles with PA systems on. Even these had transmitters between each other, and the master bicycle had a remote control on the handlebars to control the sound." Production manager Tim Speller worked with the audio team on all the custom solutions.

The concert stage elements - such as Ed Sheeran's performance - were mixed from the FOH position. In addition, some feeds came directly from the BBC, plus the pageant had its own audio control truck for managing other audio elements. Ofcom managed the multitude of radio requirements, a task made even more challenging by the fact that many transmitters were not in fixed locations as they were part of the procession.

"We got amazing support from Andy Deacon and his team from Zen Broadcast, along with NEP broadcast, Sound Decisions, Blue-i as well as the team from Britannia Row and Delta Live who provided the systems for the stages and The Mall, respectively," concludes Hemming. "The real challenge was that whilst some parts of the pageant had been rehearsed, the whole pageant hadn't been, so the first time the team saw it was the same time as everyone else!" The many events of the Platinum Jubilee were undeniably triumphant. Job well done.

audio file

Worthy causes | Phil Ward speaks volumes . . .

"The attention now paid to sound would astound Mike Jeffery, and perhaps even Jimi Hendrix, as would the transformation of festivals from counter-culture chaos to middle class comfort. . . ."

I wanted to share a passage from record producer Glyn Johns' revealing autobiography *The Sound Man*, published in 2013. Johns was ubiquitous in the 1960s and early-to-mid '70s, seemingly present at every key recording session and concert firstly as tape op, then engineer and finally producer. That's not quite true, of course. He wasn't omnipresent. But it is quicker to name the A-list bands he didn't work with than to list the ones he did. On the other hand, since you ask, here's a taster of his many clients: The Rolling Stones, The Beatles, The Who, The Kinks, Small Faces, Led Zeppelin, Eagles, Neil Young, Eric Clapton . . .

And we can add Jimi Hendrix to that lot, however briefly, because there was a gig at The Royal Albert Hall that he was asked to record by Hendrix's manager at the time, Mike Jeffery. As 'the sound man', it was common in those days to hand live concert recording to the same guy who did it in the studio, a practice that was making something of a comeback before the pandemic with record producers becoming *de facto* MDs of an artist's entire live and recorded output.

This was never going to happen to Glyn Johns and Hendrix. The Albert Hall is a notorious auditorium, and in 1969 was still in its original acoustic condition - which is to say, a Victorian echo accelerator where the frequencies carried knives. Johns had recorded The Rolling Stones in there a few years earlier, but the combination of smaller amplifiers and screaming girls rendered acoustical issues more or less irrelevant. Now, huge Marshall stacks and a reverent, awestruck audience made the place, in Johns' words, "the worst venue in the UK for Hendrix to play."

Here's what happened: "I spoke to Jimi after the soundcheck, suggesting that if he wanted anyone in the audience to hear a single note of what he played that he and Noel Redding, the bass player, should use much smaller amps and for them to play at a much quieter level than they were used to.

"He was charming and said he understood the problem and would consider what I said. When the show began, as I expected, he completely ignored my suggestion. If anything, he turned up and the result was an unusable cacophony of sound."

Johns abandoned the recording and went home, leaving the tape op to change the reels as they ran out and hand them over at the end. He had vanished when Jeffery and the band came backstage to listen to a playback. The following morning's phone call between Mike Jeffery and Glyn Johns must have been quite something, and you wonder what kind of hubris was challenged as Johns plainly told his erstwhile client that "there was little point in me sitting there all evening listening to the racket going onstage."

So, this is the world's most famous guitarist at the very height of his all-too-brief career, the very pinnacle of rock's Himalayan grandeur, unable or unwilling to pay any heed to the foundations of the craftsmanship upon which his and many others' reputations were founded. Did it matter? Not one bit. This was just one live recording that was lost, and there were many more to sustain the myth and project a sound on vinyl that was very different to the real Jimi Hendrix, erm, experience. Perhaps not surprisingly, the most revered of these were made from outdoor concerts with minimal reflections.

Woodstock springs to mind, obviously, as it always does at this time of year. Glastonbury returned last month - after a gap of three years - the strongest link we have today to the original spirit of 1969. The attention now paid to sound would astound Mike Jeffery, and perhaps even Jimi Hendrix, as would the transformation of all festivals from counter-culture chaos to middle class comfort.

The journey of Glastonbury itself is particularly revealing. In 1970, its debut, it was even rougher than The Isle of Wight, the UK's initial response to Woodstock. When it returned in the '80s, it was a fundraiser for CND, Greenpeace and other causes, attracting travellers and others whom the police felt the need to remove, by force. The Smiths paved the way for fashionable pop bands, connecting the alternative scene to the mainstream, a trick consolidated by Britpop 10 years later. Meanwhile, rave culture and alternative cabaret broadened everyone's horizons, chemically or otherwise, and the dealers joined the travellers on the unwanted list.

Even as the subcultures represented at Glastonbury multiplied, further crises in 1990 and 2000 led to more heavy-handed security and a £1m unbreachable fence; after this, the path was cleared for glamping, Beyoncé and the BBC. There are now butlers for the Winnebagos, albeit ironic ones in fancy dress, and the event has taken its place on the 'national treasure' calendar, alongside Wimbledon, Royal Ascot and The Proms. If the Hendrix paradox was that to be heard, we sometimes have to turn down, what we have learned from Glastonbury is that, to protect inclusivity, we have to keep some people out.

After turning a simple 8-track home studio into a hugely successful Miss Factory, Phil Ward turned to pro audio journalism and became an editor and now freelance writer. He lives in Cambridgeshire where he also runs a small taxi firm for the exclusive use of family members

LIGHTING RENTAL SPECIALISTS

TV, BROADCAST AND EVENTS

PLATINUM JUBILEE CONCERT

LIGHTING DESIGNER: NIGEL CATMUR
GAFFER: MARK GARDINER
ACCOUNT MANAGER: JOE MARTER
CONSOLE OPERATORS: OLIVER LIFELY, ALEX MILDENHALL, MARTIN HIGGINS, MATHEW LEE, AARON THOMAS

SPECIAL THANKS TO: WILL SMITH, MARK STEEDS, JOHN MURRAY, WILL GALLEGOS, JORDAN NAREY, FRAN CONTE, LESLIE FAZI, SHANE ALDRED, DAVID GENGE, MIM SPENCER, JAKE HARRISON, MALCOLM WELLS, MARK CLOUGH, NEJLAH SHADDOUH, AARON STEPHENS, DAVE SCRIVENS, KAREN HILTON, TIM SODEN, CATHERINE WALTON, STUART TAYLER, CHRIS BUTLER, ANT WILSON, CHRIS BARNARD, LYNSEY WEBB, TOM YOUNG

VERSION 2

T: 0203 598 6938
E: INFO@V2LIGHTS.CO.UK
V2LIGHTS.CO.UK

Turn someone in for questioning:
crewcuts@lsionline.com

crew cuts

The Shend interrogates . . .
Nuno Torres, guitar technician

"Best gig? Touring with Saxon - a band I started to listen to when I was 12 or 13 and whose logo I'd draw on my vest before I could afford to buy patches . . ."

