

Lighting & Sound INTERNATIONAL

August 1999

The Entertainment Technology Monthly

Power of Myth

- Star Wars Roadshow in Dublin

Audio Analysis

- live sound mixing consoles under review

Heaven on Earth

- the Torhout Werchter Festival, Belgium

Certain Aura

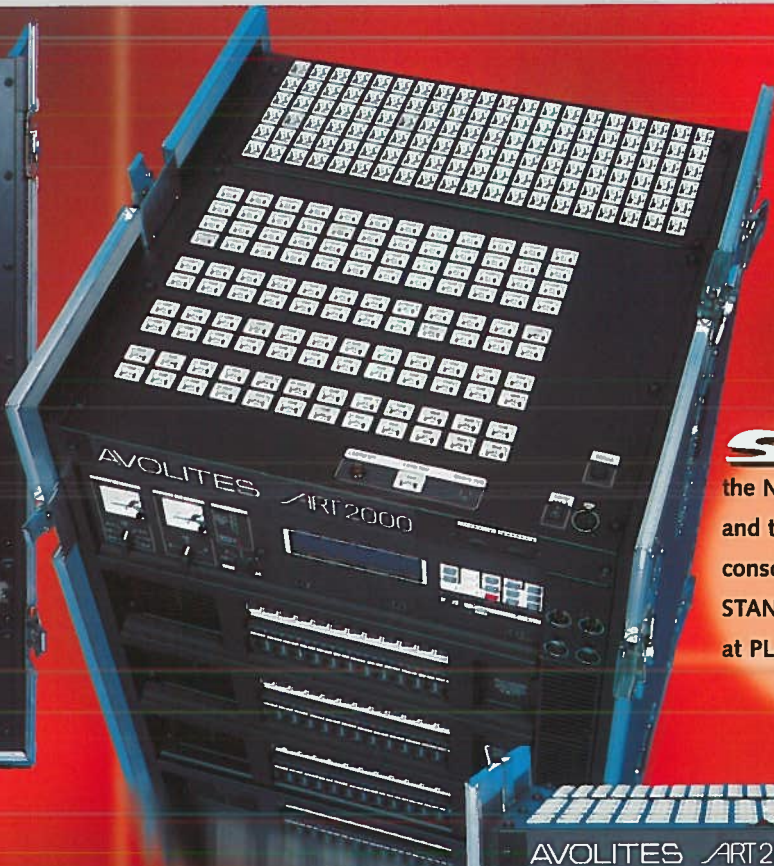
- Profile of Aura Sound

Magic Moments

- Mike Oldfield at the NEC

Swan Lake

- the English National Ballet production



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PLASA Awards *Recognising Innovation and Excellence*

In its 22-year history, the PLASA Show has seen literally hundreds of new products launched, ranging from those that provide the very basic nuts and bolts of a system through to highly sophisticated products that allow the creative process to be taken that vital step further.

Some have fallen by the way, but most have gone on to be highly successful and demonstrate just why this industry is continually reinventing the way projects and productions are managed and why entertainment and venue technology is respected worldwide. This year just under 50 products have been nominated...

The Palmer 2000LX power amplifier is a massive toroidal transformer which provides 2200W/rms output power in the 4 ohm bridged mode.

Adam Hall - E32

The I-CON DPI1000 is the world's first digital powered mixer. In addition to a 0-input, four-output digital mixer, it incorporates two effects processors.

Allen & Heath - H30

The Mimic system is the first ever modular NXT flat panel speaker system. Based around a modular sub-frame structure, it has many uses.

Amina Technologies/CIE - C24

No Worries TC can record up to 12 hours of 2048 DMX512 channels. It is capable of tracking time code for museum and trade show applications.

Artistic Licence - G24

Colour-Fill is the first digital luminaire to use four-colour, high brightness light emitting diodes. It provides noise-free colour changing.

Artistic Licence - G24

The ART 2000 dimmer is a robust unit which has four bays that can be fitted with either mains distribution or dimming channel modules.

Avolites - C4

Avenger's MiniConductor is a universal control system that enables the synchronisation and interaction of almost any type of entertainment equipment.

Autograph Sales - B4

Duran Audio's Intellivox line array is an advance on the conventional column loudspeaker used for speech and background music. It has built-in digital processing and amplification.

Autograph Sales - B4

The Q.book is the latest development in a range of easy-to-operate control systems. When combined with figaro'Q software, it presents a new method of controlling stage machinery.

batalpha Bobach - R24

The Modular motion control system facilitates the positioning of chain hoists and the programming of complex and automated show sequences.

batalpha Bobach - R24

The CXi 821 is a two-way compact full-range loudspeaker designed in response to market demand. It utilises the latest cone drive unit technology partnered with the CDX-1 1750 compression driver.

Celestion - G34

The Autoyoke was developed to meet the moving light needs of the theatrical lighting designer. It is the synthesis of theatrical profiles and an DMX-controlled moving yoke.

City Theatrical - EP12

The iColor MR is the world's first digital colour-changing lamp that plugs into MR16 fixtures. It uses patent-pending Chromacore technology, which employs micro-processor-controlled red, green and blue LEDs.

Color Kinetics - EP32

The iColor Cove is a full spectrum digital colour-changing cove light bringing 16.7 million colours and an assortment of lighting effects. As with iColor, it uses Chromacore technology.

Color Kinetics - EP32

Included with this issue is a 32-page PLASA Show Preview covering everything you need to know about the Show



The Track C-Series is an architectural lighting solution using unobtrusive fixture mounts with standard track hardware.

Color Kinetics - EP32

The Recessed Gobo Projector Series is a whole family of simple recessed gobo projectors designed to blend in with the standard downlight.

Enliten - F5

As a full range two-way system the dV-Dosc covers short, medium and long-thru applications with an excellent speech intelligibility.

L'Acoustics - R2

The Paradime intelligent digital dimmer has a powerful computing system to maximise control over six channels.

LightProcessor - E8

... continued on page 8

No-Worries

No-Worries is the ultimate show backup and replay product

There are five operating modes:

Timecode Playback: Simply record the show, enter a start time and connect the MIDI cable. No-Worries then tracks the timecode and plays the show. Whatever the show controller does - pause - rewind, the DMX512 playback will stay Locked. It's just like using a VCR!

Canned Show Control: In many applications, such as museum and exhibition displays, the lighting console is only needed for show programming. The completed show is then recorded by No-Worries and played back by remote trigger or time of day cues.

Automatic Show Backup: Simply record the final rehearsal, up to 12 hours of 2048 channels. At show time, No-Worries tracks the lighting console and takes control in the event of a DMX512 failure.