Name, Age, Job?
Nuno Torres, 50, guitar technician.

Recent Activity?
Currently on tour with Dark Tranquillity; started off the end of January in the US and now we're in Europe. Also working with Moonspell on festivals and tours as well as some one-offs with other bands.

Worthy Past Glories?
Monster Magnet, Saxon, DragonForce, Napalm Death, Epica, HammerFall, Lacrimosa . . . Mostly metal and hard rock acts internationally, but also some of the biggest names in all kinds of music in Portugal. There's also another big name band I've worked for but I refuse to say it because their "assholeness" makes them unworthy of being a glory!

Why are you what you are?
I've been a music lover since I can remember. As a young teenager during the '80s, I would rehearse with friends as a singer and then joined a band. Watching shows made me realise that I wanted to hit the road with my own band, and the international acts I had the chance to see live gave me the will to actually go on tour. I started out with some big Portuguese acts and the search went on until I could finally tour the world during the 2000s.

Three best things about your job?
Doing what I love and loving what I do within the music industry. The chance to travel, get to know different places, people and cultures. Due to this job (and being a curious guy generally), there's always a chance to learn something every day.

Three worst things about your job?
The time and distance away from my family. Weird travel routes and schedules planned by people who never went on the road. Old-fashioned attitudes that fortunately seem slow to fade away.

Detail the equipment you use?
My SKB case, proudly customised by me; my tuners, a Peterson VS-F StroboFlip, another Peterson VS1 (staying in my workshop at home most of the times for being so big), a classic Boss TU-3 tuner pedal, plus all the tools and devices I've been acquiring a long time, most of those from StewMac. Also, my ACS in-ears (because I do in-ear monitoring for Dark Tranquillity).

Most crucial invention since you started?
The internet and all the smart devices that are constantly being improved, which in turn improves my job.

Proudest moment?
Every time I get asked or pointed out as a recommendable guitar tech.

Best gig?
Touring with Saxon - a band I started to listen to when I was 12 or 13 and whose logo I'd draw on my vest before I could afford to buy patches.

Best gig as a punter?
Depeche Mode on the *Playing The Angel* tour.

Biggest nightmare on the job?
Bad electricity at a show in India some 10 years ago that made the digital pre-amps go crazy, jumping to the wrong programmes or not working at all.

Most irritating request from a member of the public, artist or promoter?
Anyone asking for guitar picks precisely when I'm running during changeover right before the show.

Artist from the past you'd most like to have worked for?
Black Sabbath.

What phrase sends a chill down your spine while working?
"It's not working!"

What other member of the crew would you least like to be?
Merchandiser or bus driver.

Which other member of the crew do you take your hat off to?
Tour manager who accumulates another tech job.

Most irritating thing on the crew bus?
Untidy people. That's our home for a while, we need to live there.

Best hotel you've stayed at while working?
Can't remember names, but I remember one in Redcliffe, Australia that totally amazed me.

Members of the audience you loathe the most?
People who are so hammered they can barely stand, yet they try to jump onstage to steal guitar picks or setlists instead of asking.

Any artists you'd happily spend time with socially?
I actually do that with a few of them.

Best passing through customs anecdote?
Arriving in Argentina with equipment can be difficult when the customs authorities confiscate it because they want 'propina' (tip) . . .

Most bizarre sight you've seen at work?
Venue surroundings in Eastern Europe can be post-apocalyptically bizarre . . .

Favourite artist to work for?
Dark Tranquillity and Moonspell - they're like family.

Favourite / Most hated venue?
Favourite: Most venues in The Netherlands - so sophisticated and with the best facilities. Most hated: Some clubs in the US and a few in Europe . . .

Open air or under a roof?
Under a roof, mostly.

Best festival?
Graspop Metal Meeting.

Best item of clothing when working?
Side-pocketed shorts when the weather allows.

Closest you've come to death whilst touring?
On the most recent tour I did with Monster Magnet, we were on the way to the very last show early in the morning when the driver fell asleep at the wheel - we woke up as the bus was moving on the hard shoulder against the railing. Luckily, there were railings, otherwise it would have been a nasty fall.

Most outrageous thing you did on tour?
Peeing in plastic bottles when no toilets are around. Not too outrageous I suppose . . . or maybe it is.

Most sensible thing you did on tour?
Helping others in many ways.

Email: towerspowers@gmail.com

classic gear

SpaceMap | by Rob Halliday . . .

"SpaceMap was a pioneering computer-controlled system for moving sound around space . . ."

Writing this month's *Tools from Within* (see page 61 of this issue) reminded me of a couple of things. One, that immersive sound and the ability to move sound around a space is not as new an idea as some might have you believe. And two, sound designers have, for some reason, often been pretty good at just going out and making a tool if they can't find one that lets them achieve their ambitions. In particular, it reminded me of Level Control Systems' SpaceMap.

SpaceMap was a pioneering computer-controlled system for moving sound around space, born out of a meeting of two minds. Sound designer Jonathan Deans was trying to create dynamic sound designs to help make live events unique, and quite different from sound that audiences could experience at home. To try to achieve that, he taught himself to write object-oriented software to create a system that tracked performers around the stage and triggered corresponding changes to the show's delays for the John Adams opera *Death of Klinghoffer*. As he tells it, one day he "met a guy called Steve Ellison, who saw what I was doing. And the next day, he had rewritten something that had taken me six months . . ."

For his part, Ellison had started playing with immersive audio with Floating Exceptions, a group of computer artists in Canberra in the late 1980s, attempting to move sound around 16 loudspeakers in a 22ft diameter geodesic dome using early Macintosh computers.

Their meeting led to the creation of Level Control Systems (LCS) in 1991. The company's first product was an automated analogue matrix and cueing engine, developed very rapidly to realise George Lucas' *Super Live Adventure* show in Japan. The second generation of the product introduced, almost as a free bonus feature, SpaceMap. In the software, the arrangement of real loudspeakers could be defined, but SpaceMap also allowed virtual loudspeakers, which could send sound to a defined group of real loudspeakers allowing the simulation of overhead loudspeakers where there were none or, positioning these nodes outside the actual performance space, to smooth out fades as sounds moved around a space. Sounds could then be dragged along routes through the map, with the path then processed and delivered by LCS's computer controlled analogue mixing hardware.

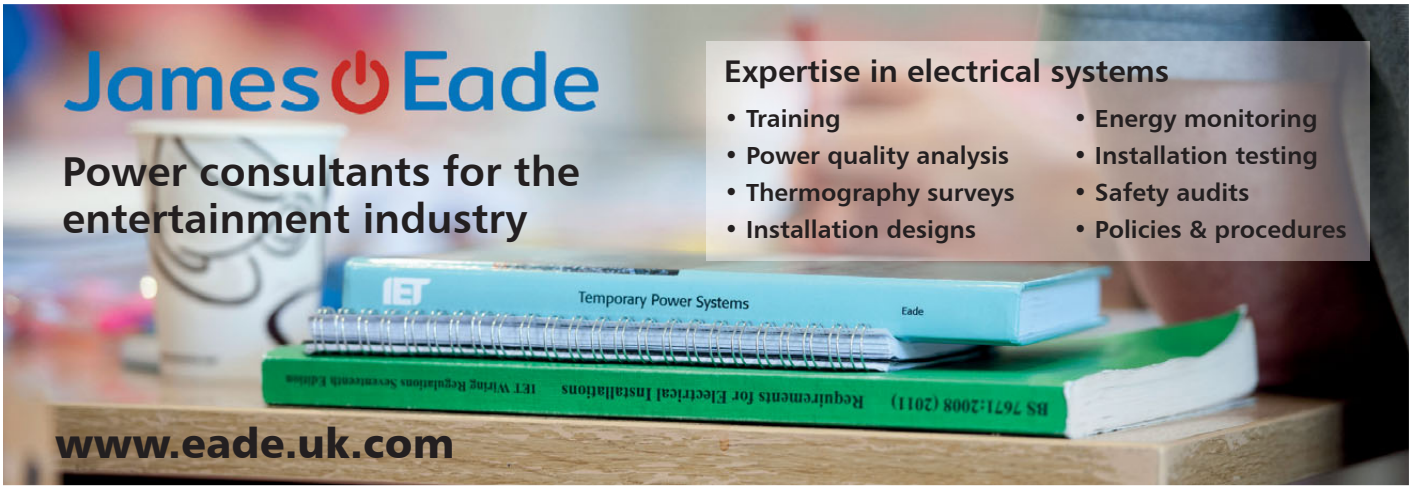
SpaceMap found users immediately, Las Vegas leading the way with *Starlight Express* and then in particular the Cirque du Soleil show *Mystère*, designed by Deans (see *LSi January 1996*). It also found favour with those creating a new generation of themed entertainment, from Universal Studios to Vegas' Fremont Street Experience for which LCS created a custom, double-sized (16 mix bus) system.

In 1996, SpaceMap evolved from analogue to digital, now sitting atop LCS's new LD-88, an 8 x 8 digital audio mixer, of which up to 16 could be connected together to give a 128 input, 128 output system controlled using the LCS CueStation software, running on computer hardware driven by the innovative BeOS software that offered greater performance than the Macs LCS had previously used. This was perfectly timed to serve the next-generation of boundary-pushing shows - including Deans' work for Cirque's *O* (covered in *LSi December 1998*). And as shows kept growing, and designers' ambitions kept increasing, LCS kept updating their system, SpaceMap running on the next generation Matrix3 system used on Cirque's *KÀ* (see *LSi May 2005*) amongst many others.

In 2005, LCS was acquired by Meyer Sound, the company absorbing key LCS staff including Ellison and John McMahon. SpaceMap still exists, now powered by Meyer's Galileo system, and even available with an iPad control system, Spacemap Go.

Rob has been working in and writing about lighting for almost 30 years, on shows around the world. He wonders if this makes him a classic... or just old!

SpaceMap History:
//plasa.me/20yearsofspacemap
SpaceMap Now:
www.meyersound.com/product/spacemap-go



Ibiza comes to Peckham

Over the last decade, London's Peckham neighbourhood has become a hub of creative energy. Record labels, recording studios and event production companies have found their home in the district, leading the way in a host of music genres - especially electronic dance music. Festivals are another key ingredient of the scene in the area, particularly GALA, the independent festival launched in 2016. Since its inception, the event has become an important summer date on the city's EDM calendar and one of the first to return post-lockdown.

This year, GALA '22 was held over three days in June at Peckham Rye Park, coinciding with the Queen's Platinum Jubilee bank holiday. Set up within the park's natural bowl, the event had a rurally-inspired narrative, accentuated by the use of timber for many of the main structures, plus a strong acoustic setting. Dome structures provided the festival with a futuristic feel, and leading techno and house acts on the bill included Manchester dance pioneer A Guy Called Gerald, drum'n'bass stalwart Goldie, and Grammy-nominated Swedish crossover four-piece pop act Little Dragon, along with an assortment of international and local artistic talent.

Five main stages made up the event. The Main Stage was an outdoor arena-style setup designed to cover an audience of around 2,000. There was also the Patio Stage, bringing an Ibiza-style vibe, and the Pleasure Dome, an indoor pod-style DJ venue for an audience of over 1,000. A further outdoor stage - The Giant Steps, named after the two audience viewing platforms it had - welcomed both live acts and DJs, and finally, The Neighbourhood stage hosted a number of emerging local artists over the three days.

Key suppliers for GALA '22 included RSH Audio Limited (audio), Wolf Events (lighting) and Project Power (power generators), whilst Fiend Productions supplied the main stage builds and The Dome Company made the four geodesic dome venue structures.

AUDIO

RSH's audio across the site included PA and DJ equipment. Established in 2009 by Joe Haycocks, the Bromley-based company has become a leading supplier of engineering skills and sound consultancy for the south east of England and beyond. RSH owns an extensive stock of Funktion-One kit, including Resolution 4 loudspeakers, F218MK11 dual 18" bass enclosures, F221 subs, and more. There are also d&b audiotechnik systems from the E, J, M, V and Y-Series; Martin Audio gear, and Yamaha CL and QL series mixing desks, plus Allen & Heath SQ5 consoles. A wide range of Pioneer DJ kit is available, plus a range of microphone systems, including Shure's ULX-D wireless digital solution and 40 DPA 4466 and 4488 headset mics.

The company works on a mix of high-profile music events, with an emphasis on EDM, and supplies a number of corporate clients and events. "I'm personally very pleased to be working with GALA again," says Haycock. "It's been a nice case of evolving and tweaking the PA designs over the last three years. It's an important festival and fantastic to be working with a local project. Having invested heavily in growing our business since 2009, these kind of medium-sized underground shows are one of the main reasons I got into the business."

MAIN STAGE

For the Main Stage, RSH supplied a d&b V8 system with L/R line array hangs and V12 as out-fills, ground-stacked, plus V and J-Infra subs on the floor; the set-up is driven by D80 and D20 amps. "GALA takes place close to a residential neighbourhood, including a school behind the main stage, so noise management is a priority for system design," explains Haycock. "The V-Series give us exceptional directivity, outstanding headroom, and dynamic bandwidth. Both the V8 and V12 provide 80° and 120° horizontal dispersion respectively, maintained down to 250Hz. The V8 delivers a superb and consistent result." Commenting on the J subs he continues: "Using the J-Infra sub extends the frequency response of a J-Series system down to 27Hz; it has two bass-reflex chambers containing three 21" drivers, two facing forward in one chamber. It is a superb design combination. The D20 is a four-channel amp ideally suited to mobile and installation applications which require low to medium sound SPL capabilities; it's rock solid and reliable. Maximum volume at the Main Stage FOH was 95dBA, and good separation between all main stages was ensured."

As revellers descend on Peckham Rye for dance music extravaganza GALA '22, Simon Duff checks out the audio systems at work at the festival . . .