DMX Merge: No-Worries also operates as a 4 input DMX512 merge with options for either htp or ltp priority.

Data Fix: Finally, No-Worries can be configured to operate as a DMX512 error fixer.

The front panel provides an LCD and keypad user interface. Sophisticated remote control and playback timing options are simply selected from the front panel. An optional VGA monitor output is also available.

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Cinespace is multi-purpose HMI which gives image makers a number of lights in one easy-to-operate system. The lamphead can be converted from use as a Par Daylight to an ultra-wide Daylight.

Lights Camera Action - T36

Purelite Flicker Free magnetic ballasts are suitable for film and studio work and has been specifically designed for HMI applications.

Lights Camera Action - T36

The Variable Friction Arm is an ingenious articulated arm for supporting lighting, camera or microphones. The arm is a development of the earlier Magic Arm.

Lights Camera Action - T36

Junior DMX Console is a small unit that can control 512 dimming channels, and is particularly suited for stage or other applications where the requirement is for a small, simple DMX lighting control unit.

LitePuter - H32

grand MA is a multi-purpose lighting console. With 2048 channels and a 1.2GB disk capacity, in combination with the latest VX-Works operating system technology, it is a feature-packed desk.

MA Lighting - J12

The MAC 300 is a compact moving head washlight. It combines high light output with small lamp size and incorporates a CMY colour mixing system.

Martin Professional - E54/E56

The MX-1 incorporates all the high tech optics and design of the successful MAC series. It features a bright 250W halogen lamp and colour/gobo wheel.

Martin Professional - E54/E56

The TrackPod is a single operator multiple-followspot controller. It is designed to track performers directing intelligent lighting, aided by a laser calibration system, to follow a performer.

Martin Professional - E54/E56

Dancestation Lite is a computer-based DJ packages configured 'out of the box' with all the software the mobile DJ will ever need, whilst Dancestation Pro has facilities needed by DJs who need to mix.

Music Factory Mastermix - C30

Touch Screen Programmable SM Desk uses touch screen programmable control panels for cue, effects and sub systems switching and access to multi-zone paging calls and facilities.

Northern Light - R18

The Motoryoke from Lighting innovation, is a lightweight remote control yoke for the Strand SL, Source Four or other spotlights. The drive has control precision, adjustable speed and exact reproducibility of spotlight position.

Northern Light - R18

CM has launched a motor that can be used irrespective of extreme weather conditions. The submersible Lodestar goes further - although it is an electrical device it can be used underwater.

PCM - F18

After more than a year of development, the new Screenco LED module was launched in June. The new module, for the 15mm SACO LED display, incorporates numerous features.

Screenco - T48

Designed for the larger theatre and studio, the Aurora range of luminaires combine innovative technology and build quality with a highly efficient optical design.

Selecon/ELX - E15

Pacific MSR can be used as a special, wash luminaire or pattern projector. Its active heat management system allows the use of glass gobos, and in combination with an EFX unit, it becomes a powerful scenic projector.

Selecon/ELX - E15

The Pacific 90 Degree can give a controlled beam of light over a short-throw distance. It features two gobo slots, fully rotatable lens tube, active heat management and a range of interchangeable lamps.

Selecon/ELX - E15

The Giotto Spot 1200 is an innovative moving head spot. It features an Osram MSR 1200 discharge lamp and high quality optic system. Precise movement is guaranteed by the unit's stepper motors.

SGM - J37

The Solo copes with the demands of rigging and show playback and can be used in conjunction with the Nomad or Acrobat/Juggler consoles as a remote device.

Stage Technologies - E12

The SL Series of coolbeam spotlights incorporate state-of-the-art technology, with multi-faceted high performance dichroic reflectors and computer-designed aspheric lenses.

Strand Lighting - K8

Par 200W Daylight Parlight Kit - the purpose lens and reflector design for the PAR series has revolutionised light output. Products benefit from a host of features, including easily accessible focus adjustment and quick-release lampholders.

Strand Lighting - K8

The i6AW is the latest addition to the range of point source Dual Concentric installation speakers and can deliver constant performance under adverse conditions.

Tannoy - D30

The Virtuoso control console combines a blend of ground-breaking features with the 'industry standard' interface pioneered in the Artisan. There is a fully integrated 3D graphics display, together with 30 configurable submasters and an option for a designer's remote.

VLPS Europe - F28

The new VL6B spot luminaire is the follow-on to the VL6. Several new features set it apart, including 3:1 zoom and an 11-position fixed gobo wheel.

VLPS Europe - F28

The Tiny-Fogger from Look Solutions is one of the smallest fog machines - tiny enough to fit in the palm of a hand. Microprocessor control and cordless operation make it ideal for a range of uses.

White Light - F4

The DMX Widget is a new DMX tool for the lighting industry. It allows DMX data to be received, parameters to be analysed and DMX data to be transmitted with full control over all parameters.

White Light - F4

CXI Color Fusion is a new colour mixing system offering an extensive palette. It uses just two colour scrolls to create virtually every colour in the spectrum.

Wybron - EP35

The Illusion 120 comprises 120 channels, 400 memories and 108 submasters. It features the powerful Cueline system which gives instant and clear graphical representation of the cue list.

Zero 88 - F2

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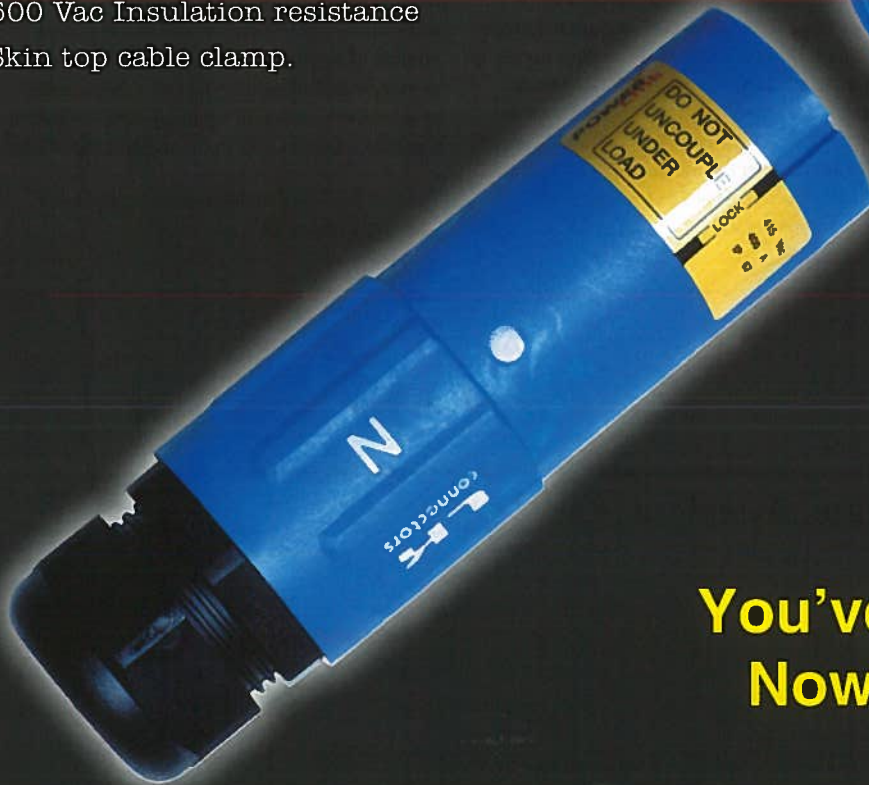
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Major Refurb of Birmingham Rep

The Arts Council is to invest up to £5.5 million this summer to improve audience and artist facilities in the 824-capacity Birmingham Repertory Theatre. The technical consultants are Theatre Project Consultants and Scottish-based Northern Light has been contracted to undertake the full sound and lighting installation.

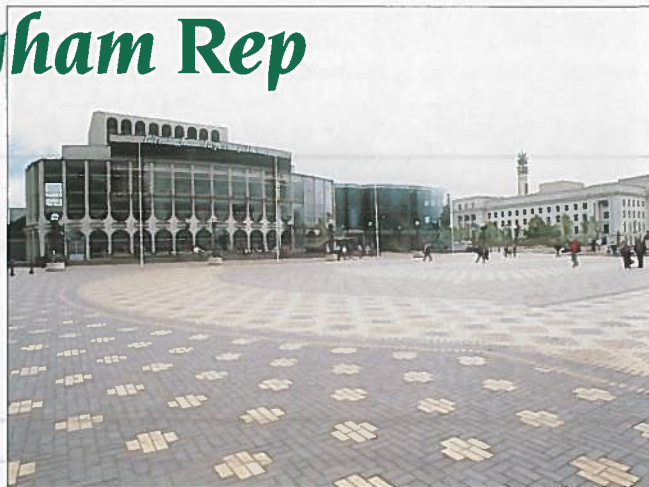
Bill Alexander, the Rep's artistic director, commented: "This will enable us to provide much-needed state-of-the-art facilities to audience and artists alike. Our building is almost 30 years old and standards of comfort and service for the public are not what are now expected of a major national theatre and entertainment centre. All will change with a remodelled auditorium, increased access, more comfortable seating and improved foyer areas."

Northern Light have spec'd a sound system based around a combination of Tannoy and d&b speakers with BSS Soundwebs used to route both control data and digital audio around the installation. The desk is a Midas XL4.

On the lighting side, Northern Light will provide a sophisticated lighting network for LD in residence, Tim Mitchell.

Northern Light's project manager, Mike Smyth, explained: "We are adding a lot of dimmers and lanterns and upgrading the channel capacities on the new Strand 530i and 520i, as well as providing an additional 520i for the smaller, 160-capacity studio theatre, The Door."

The two desks in the main auditorium are networked, allowing the 530i to run the conventional lighting and the 520i the moving lights (Vari-Lite VL7s) with a 510 as back-up. A complex Ethernet/DMX data distribution system, using Strand SN102 and SN103 interface nodes, is being installed to enable the desks to operate from the different plug-in points. The extensive use of the zoom and profile Strand SL options will provide flexibility in the lighting rig. The dimmer rooms, housing a total of 24 LD90 racks, are situated in three locations.



The smaller theatre has its own independent dimmer room and operates as a stand-alone installation. The installation will also feature a number of Northern Light's own products - such as custom-built contactor racks for the non-dim circuits and production lighting boxes - as part of a contract that is worth in the region of £750,000.

The theatre closed in mid-July and will reopen again on October 12.

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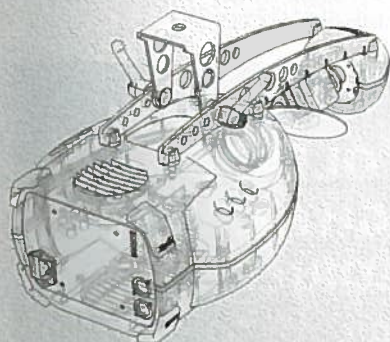
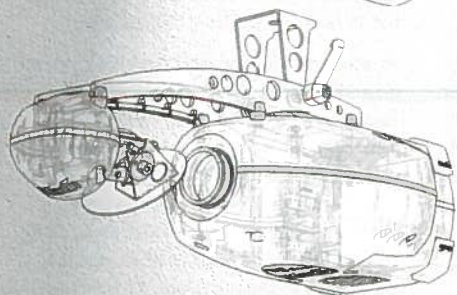
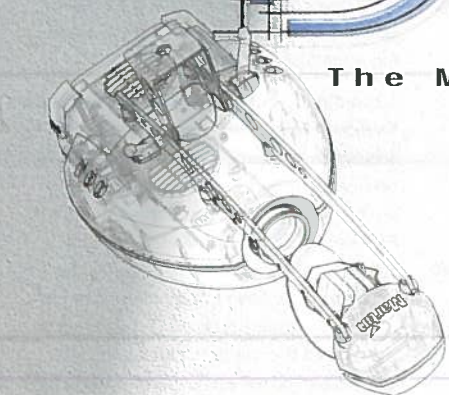
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PLASA Can't Quite Finish Off P&O Events



The outcome of the inaugural Hayden Laboratories Ltd Cricket Cup was decided on 15th July at the Westminster University Ground Chiswick.



Two well-balanced sides took the field, with Paul DeVillie (Lighting Technology) leading the PLASA Association team, who decided to put into bat a P&O team, captained by their not untalented and pugnacious captain Rohan Paulas (POEX). The highlights of this innings included a top score of 40 by Jonathan Goold who was well supported by Marcus Bernie (21) and the straight hitting of



Top, Paul DeVillie presents the cup to Rohan Paulas, captain of the P&O team.
The two teams prepare to do battle - PLASA (centre) and P&O (bottom).

Mark Saunders (28). An entertaining innings by Darryl Bowman and Simon Jones of Harvard PR was steered managerially by the 'Solid Straight Bat' of James Brooks-Ward (with a score of 13 not out - a figure not unrelated to his IQ).