Consoles used at the Main Stage were Yamaha CL5 at both FOH and monitors, with RSH's Luke Harmon mixing FOH, while in monitor world Miles Jarrett oversaw mix duties with patch tech, Danny Ford. Commenting on the CL5, Haycock says: "Just about all live engineers know how to use it. CL5s are accepted on a mid-sized festival without question and reliability is solid. The signal processors provided on the desk are plentiful and of high quality, including the Portico 5033/5043 EQ and compressor devices that bring Yamaha VCM technology together with the talents of Rupert Neve. The platform is pure and natural, so our engineers can create and deliver the ideal sound."

Stage split was via a Yamaha Rio3224-D2 Dante stage box, running 32-bit processing at 48kHz, a passive spilt with no gain sharing. "For a medium-sized festival, Rio meets our needs split wise," says Haycock. "It has 32 analogue inputs, 16 analogue outputs, and eight digital AES/EBU outputs. Rio connects directly to Dante digital audio networks, allowing us flexible system configuration. Dual power supply units are built-in, giving high reliability, and a graphic display offers easy visual confirmation. Of course, the reliability factor from Yamaha is a given!"

Main Stage monitors included 12 d&b M4s with side-fills of d&b v10s plus subs. Mics included Shure SM57s and SM58s, Sennheiser MD421s, AKG 414s, plus Shure ULX wireless mics.

ON THE PATIO

For The Patio Stage, the second main outdoor stage and one with a distinct Ibiza vibe, a dedicated DJ set was the order of the day. The PA line-up included a L/R hang comprising d&b V8 and V12 loudspeakers and J Subs, plus Y7P point-source speakers deployed downfield placed in stylish white wooden pillar designs. M4s were used for stage monitors, with the FOH mix monitor set-up comprising a single Yamaha QL1 console. DJ kit supplied by RSH included Pioneer CDJ-2000 and DJM-900 Nexus 2 mixers.

Electronic dance act Gerald Simpson, better known as A Guy Called Gerald, headlined The Patio Stage on the first

For the Main Stage, a d&b V8 system in a L/R configuration, with V12 as out-fills and V and J-Infra subs was supplied

The Pleasure Dome had a four-point hang PA system comprising V7P and V10P units, plus V and J-Infra subs at the front

night. His live set-up working around two laptops running Propellerhead's Reason, a boutique Roland SH-101 keyboard and a Rane MP2015 rotary control, four-input DJ mixer. Of the Rane mixer, Simpson says: "Quite simply, it is one of the best mixers produced by Rane. It gives me the warm analogue feel I want to give to FOH. There are no compromises in the design." Creating a live mix of original tracks and writing on the fly, A Guy Called Gerald's set, was a kaleidoscopic fusion of jungle, house, ambient and pop.

THE PLEASURE DOME & GIANT STEPS

In The Pleasure Dome, a four-point hang PA system was deployed comprising of V7P and V10P, plus at the front, V and J-Infra subs. Positioned on sticks at the two audience entrance points were three Y10Ps. For The Giant Steps, the third main outdoor stage, a ground-stacked d&b V8 Series array plus J-Infra subs were used. With Yamaha QL5 used at both FOH and at monitors. FOH mix was provided by Dave Woodman, monitors by James Parker with Dan Cecchini on patch duties. For the smaller Neighbourhood Stage, a Martin Audio PA was used. In total, RSH Audio had 10 engineers working on site.

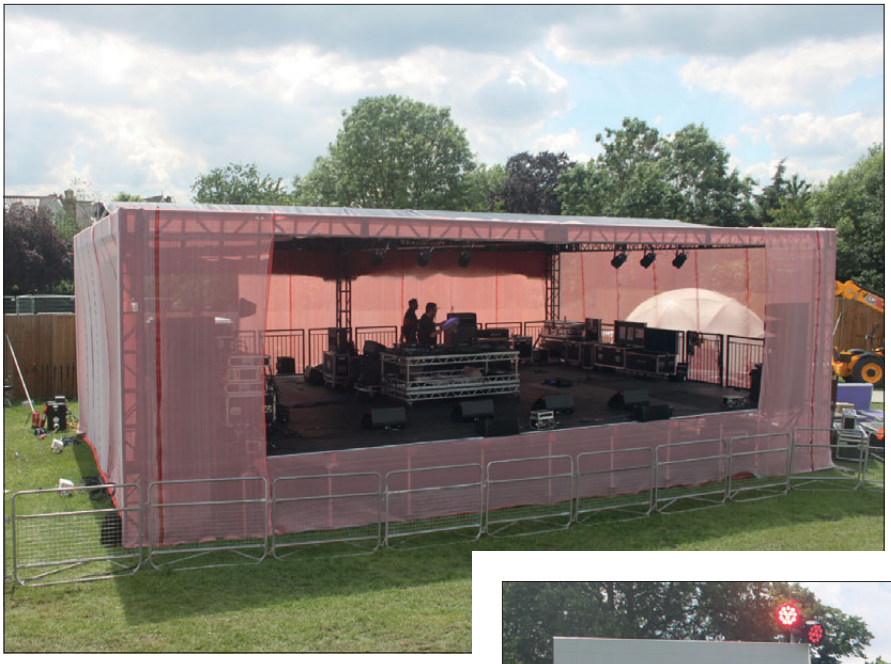
THE DOMES

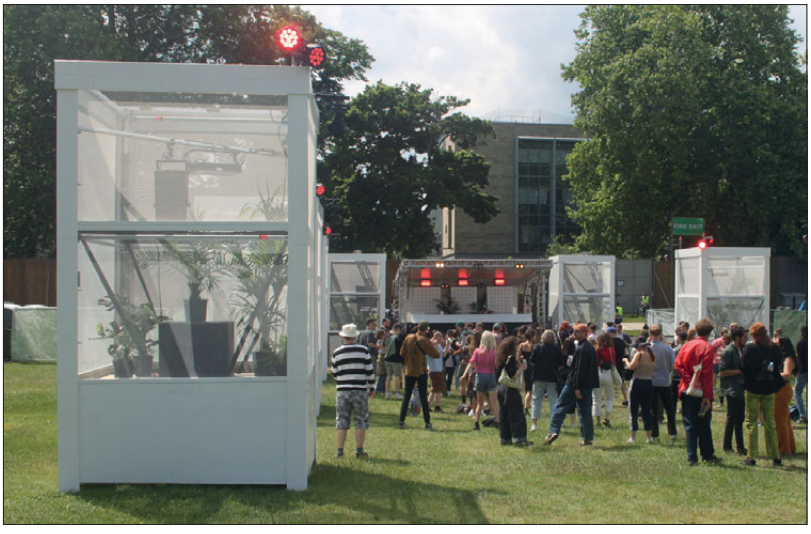
The Dome Company provided four geodesic structures for GALA '22 - the Pleasure Dome venue, plus three smaller structures used by production. Founded in 1990, the Suffolk-based specialist is well-established in the field, with clients including WOMAD and Glastonbury, plus many other festivals along with supplying for theatre, corporate and bespoke design for events. The Dome Company's MD, Isambard Gillilan, explains the story of the firm: "The first domes we made were created circa 1976 by my father, who created the concept and style of design. Following that, The Dome Company was formed, and has been designing and manufacturing high-end original structures ever since, in keeping with the original style to this day."