PLASA's bowling analysis was dominated by its surprise lethal weapon... Jan Shepherd of PLASA - who finished with figures of three for six in two overs - and the overseas player Rob Maier from ETC who clearly had played this game before. P&O were finally bowled out for the very respectable figure of 165.

Matthew Tonks (Glantre) and Simon Parks (Ideas Unlimited) started the PLASA reply. Although Matthew may not be pressing for his England call-up, he did crash two fours before being clean bowled by Bernie for 8. Bernie also picked up the enterprising Todd Stoneham (Le Maitre) for 17. The score board was rattling along at this time with Parks taking full advantage of the bowling: so much so, that he retired on a very impressive 53, a fantastic contribution. PLASA were well on their way when Pimms

were taken at the halfway mark (civilised sport, this cricket), needing only 75 from the remaining 13 overs, a cinch...

A combination of tight bowling from messrs Saunders, Jones and Paulas, who was accurate and clearly the pick of the P&O bowlers, followed, picking up the prize scalp of Hayden's Simon Curtis (21). James Brooks-Ward's superannuated left-arm around requires special mention, as this bowling action hasn't been seen since the days of the great Grace. P&O continued to close down the run-rate, making the job difficult for the tail-enders, who couldn't get the 16 runs needed from the last over.

This left only one thing for the losing side to do and this they did with great aplomb, courtesy of P&O, who were fine hosts with a very generous bar and supper. Awards were presented to all, including the umpires and specialist scorers, Nicky Rowland (P&O) and Simon Hemsley (Mondiale). Next year, PLASA will be back to challenge the champions in a rematch at Littlewick Green Cricket Club, Berkshire, for the Hayden Laboratories Trophy.

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STAND R80



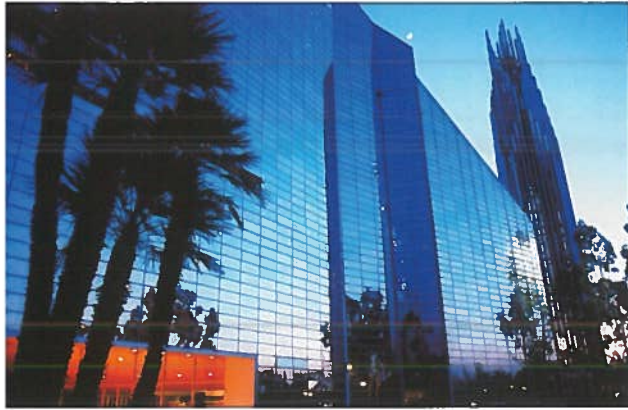
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California's Crystal Cathedral



Crystal Cathedral is a spectacular 12-storey architectural wonder located in Southern California's Orange County, and is an out-of-the-ordinary setting used for church services and weddings.

Situated in the centre of a beautiful 21-acre campus, Crystal Cathedral was built by the Reformed Church of America who seem to have taken the first chapter of Genesis to heart in their

design. Crystal Cathedral is an out-of-this-world structure of light, glass and metal. It resembles a four-pointed, crystal star and has become a local landmark that has won critical acclaim worldwide.

The Cathedral was designed by architect Philip Johnson and is made up of 12,000 panes of glass, each square painstakingly engraved with the name of a contributor. The structure is built around a steel truss frame with both walls and ceiling visually open to the surroundings.

The challenge of lighting the Cathedral fell to Martin Professional, who provided a rig of 18 MAC 1200s and 18 MAC 600s, all controlled from a Case Pro II Controller.

The management is currently considering adding more Martin fixtures, namely Martin exterior illumination for a stainless steel sculpted spire with cross that stands 80-90 feet tall in the gardens outside.

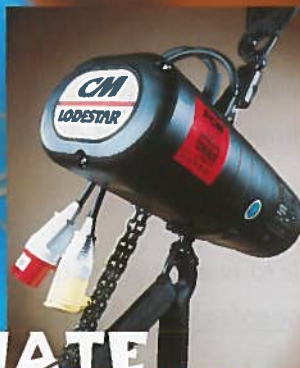
Multiform Boost

The Multiform Group, who have successfully manufactured lighting controllers for the home and export markets over the past 28 years, have announced a major restructuring of the company.

Managing director Iain Price-Smith has confirmed that he has secured significant new investment, and that this capitalisation will enable him to fund further growth into the distribution market, which has provided an increasingly successful adjunct to the company's core business over the past two years. "Since working with both Griven and Sagitter - along with a new agreement we have signed with Meteor Lighting in the States - there has been considerable interest in Multiform's activities," declared Price-Smith. "Therefore it seems the appropriate time to refinance the company to allow us to fulfil both our suppliers' and customers' expectations into the new millennium."

The new cash injection has involved Multiform taking on a UK and export sales manager, and the appointment of a production manager is imminent. The first phase of change will manifest itself at this year's PLASA Show.

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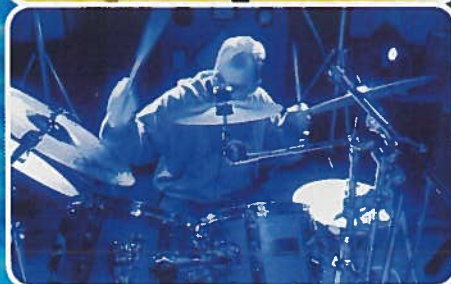
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Federal Court Grants Vari-Lite Injunction Against Martin Professional

In our March issue we reported that Vari-Lite had initiated a patent infringement against Martin Professional for distribution of part of their product range in the US, principally the family of MAC fixtures. Following the writ, the Federal Court of Shermann, Texas, met on the 27th July and has granted Vari-Lite a preliminary injunction against Martin Gruppen A/S and Martin Professional A/S.

The suit, which covers the USA only (the injunction does not affect Martin Professional outside of the US), relates to a patent which affects the manufacture and sale (or lease) of the Martin MAC 600, MAC 500, MAC 300 and the Case Series Controller (in conjunction with any of those three products). All other Martin products in the US, as well as the entire range of Martin Products outside the US, are unaffected. Users in the States who have already purchased Martin kit will not be affected, since the injunction is not retrospective and will only affect Martin sales into the US from the date of the injunction.

Vari-Lite and Martin are both major players in the American market and Vari-Lite has been rigorous in pursuing the action because it believes it was the first to market a commercially viable automated lighting system. Rusty Brutsché, President and CEO of Vari-Lite International, said: "It is imperative that we protect the investment we make in research and development to enable us to fund our development of new technologies. The defence of our intellectual property rights is an important element of this process."

Martin, meanwhile, remain committed to the US market and have recently released a host of new products including the MAC 250 and 250+, the MX Series of scanners, CX Series of colour changers, as well as new exterior luminaires. They also intend to defend the action and the ruling has been appealed to the next level - Federal Circuit Court in Washington DC - where it is expected to be tried within the next six to eight weeks.