He continues: "As for my personal history, I worked for the company on and off before taking it on in 2014. I also trained and worked as a sound engineer and later an acoustician after completing a post-graduate degree. Studying with the Institute of Acoustics has been invaluable for understanding how to deal with these spaces."

The 25m Pleasure Dome venue at GALA '22 was made with curved, laminated timber and steel nodes. There are many cover variations available, but in this instance, GALA opted for a sailcloth finish on both the 25m and 10m domes used.

Gillilan explains the domes' acoustic properties: "We can get a great sound in all of our structures and control that sound to suit the performance. The 25m dome is almost hemispherical, which means it has the potential to flutter or echo, have standing waves and possibly create all kinds of strange phasing and modulation as with any parabolic type shape, particularly when stood in the centre."





Clockwise from above: The Giant Steps stage used a d&b V8 Series array and J-Infra subs

The Neighbourhood Stage hosted local artists, reinforced by a Martin Audio PA

The Patio Stage had an Ibiza party vibe, with a d&b sound system delivering the oomph

He continues: "Our domes provide a space where there are many load-bearing fixing points and an uninterrupted floor space, so they have the potential to accommodate the very best acoustic environments which is achievable with the right knowledge and approach. Tented structures are very much affected by humidity, temperature and atmospheric pressure, so their acoustic properties need to be carefully considered. In the case of this dome, with a very lightweight cover and having mild summer conditions, high frequencies above 4000Hz can be reflected form the surface of the tent; below these, an absorption co-efficient of 0.5 or above can be achieved between 2500 to 4000Hz. Mids are sorted out thanks to the densely-packed audience and through good speaker management and lower frequencies are largely unaffected by the structure."

Build time for the domes at GALA was three and a half days, with six crew members working on site. Other key projects for the company include installing a 7.2 surround sound spatially immersive audio experience at Wilderness Festival with Jon Hopkins, collaborating on a project with acclaimed multi-disciplinary artist Chris Levine, former creative director of The Eden Project.

SOLID SUCCESS

There was no shortage of live events taking place in London over the long Jubilee weekend, and GALA '22 certainly rose to the occasion. Over the three days, revellers were treated to a mix of pop, hip-hop, R&B, nu jazz, grime and rap. DJ sets from local artists included Hyperdub stalwart Shannen SP, Bradley Zero and OK Williams. In The Pleasure Dome, Goldie played Fabric's takeover, and Japan's DJ Powder presented a mix of cutting-edge drum'n'bass rhythms and melodic crescendos. On The Patio, A Guy Called Gerald proved what a vital force he remains. Other festival highlights included live sets from R&B artist Ojerime, avant-garde jazz act Wildflower, Manchester rap act Children of Zeus, disco boogie pioneer Leroy Burgess and pop from Little Dragon. Moreover, Gilles Peterson's DJ set was an eclectic mix of jazz, world and techno, concluding with the Sex Pistols classic *God Save The Queen*. The prefect finale.

Throughout the three days, GALA's high production values shone through, and its uniquely independent approach, coupled with seamless changeovers and no spill between the stages, was admirable. Bring on 2023.

"We can get a great sound in all of our structures and control that sound to suit the performance . . ."

- Isambard Gillilan

The three into one generic solution

PROFILE PC FRESNEL

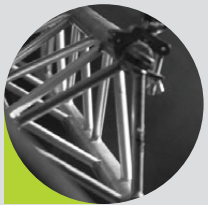
ROBE®

ROBE®

TE™
TRANSFERABLE ENGINE

PAINTE™

THE PALETTE OF CREATIVITE™



rigging call #96

Them's the brakes

"Double brakes are the hi-vis vest of entertainment rigging. 'Cosmetic' secondary suspensions are often inadequate, but manage to satisfy venue management . . ."

"Double brakes mean you don't need safeties, right?" Well, not necessarily. The question is usually asked because 'safeties' are time-consuming, soak up equipment and create work at height at often the least opportune moment in the day.

The insistence for secondary suspensions is probably made with good intent, but are they really necessary? Based on a survey of anecdotal evidence carried out by PLASA following the 2010 Rigging Conference, a body of 2,334 years' experience was created from surveying around 100 riggers. Extrapolating from that, a chain hoist failure of any kind occurred once in 24 years. Brake failure represented about one occurrence in 212 years, about 11% of all the failures reported. Perhaps because double brakes were offered by hoist manufacturers, they were regarded as a preferable specification, it was certainly a commercial opportunity few hoist distributors would ignore but perhaps without properly understanding the issue.

Subsequent conversations with engineers from several brands suggested they weren't comfortable with the concept - especially since it seemed to be believed that using their hoists with double brakes meant no other precautions were needed. The entertainment industry constantly adopts gear from other sectors, chain hoists being a good example. Did the manufacturer design the hoist for a single or two-point suspension over people? Almost certainly not, and safe in the knowledge that employers bear the responsibility in making the necessary allowances for a new application - read the small print in the manual.

There are two ways of using chain hoists over people; for suspending or moving a load. Many venues don't require secondary suspensions, provided the hoist has double brakes and carries 50% of its working load limit. This is a potentially hazardous policy unless the load will not alter position significantly should a suspension fail, or create dynamic forces that may create additional, possibly greater risk. A chain motor with 12 brakes could still suffer a chain-to-hook connection failure and in a two hoist system, that's catastrophic. This issue is addressed specifically in ICOPER v2.0, clause 5.7.

If the load is moving, things get more complicated and the specification of the entire system and its management become critical. Double brakes in combination with load and position monitoring, extra limit switches and a programmed operation ultimately controlled by a human is usually required. However, the basic principle remains: in the event of a suspension failure, the flown element should still remain adequately supported.

The much-quoted German Social Accident Insurance (DGUV) 'regulation' 17 is similar to employer's liability insurance in the UK. This regulation is compulsory for employers in Germany in order to comply with the German Social Code (SGB chapter 7, if you want to check). There is no specific requirement for a double brake in DGUV 17, but it does call up DIN 56950 ('Stage machinery', not specifically chain hoists) which makes many requirements on manufacturers and users, including a working coefficient of 12.

There is nothing in UK law specifically requiring the use of a second brake. Regulation 8 (1) (c) of the Approved Code of Practice for LOLER - a 'defined' standard - relates to people working under loads rather than when loads are suspended over people whilst regulation 6 (1) states that loads may not be allowed to fall freely. Neither really applies to the entertainment industry where the load may be over an audience as well as people at work, though the principle is clear.

Meeting an 'established' standard - such as the Technical Standards for Places of Entertainment (*The Yellow Book*) in the UK or ICOPER v2.0 - would probably be of benefit in your defence if you are being prosecuted. However, if it's got as far as a prosecution, that will be a mitigation at best; compliance doesn't 'confer legal immunity'.

K2.35 in *The Yellow Book* states 'loads moved above people (including an audience) should be risk assessed' and 'it may be found that one brake is sufficient (e.g. when using groups of hoists to support a relatively rigid structure)'.