Light at the End of the Tunnel

ESP has recently completed an unusual project by anyone's standards - the construction of an entire theatre auditorium and conference room, complete with reception areas, for Transeuro WorldWide Movers. The brief was further complicated by the fact that Transeuro wanted to host the event in one of their new firesafe automated container facilities.

The project required over 60kW of sound, 220kW lighting (including 30 Clay Paky Superscans/Zooms), 1000ft of truss and over 60,000sq.ft of drapes! Guests entered through a 10m long tunnel moving into a reception room measuring 100ft x 50ft. Both these rooms were built from 'old style' wooden containers, stacked four-high round the reception room with a large circular truss rig in the centre.

There were several key scenic elements to the main show which began with a run of videos, projected onto a video screen stretching across the whole of the back of the stage, followed by a laser sequence, with EV bass bins providing the audio effects. Production of the soundtrack was handled at ESP's in-house studio, with video footage choreographed and assembled by Laser Grafix. One of the highlights was the ESP 'flying world' (see it at PLASA 99) which appeared from behind the seating, flying over the heads of the audience. The internally-lit 'world' is a giant 14ft diameter inflatable globe, with hidden motors which allow it to be flown and spun by remote control.

As the show was drawing to a close, rocket engines fired, pyros went off all over the stage and drapes fell from the walls of the auditorium, revealing the new logo for Transeuro. Then, the entire lighting rig and roof slowly started lifting away from the walls, revealing the full extent of the warehouse, lit up by punchlights and floods.

Management Changes at Harman UK

The Harman companies in the UK are restructuring. Soundcraft, Spirit, BSS, C Audio Amek, DAR and Allen & Heath will be formed into a new group with a central management team headed by Philip Hart, president of Harman Pro Group International. David Karlin, who is currently managing director of BSS and C Audio, will take on additional responsibilities as deputy managing director of the Group. Alison Brett, managing director of Soundcraft for the last three years and Group managing director with responsibility for Soundcraft, Amek and Allen and Heath since June 1997, has decided to take on a new challenge. After 12 years in the pro audio industry, she is going back to university to study Law.



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News Round-Up



Illuminating the Pyramids

When an American computer company decided to hold an awards ceremony in front of the Pyramids just outside Cairo in Egypt, they turned to Blitz Vision to produce the event. With very little time to pull the whole show together, Blitz director Andy Watterston called on the expertise of White Light.

Charged with providing the overall lighting package for the event, White Light was responsible for creating the lighting design, supplying the lighting equipment and providing a crew to install and then remove the lighting rig. With the additional challenge of a very short lead time, Steve Bartlett, a recent addition to the team at White Light, called upon the talents of lighting designer Tad Trylski and chief production electrician Martin Chisnall to pull the show together.

The White Light team installed a rig that included 300 lanterns and moving lights, controlled via a Wholehog II driving Avo dimmers. The whole job was packed into over 50 flightcases and delivered direct from White Light's base in Fulham to the



Above, the pyramids at night, left the flight case train cleaned and ready to go and below the White Light crew



cargo plane at Stansted Airport. And as the photos accompanying this piece show, everything looked right on the night.

Coincidentally, PLASA 99 will see the launch of White Light's latest division, Colourhouse, specialists in supplying lighting equipment, crew and design to projects such as Cairo.

Clubbers Face Increased Risk of Hearing Damage

62% of regular clubbers have experienced hearing problems, but only 19% of them are worried about their hearing according to new findings from the Royal National Institute for Deaf People (RNID). Exposure to dangerous levels of 'social noise' has tripled since the early eighties, and coincides with a threefold increase in reported tinnitus among young people who go clubbing regularly. RNID has launched a Safe Sound campaign to alert young people to the dangers of prolonged exposure to loud music. In clubs, noise levels average between 95-110dB - equivalent to a pneumatic drill. Although nightclubs are found to be the most damaging leisure environment to hearing, live concerts and personal stereos also play their part. The survey also found that many DJs are now resorting to earplugs as the only way to protect their own hearing.

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PALA Moves to New Venue on Upbeat Note

In early July, Pro Audio & Light Asia (PALA) staged its 11th exhibition on a more upbeat note fuelled by expectations of an economic recovery. The show, which was held for the first time at the new Singapore Convention & Exhibition Centre (SICEC), one of the largest purpose-built convention and exhibition facilities in South-East Asia, laid to rest fears that the region may be slowing down and confirmed that exhibitors still feel positive about the potential for medium and long-term business in the region. The consensus seems to be that those companies who stay active in the region will reap the benefits when the economy recovers.



exhibition centre. This is the world's largest fountain standing 14 metres tall and featuring a four-point laser projection system, the world's first 360 degree programmable water screen, sound, moving lights and a custom-designed operator-free control system.

There were over 300 companies exhibiting at PALA 99, showcasing the latest innovations and technologies in professional audio, lighting, broadcast and music. The event, which ran concurrently with Music Asia, also incorporated a specialist section dedicated to broadcast technology and visual communications and attracted over 7,000 trade visitors from more than 40 countries worldwide.

A comprehensive programme of seminars, covering a wide range of issues ran alongside the exhibition: the Singapore section of the Audio Engineering Society (AES) organised a key part of the programme which addressed the latest developments and future trends in loudspeaker technology. Other seminars ranged from architectural lighting to a presentation by Oracle Laser Production offering an overview of the sound, light and laser installation for the Fountain of Wealth which stands outside the

A new feature for this year was the Technology Showcase - highlighting a host of new developments in audio, video, graphics and music. As ever, there were many new products launched at the show: American DJ (Asia) Ltd, a new exhibitor at PALA, launched their 'O' mixer; Brähler ICS launched a new compact infra-red transmitter and a new digital distribution system; RCF launched their new Vision Contractor Series seen for the first time at PALA, whilst Audio-Visual Land used 24-bit audio DTS-encoded music videos and blockbuster movies to daily showcase their new products - Yamaha's new digital recorder, newly developed speakers from Apogee and Celestion, as well as Apogee's new Amp-Net PC Software working in tandem with their processor-based speakers and amplifiers. Many of the new products will be on show again at PLASA in September where they will be reviewed in more detail.

Next year PALA Philippines will run in Malaysia and the following year, 2001, PALA will return to Singapore.

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Brit School Upgrades

The Brit School, based in Croydon, has recently upgraded its pro audio equipment.

The Brit Trust granted the school £200,000 to carry out a substantial upgrade. Marquee supplied the guts of the equipment - predominantly all the sound equipment for the main performance area, and a portable system that can be wheeled between another two venues. This revolved around a combination of Tannoy T300 SuperDual mid-top/B400 bass stacks as well as six Tannoy T12 Dual Concentric loudspeakers which are used as stage monitors and as multi-purpose boxes, sometimes alternating with the further T12s found in The Tent - a smaller, blacked out performance space. Marquee Audio had flying



frames purpose-built to mount the enclosures.

The School's front-of-house system is EQ'd from a BSS FCS-966 and powered by a combination of QSC Powerlight PL2.0 and PL4.0 amps. The Tent's Tannoys are

fed from a portable system incorporating a Spirit Powerstation 1200.

Huge amounts of structural changes have accompanied the refit, including the removal of two walkways and the installation of a motorised flying system, along with hemp lines and heavy duty winches. Two 24-track recording studios - respectively used for track laying and mixing/MIDI programming - have also been brought up to spec and now include Tannoy Reveal and System 800 monitors.

VLPS Make Life Easier - Vari-Lite Production Services London

has created a new Design Studio at its Greenford office. Clients can now benefit from the upgraded WYSIWYG studio, which includes sound and video systems, and is large enough to support the majority of DMX lighting desks available at VLPS. New drawing software including AutoCAD 4, WYSICAD and Vector Works (MiniCAD) allows the user to visualise their production with greater ease.

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Rosco Launches Architectural Series

Rosco has launched its Permacolor Architectural Series. The more subtle range of colours has been designed with the assistance of architectural lighting designers around the world and is perfect for both interior and exterior projects. The series can be used in most architectural luminaires and a Test Kit is available.

Also new from Rosco are two new lighter fog fluids - Rosco Light and Rosco Clear. The company has also launched 20 new designs in the Signature Series range of gobos, and in the moving effects range, the Real Time Clock now has a choice of seven new clock faces.

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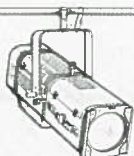
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Numark's New HQ

Numark UK has recently moved into new European Headquarters in Aldershot, Hampshire.

Managing director Damon Crisp (pictured) told L&S: "At present we are supplying Numark products to the UK and the rest of Europe. We needed a facility to enable us to keep up with rapid growth in sales of Numark products." The 11,400sq.ft building will house warehousing and technical support, and, in addition, Numark also plan to run dealer product training sessions.



A-Z of Lighting Terms

The A-Z of Lighting Terms will be of use to all those in the industry, particularly students, who have heard expressions or terms and wondered what they meant.



Although most technical books have glossaries, The A-Z of Lighting Terms has expanded on many of these terms using illustrations to clarify some of the more complicated principles, formulae and laws. There is much common ground between American and European terms and practices and this new book aims to give a transatlantic flavour.

Training in the lighting industry is very much by experience and hopefully this new publication will be a good basis for the theoretical and practical side of lighting. The author, Brian Fitt, has had a long career in the entertainment industry, spending 33 years at the BBC - initially in television operations where he worked in vision and lighting, subsequently spending the final 20 years in the

Studio Planning and Installation department as a lighting specialist. He was responsible for trouble-shooting many of the problems associated with lighting systems when colour television was introduced by the BBC. Fitt instigated many of the technical specifications required for lighting consoles, dimmers and luminaires, together with other innovations for lighting systems.

After leaving the BBC he joined Lee Colortran and since 1990, has been an independent lighting designer and technical consultant, covering the 1992 Barcelona Olympics, Goodwill Games (St Petersburg 1994) and various studio installations throughout the world.

Fitt is an established author, having written, in association with Joe Thornley, 'Lighting Technology'. Recently he acted as European editor for 'The Gaffers' Handbook' by Harry Box.

The A-Z of Lighting Terms is available as part of the PLASA Technical Book Service. For a full list of titles available see feature this issue.

Firmware Omnidrive - BSS Audio's FDS-355 Omnidrive Compact has had a firmware upgrade to version 1.14. As well as enabling full integration with the new Soundbench V3 control front-end, V1.14 provides enhanced sonic performance. The new software is available upon request from BSS (+44 1707 660667) or their local distributor, and can also be downloaded from the BSS website at www.bss.co.uk/software/software.htm

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RCF/Mackie Open Days



Left, the RCF/Mackie UK team: Phil Pell, Linton Smeeton, Phil Price, Tony Williams, Martin Warr, James Blackwell, John 'Bruno' Wayte, Giacomo Previ and Andy Austin-Brown.

Inset, Paul Trew (Sound Productions), Lance Bromhead (Middlesex Sound & Lighting), Dave Orritt (Orritt Electrical), Mark Brown (Marquee Audio) and Neil Baxter (Sound Power) with Phil Price.



During the event, Mackie demonstrated its new range of live sound products, including speakers and powered mixers, whilst RCF showed its new range of installation

speakers - the Vision Series. There was also a preview of the new Fusion Range of speakers set for launch in the UK later in the year.

RCF/Mackie UK recently ran a series of open days to launch its new facility at Wickford. The Wickford HQ has undergone a complete rebuild over the past six months and now boasts a conference room, demonstration areas for both RCF and Mackie products, and a new sound demonstration room.

RCF UK's Phil Price commented: "We now have the facilities to run product training seminars for dealers and we can also demonstrate our sound systems in a dedicated sound environment."

Royal Exchange Lighting Wins Award

The new lighting scheme for the Royal Exchange Theatre in Manchester (see L&S January 99), designed by Pelk Lighting Consultants with Max Fordham and Partners, has won Lighting Project of the year in the Building Services Awards.

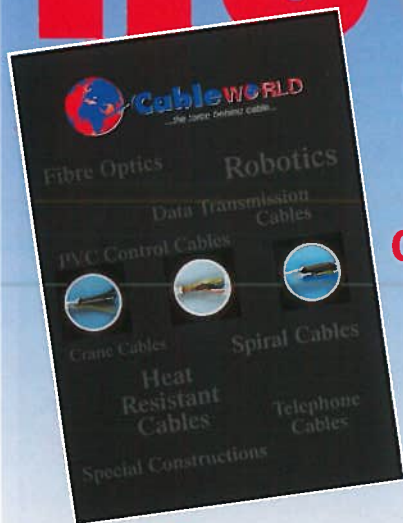
As we reported at the time, the Exchange is illuminated by a radically new lighting technology - microwave sulphur plasma - developed by scientists working on the NASA space programme. Remarkably, the 2,400sq.m Exchange Hall is lit by only eight 1.3kW lamps; the light from the suspended plasma lamps is reflected via a large number of 400mm diameter mirrors to create pools of light on the floor.