Category A hoists in BS7906-1 require a second brake and a 15% overload limiter as required to conform to BS 7905-1*. It also states systems shall not rely solely on features of the control system. EN 17206:2020 does not provide an answer to whether you need safeties or not as that depends on risk assessment, and specifically doesn't require the use of a secondary brake. It does demand monitoring brake air-gaps, preventing inadvertent movement, limit switches being over-run, and the need for a group stop function.

Double brakes are the hi-vis vest of entertainment rigging. 'Cosmetic' secondary suspensions are often inadequate, but manage to satisfy venue management that lacks technical competence.

So, what's the best solution? If certain criteria is met, secondary suspensions may not be necessary but it's a question of risk assessment and rigging design and isn't just about double brakes and a clever control system.

** The British Standards Institution withdrew BS 7905-1 and BS7906-1 in 2020, but they remain standards and can still be used.*

tools from within

panLab | by Rob Halliday

"panLab doesn't directly manipulate sound, but rather provides an elegant interface for you to define your sound paths . . ."

Like seeds sown a season ago and now coming into beautiful bloom, it has been wonderful watching people's various lockdown projects coming to fruition. That forced break in the usual routine gave a chance to do something different, to work on ideas long held but which there was never normally time to move forward. From that, we're benefitting from a number of powerful new tools built specifically to help with things we do. panLab is one of those tools.

The big thing in sound at the moment is spatial audio. That means having multiple speakers and using a control system to manipulate sound between them so the source of the sound seems to move around the space. You've always been able to do that by manually manipulating the levels of each speaker, but the spatial systems detach you from having to think about the actual speakers. Once set up, you just click where you want the sound to seem to come from, drag a path you want it to follow - or even use tracking devices so it all happens automatically - and the system figures the rest out.

Big shows use proprietary systems such as d&b's Soundscape, L-Acoustics' L-ISA or Meyer's Galileo (descended from the earlier LCS system), or the speaker-independent TiMax. But what about the other shows? All those hundreds and thousands of shows that run on the software that has become our industry's *de-facto* sound control system, QLab? Until now, QLab users have had to manually manipulate routing and outputs to move sounds around - do-able, but fiddly, convoluted, painful programming - particularly for complex movement paths.

panLab, created by theatre sound engineer Daniel Higgott, does that work for you. It's a tool to help with a tool: it doesn't directly manipulate the sound, but rather provides an elegant interface for you to define your sound paths, then does the work of programming QLab.

panLab thinks of all QLab cues as objects on what panLab calls a panner, and all your QLab outputs appear as loudspeakers on its space map. It can pull all of that from QLab automatically, then you drag and drop the speaker objects into their correct relative positions. Once set up, you just start dragging routes around the space. panLab figures out how the sound needs to crossfade from real speaker to real speaker to achieve that, using complex algorithms created by Higgott's brother Oscar, a physicist. Then it programmes the relevant fades into QLab for you - Higgott calls it 'printing the information into QLab'. That might be a long sequence of cues, but you can then just collapse it down to one action in QLab.

Because all the actual playback is then handled by QLab, you don't need panLab to run the show. It's a sound designer's tool: once a show's ready to go, it can just move with you to the next show - no need to licence or pay for it per production. Just as they quickly adopted QLab because of its unique strengths, designers are already adopting panLab - you might have seen it mentioned in the piece about the immersive *Secret Cinema presents: Bridgerton (see LSi June 2022)*, and it was used on *The Ocean at the End of the Lane* in the West End, at the Sydney Opera House, and elsewhere. And it's evolving rapidly, already up to version two. Like QLab, you can rent it or buy it outright. Or try it for free for a week - why wouldn't you?

www.innovateaudio.co.uk

Rob has been working in and writing about lighting for almost 30 years, on shows around the world. He wonders if this makes him a classic... or just old!

Has your life been turned upside down by illness or an accident?

Financial support for industry technical professionals working in live events, theatre, TV and film.

If you, or someone you know is in need of help, please get in contact at **www.backuptech.uk**

Backup offers support and help to get you back on your feet.

Backup Tech

www.backuptech.uk

ON TEST
Cyberlight LED

Richard Cadena reviews the new moving mirror fixture from High End Systems . . .

ABOUT THE EXPERT
RICHARD CADENA
For Richard, the road to authoring books and magazine articles ran through High End Systems and Martin, took a left turn at designer, tech, and electrician, and is still under construction.
richard.cadena@plasa.org

Riddle me this: which light is brand new to the industry, yet has a long, storied history in the business?

The 'new' Cyberlight LED actually has a lineage dating back to 1994 and comes from hardy stock with a proven track record on concert tours, large nightclubs, theme parks, and corporate events. The original Cyberlight had bells and whistles galore, and the new Cyberlight LED adds even more to the legacy.

Moving mirror fixtures have an inherent advantage over moving yoke fixtures. Because there is less mass to move, they can move quicker with faster start and stop times - and that's the hallmark of the Cyberlight legacy. The Cyberlight LED can pan 180° in 0.56 seconds, and can tilt 112° in 0.53 seconds, which is much faster than any moving yoke fixture. That alone makes it capable of adding energy to a show. And unlike its predecessor, which used relative encoding, the Cyberlight LED has absolute encoding with ETC's Whisper Home technology. This is a more advanced method of keeping track of the radial position of the stepper motors. Instead of the clacking sound it used to make to find its home positions for the motorised effects, it knows its absolute position at all times, and can correct itself without a hard reset. Like its predecessor, it features a break-resistant mirror made of treated glass.

LIGHT WORK

Cyberlight was always a big fixture, and whilst the new fixture is no smaller, it is much lighter at 38kg. Some of the features include variable zoom from 10° to 28.5°, CMY colour mixing, linear CTO from 6,000K to 2,400K, a colour wheel with seven replaceable positions plus open, a 16-blade iris, light and heavy diffusion, two rotating gobo wheels with seven interchangeable glass gobos (including the classic indigo 'Chiclets' and the Technobeam Technowedges LithoPatterns), plus some metal gobos, and a four-facet rotating prism.

The light source is a 470W white LED engine with a native colour temperature of 6,000K (I measured between 5,624K and 6,106K, depending on the zoom and frost settings). According to the specs, it outputs 12,750 field lumens through an eight-element optical lensing system. It operates from 100VAC to 240VAC at 50 or 60Hz, and it draws 3.2A at 208V/60Hz or 5.7A at 120V/60Hz, and it is very well power factor corrected. According to the literature, it outputs 25-27lm/W, depending on the zoom setting.

IN-DEPTH EXAMINATION

When I visited the High End Systems demo room to look at the fixture and take measurements, Joe Haller operated it whilst I metered it with various settings. We had about a 12m throw, which produced a 2.29m wide spot with the zoom at 50%. The beam was peaked in the centre, and it dropped off to 50% intensity at about 1.8m diameter width. I measured 308 footcandles (3,315 lux) with a correlated colour temperature of 6,053K. When we dropped in the full frost, the width widened to 3m at 10% of the intensity of the centre, and the centre illuminance was measured at 142 footcandles (1,528.5 lux).