Student Union Appeals for Help - South Bank Students

Union, based in London, are looking for a company to handle the redesign of their club area within the university. Unhappy with the current design, the SBSU is looking for a company experienced in the design and installation of this type of facility. Any company which feels it could help should contact Jez Clover at SBSU on +44 171 815 6060.

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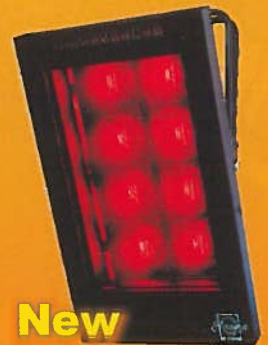
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People News

Hard on the heels of the recent merger of **Flying Pig Systems** and **High End Systems** comes the appointment of **David Catterall** (pictured right) as international sales and marketing manager for Flying Pig's products. Catterall, based in London's Flying Pig office, assumes direct responsibility for the European and Asian markets. He joins the High End team with extensive experience in control systems gained at **Zero 88** and **ETC Europe**.



After seven years, **Steve Schiffman** has returned to New York-based mixing company **Numark Industries**. As vice-president of sales, Schiffman will take up his brief of travelling the world for Numark. Meanwhile, **Vestax America**, a subsidiary of Numark Industries, has appointed **John Terry** as vice-president to oversee the sales and marketing of Vestax products within the US. Terry joins the company from **Pro-Mix USA**.

RCF UK has promoted current employee **Andy Austin-Brown** to the newly-created position of technical projects manager. The role covers both professional sound and commercial audio and will see him working closely with RCF's clients on specific projects.

After 35 years at the helm, **John Rupp**, founder of **HW International**, has retired from his position as managing director. Although officially retired, Rupp will still be involved in the running of **HW International** in a non-executive role. **Dennis Harburn**, with 27 years experience in the sales and marketing of **Shure** products, takes over as managing director.

Production Resource Group (PRG) has promoted **Gary Hardesty** to vice-president of worldwide events and technologies for the PRG Audio Group. Prior to this, Hardesty served as senior director of west coast operations and technology for PRG company **ProMix**. **John Roth** has joined **Light & Sound Design (LSD)**, also a PRG company, as the director of business development. In this new role, Roth will continue to serve the industry, seeking new business opportunities and introducing new products and systems solutions.

Logic Systems Pro Audio has appointed **Dean Davoile** as sales manager. Previously at **Fuzion**, Dean will be responsible for defining and implementing the company's future sales plan.

A surprise party celebrating lighting designer **Mick Hughes'** sixtieth year took place at the **Royal National Theatre** recently. During the evening, Hughes was presented with a fellowship of the **Association of Lighting Designers** by veteran lighting designer **Michael Northen**. The event, sponsored by **White Light**, attracted over 200 guests, amongst them **Michael Gambon**, **Mark Henderson**, **John Simpson** and **Simon Gray**.

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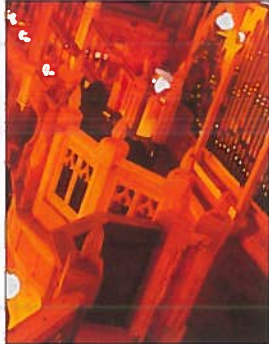
Carlton George Opens

Glasgow's newest luxury hotel, The Carlton George, which incorporates a Waxy O'Connor's Irish bar, has just opened.

The hotel, which has been under construction since 1997, features a 10,000sq.ft Waxy O'Connor's which covers three levels of the building. The interior has

been created by designer Frank Innes and CP Sound was the company asked to design and install audio for Waxy's, the Carlton George's reception and its public meeting rooms.

The sound systems for both Waxy's and the hotel were designed by CP Sound's Colin Pattenden. One of Pattenden's primary concerns was to ensure sound from Waxy's didn't leak up to the hotel above, as Scottish laws relating to being kept awake or disturbed by parties, sound systems and errant noise are extremely severe! Pattenden thus decided to locate the loudest and most obtrusive part of the system, the bass speakers, in the lowest basement area of the pub



for containment. The closer the sound equipment in Waxy's gets to the hotel, the smaller the speakers are! CP chose to use JBL speakers throughout and a dozen Control 28s join the six SB2 bass units with a further 24 Control 25s situated throughout the venue.

Cloud Z4 and Z8 zoners are used for control and a separate zone was set aside to pipe music into the

toilets, fitted out with high quality Paso ceiling speakers. CP Sound also installed and aligned a Seléco video projector and large screen in Waxy's, plus a satellite receiver, terrestrial television aerial and distribution feeds for the television sets shortly to be introduced.

Paso speakers were also used in the Hotel system - 29 of them, driven by a Paso 100V line amplifier. The speakers are distributed throughout the seventh floor and additional speakers are in the lifts and the hotel reception. All speakers across the six zones are individually volume controlled and fed by a Technics CD player.

West End Theatres For Sale

Eight London West End theatres - the Albery, Comedy, Criterion, Donmar Warehouse, Phoenix, Piccadilly, Whitehall and Wyndham's - along with three central London cinemas are to be sold by the Associated Capital Theatres Group.

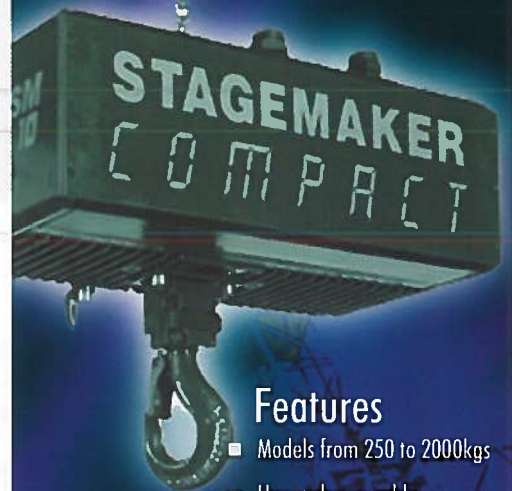
The move follows Quintain Estates & Development's takeover of Chesterfield Properties, parent company of ACTG, which owns the eight theatres. The package represents a sizeable slice of the West End cake, with the total seating of the eight contributing 13% of the total seating capacity of the West End. The price tag? A cool £20million. L&S understands that there are already a handful of serious bidders lined up, including the Ambassador Theatre Group (who own the Ambassadors and Duke of York's theatres). The sale might also prove an opportunity for producer Cameron Mackintosh to add to his portfolio - he has interests in the Prince of Wales, Prince Edward and Strand theatres and recently acquired the Queen's and Gielgud theatres.