Zooming out to 100%, the beam went to around 4m wide, with a 50% drop-off at 3m. The centre illuminance was 129 footcandles (1,388.5 lux) at a colour temperature of 5,982K. Adding full frost brought the illuminance to 59.3 footcandles (638 lux) with a temperature of 5,624K and a field of 4.42m at the 10% mark.

An Ethernet port offers control via sACN or Art-Net. Also new is the power pass-through. One fixture uses 700W so you can daisy-chain two fixtures on a single 20A circuit and still have plenty of overhead

Lastly, we zoomed all the way in, and the beam narrowed to 1.4m. I measured 762.7 footcandles (8,209.6 lux) at 6,106K. Adding full frost widened the field to 1.5m and the illuminance was measured at 347.1 footcandles (3,736.2 lux).

In all cases, the CRI Ra (R1-R8) was measured at 92 and colour quality scale (CQS) was 89, except with full CTO (85 for CIR and 82 for CQS). Likewise, the TLCI(Qa) was measured at 91, except with full CTO, in which case it was measured at 69. The spectrometer indicated a slight deficiency in red and R12 deep blue, which is ironic because two of the best-looking LithoPatterns in the fixture (Technowedges and Chiclets) use those two colours and they look spectacular. The TM-30 colour rendition reports are shown in *Figures 1 and 2* overleaf for both 6,000K and 3,200K.

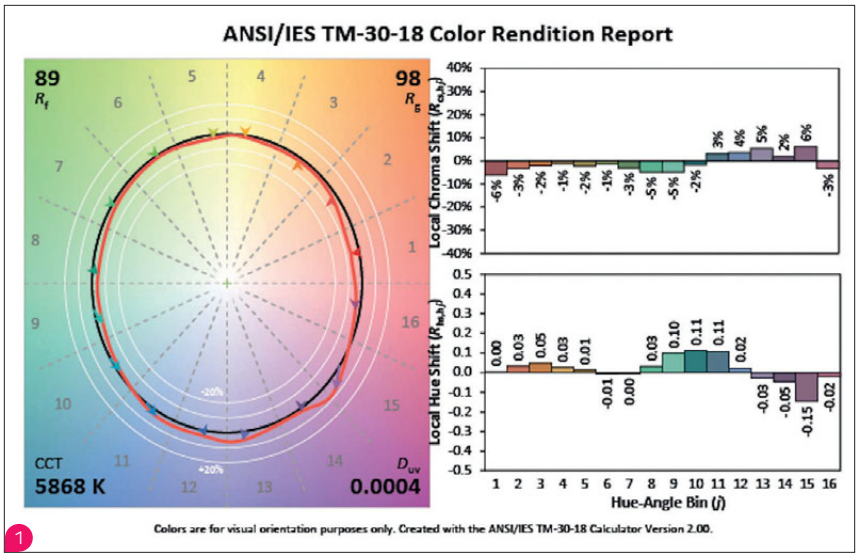
Cyberlight has been through many iterations, which speaks volumes about its popularity and its utility as a workhorse lighting instrument. Now with an LED light source, the emitter life is greatly extended compared to the previous arc lamp source, which makes it much more suited for theme parks and other themed environments. There are many moving yokes with the features, intensity, and quality of light comparable to this fixture, but Cyberlight LED also has some features, like a very fast mirror and great morphing effects that are extremely rare. Very few models of luminaires can boast a legacy spanning four decades, and even fewer are automated. I wouldn't be surprised if it lives through another four or five decades.

ORIGIN STORY

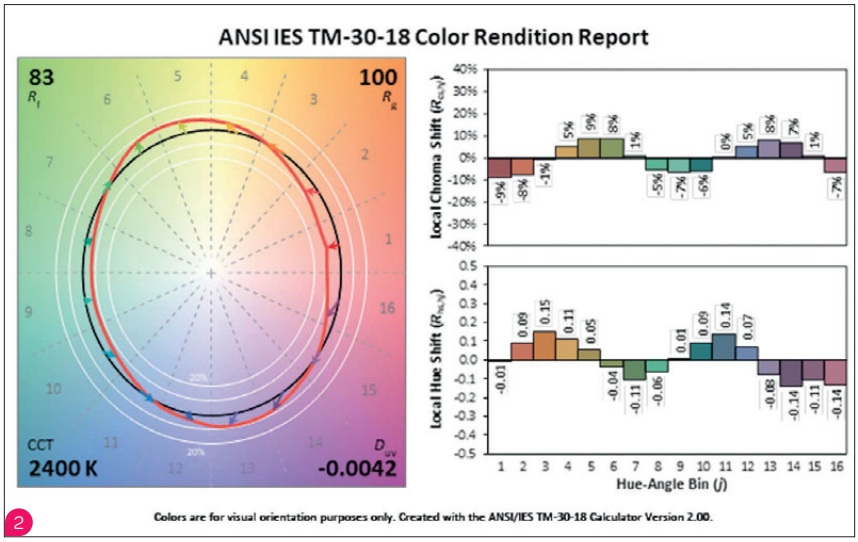
As mentioned, the origin of the new High End Systems Cyberlight LED dates back to the early 1990s, a time when automated lighting was in its infancy. Back then, I worked at High End, and one day, I got a call from Robert Kliegl, the grandson of the founder of the legendary Kliegl lighting company in New York. He said I should contact Stefan Graf, the owner of Illiminart Lighting. Kliegl had been working with Strand Lighting to develop an automated light to meet Graf's specifications for a project in Detroit, but the spec' was impossible to meet, so he was kindly passing the information along to me.

Since Detroit was John McDowell's territory and Graf was one of his accounts, I turned the lead over to him. After an initial phone call, a fax from Graf started falling out of the fax machine. It kept coming and coming. And coming. When McDowell finally read it, he tossed it onto my desk and we looked at it together. It was a spec' for several dozen automated lights that didn't exist and were unlikely to ever exist

"The original Cyberlight had bells and whistles galore, and the new Cyberlight LED adds even more to the legacy . . ."



1



2

The fixture components can be accessed by turning four quarter-turn fasteners

TM-30 Colour Rendition Reports at full white (Figure 1) and with 2400 K correlated colour temperature correction (Figure 2)

because it called for a serious amount of light output as well as every feature known to humankind. They were to be installed above the ceiling in a huge dome, with automated ports that would open at the touch of a button. It was the soon-to-be-built Chrysler Dome, a showroom for the Detroit carmaker.

We both shook our heads and wondered how anyone could seriously ask for such a beast. McDowell took the spec' straight to Richard Belliveau, the inventor of the Intellabeam and so many other successful products at High End, and dangled a huge potential order in exchange for building an impossibly bright fixture on an impossibly short timeline. In his customary style, Belliveau, furrowed his brow, moderated his rising blood pressure, and very reluctantly made up his mind to accept the challenge - then mentally rolled up his sleeves and started designing it. Meanwhile, McDowell flew to Detroit to meet with Graf and Chrysler to convince them that High End Systems was the right company for the mammoth task.

After much wrangling and back and forth, a prototype of the fixture began to emerge. Within six or eight months, a behemoth of a moving mirror fixture was soon built. It looked so big that it was an odd sight, but the design called for the body of the fixture to be concealed above the ceiling. It had a 1,200W MSR arc lamp source, and every feature that could be imagined in the early 1990s.

Eventually, a contract was signed, the fixtures produced installed, and even though it didn't quite meet the impossible spec' dreamed up by Graf, it was closer than any other fixture around.

A year or so later, that fixture was re-designed and marketed as the Cyberlight.

www.etcconnect.com/products/high-end-systems

HES CYBERLIGHT LED TECH SPEC

FEATURES

- Dimensions (HxWxD, mm) 1149 x 439 x 339
- Weight: 38 kg
- Source: 470W LED
- Output: 12,750 lm (field)
- CRI: >90
- Colour mixing: CMY/CTO
- Colour temperature: down to 2,400K
- Colour wheel: 7 interchangeable dichroic chips+open
- Zoom: 10° - 28.5°
- Pan / tilt: 180° / 112°
- Prism: Four-facet, rotating
- Frost: Light and
- Iris: 16-blade
- Gobos: 2
- Voltage range: 100-240 VAC, 50-60 Hz
- Input: powerCON TRUE1 Top

PAPER POWER

62% of the energy used to produce paper and paper-based packaging in Europe comes from renewable sources.

Source: Confederation of European Paper Industries (CEPI), 2020.
CEPI represents 92% of European pulp and paper production

Discover the story of paper
www.lovepaper.org
Scan for paper facts, activities, blogs and much more!

LOVE PAPER®

in profile

Teodora Lyubomirova talks to FOH engineer, **Ema Gazdík** . . .

"Sometimes at festivals, artists would come and ask, 'Who is my sound guy,' and I'd say 'Hello, I am your sound guy' . . ."

Finding your calling is one of life's great challenges, and that's been very much the case with live sound engineer Ema Gazdík, whose path to a career in events took her on a rather unconventional ride. Hailing from Slovakia, she never considered working in the industry professionally until later in life, despite a keen interest in music, performance and technology.

"It's very difficult to make a living in this industry back home," she opens. "I started out studying physics, but ended up dropping out and pursuing Chinese Studies and International Business, but I knew that wasn't a right fit for me, either. I wanted to do something with music, so I applied and got accepted into University of Liverpool to study Music and Technology with Philosophy. I fell in love with the city and its music scene, so I took a leap of faith and went for it. This was probably the most important decision I made."

In her first year, Gazdík took a module in sound recording and production. "Up until then, I had thought I wanted to be a performer, but then I realised sound production combined all of my interests - music and being creative, as well as tech," she explains. "That summer, I worked at venues and festivals, finding out more about the backstage roles, especially in sound." A fast learner, she started shadowing sound engineers on shows across the city and the northwest of England, later taking a part-time job as a sound tech at a university venue. "It was 2019 and I had started to mix my very first shows; then COVID hit," she continues. "For a while, I kept wondering if I had made the biggest mistake of my life choosing this as a career. I never really thought that was the case, but I just couldn't see how I could progress."

Persevering in the face of setbacks, in 2020 Gazdík took a placement at Future Yard, a Birkenhead-based venue that hosted livestreams and other socially-distanced events during the pandemic. "The venue didn't have anyone who would take care of the technical side of things, so at the end of my placement, they hired me as a technical production manager," she explains. Her one-year tenure was a baptism of fire, with Gazdík looking after FOH, equipment maintenance, and even lighting if called upon. Besides this, she has also tried her hand at other backstage roles, such as stage management, tour management ("filling out my first post-Brexit carnet was quite an experience"), artist liaison, backline and audio patching, but she's most at home as FOH or monitor engineer.

"I've probably mixed around 180 separate sets during my time at Future Yard," she says, "and until six months ago, we had four bands playing on each show night, so that quickly taught me how to make things happen! Being stuck in is my favourite way to learn."

One of Gazdík's highlights from her time at Future Yard was a concert by acclaimed US bassist MonoNeon. "That show had percussions, keys, guitar, bass, a sax, a flute, plus vocals - all set-up on a small stage of a grassroots venue with a capacity of 300. Getting that mix to sound right both for the audience and the performers onstage, and with the limitation of the equipment I had, was quite an experience." A similar challenge was posed at a gig by eight-piece band, caroline. "They played right on the dancefloor, surrounded by the punters, so I was kept on my toes the whole time, trying to ensure the vocal, which was pointing towards the PA, wasn't feeding back. And we had no feedback throughout, so that was very rewarding."

Working in a rather male-dominated industry, how has she found the attitudes towards a female sound professional? "Usually it's OK," she says. "I've had a few experiences where people would try to explain to me how to lift a bass amp, as if I'd never done it before. Other times, people have been surprised to see a woman behind the desk, especially in the grassroots scene; but when they understand that I know what I'm doing, they are very nice. Sometimes at festivals, artists would come and ask, 'Who is my sound guy,' and I'd say 'Hello, I am your sound guy,' and things would just carry on naturally from then on."

Gazdík has recently joined Liverpool-based rental and production company Adlib and is looking ahead to a busy summer. "They are sending me on a lot of festivals and shows, which is great because I'll get to work with much bigger systems," she says. Besides her commitments with Adlib, Gazdík is the FOH and monitor engineer for singer-songwriter Amy Michelle, with whom she's visiting Latitude Festival later this month. "I mixed her first two shows, in London and Dublin - she's done phenomenally well, and we will continue to work together. Amy is a singer with a very dynamic vocal range, so IEMs are the best option."

It's only been a few years since Gazdík set out to work in live sound, but the journey has been more than eventful - and with her calendar getting busier by the day, it would be a fair guess to say that there will be plenty more to come from the Slovak-born sound engineer. Her message to those looking to follow in her footsteps? "People in our industry are usually very approachable and keen. I used to feel intimidated to approach engineers at shows, but then I got over it and got to learn so much. Everyone in this industry is really passionate about what they do and are very willing to share, so getting out of your comfort zone is key."

PLASA SHOW

4-6 Sept 2022
Olympia London

EXPLORE THE EVOLUTION OF ENTERTAINMENT TECHNOLOGY

at the UK's flagship event for Audio, AV, Lighting, Rigging and Staging

The live sector has been through a lot in recent years, but professionals like you have kept it alive.

PLASA Show 2022 will celebrate innovation and adaptability and will be unmissable for anyone invested in the future of this incredible industry.

REGISTER FREE
www.plasashow.com

@plasashow
@plasashow
@plasaonline
@plasaonline

#PLASASHOW

THE NEW STANDARD.

THE MAC ULTRA FAMILY

Born from our largest engineering initiative in a decade, the new Martin MAC Ultra Performance and MAC Ultra Wash have raised the bar for extremely bright and compact lights. Featuring benchmark output across the zoom range, a true next generation framing system, higher definition optics and astoundingly low noise levels, our two strongest workhorses ever built are ready to amplify the impact of any live event. Show after show and year after year, the MAC Ultra Family will deliver the biggest results on the largest stages.

Experience more at **martin.com/MAC-Ultra**

Martin

© 2022 HARMAN