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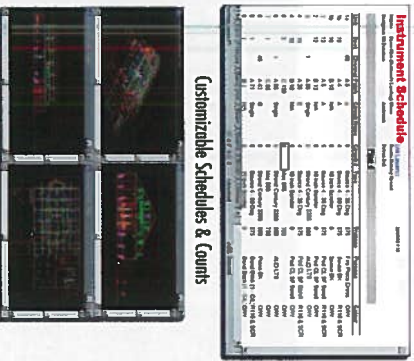


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Turkish company SF SES VE Isik Sistemleri has recently completed what must count as one of its more unusual projects - the installation of the world's first discotheque aboard a Catamaran.

Marine Club



The owners of the boat, Mehmet Birgen and Mehmet Helva, both prominent figures in the Turkish club scene, spent \$4million equipping the Catamaran - M&M Marine Club - which is berthed adjacent to their M&M Dancing club in Bodrum.

The lighting rig is principally Clay Paky Stage Zooms and Scans, with Thomas Pars and Pulsar strobes controlled by an Avolites Azure desk. The sound rig is dominated by EAW kit; EAW KF750s and BH 822s are fed through Crown MA amplifiers and Klark Teknik processors with a Cloud CX-233 mixer at the helm.

On the launch night in early July, 2,500 people boarded the Catamaran for a 2am sailing before returning to shore four hours later.

Students Put DLCs to Test

Students at Imperial College were recently given the opportunity to use DHA Digital Light Curtains on the IC Operatic Society's production of *Guys and Dolls*. Complementing a house rig of over 70 lanterns, including 12 Fresnels with colour scrollers, were six DLCs (loaned for free for the duration of the production by DHA) arranged in two rows. Student lighting designers Ben Pickersgill and Paul Mitcheson opted for the DLCs to complement the scrollers they had modified to fit 1kW Fresnels, having found previously that using scrollers on Par 64s did not give them the even colour wash they were looking for. By adding the DLCs, they were able to create a wide range of looks from the extended colour palette now available to them. The rig was controlled by an Avolites Pearl 2000.

Five to Try

If you're surfing the net you may like to check out the following web sites

5

1. If you're in London for the PLASA Show in September, the Ticketmaster site offers tickets for a range of events from football matches to concerts.

www.ticketmaster.co.uk

2. A global network of city guides providing exhaustive information on cities worldwide.

www.wcities.com

3. Find out everything you need to know about the implications of Year 2000.

www.year2000.com

4. LGH Rigging has recently launched a website covering technical data on all its products.

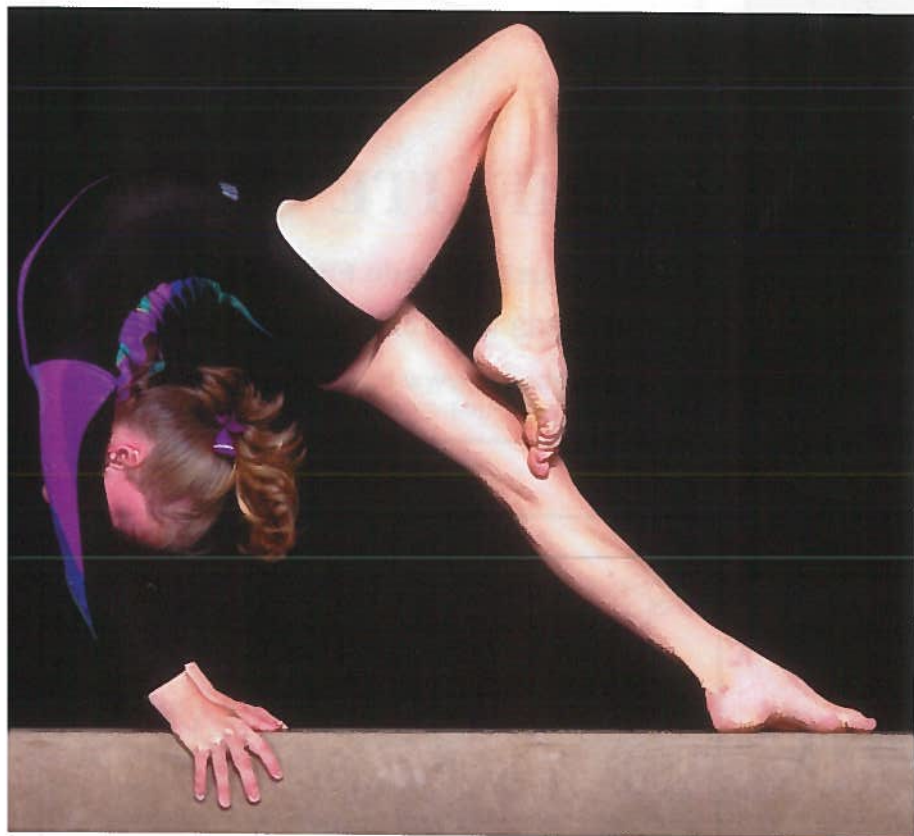
www.lghrs.co.uk

5. Read about other people's theatrical calamities . . .

www.geocities.com/Broadway/8244/

Make sure you also visit the PLASA website where there's a host of information.

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Glantre Conventions

Glantre Engineering has been awarded a £715,000 contract to supply and install audio-visual, lighting and associated mechanical systems for a new luxury Convention Centre at The Celtic Manor Resort, Newport, South Wales.

The audio-visual system, which is being installed by Glantre under sub-contract to Z&W Management, has been designed by AV consultant TheatreTech to be as flexible as possible. Radio microphones and portable AV trollies with touch-screen equipment control will allow events of all types to be set up in the Conference Hall.

The lighting, also designed by TheatreTech, is a combination of architectural and stage lighting and includes working lights, downlights and refocusable table spotlights. Glantre is also supplying and fitting the Conference Centre with a flexible stage lighting rig which can be flown from the point hoists in any configuration in the hall and consists of trussing and 200 fixtures.

The Ballroom mechanical systems include 24 chandelier hoists together with chain hoists, trussing and customised controls. The technical



David Neale of DNA is pictured at Sandakan by the South China Sea after completing the Trans Borneo Cycle Challenge. He cycled 330km over six days through the rain forests of Borneo to raise £3,000 for the charity Sense.

spec has been drawn from a wide number of manufacturers including Allen & Heath, AMX, Andolite, AVW controls, Clay Paky, Community, Crown, ElectroVoice, Euroscene, James Thomas, Maxon, Mustang, Northern Light, PCM, Peavey, Sennheiser, Strand Lighting and Techpro.

Under another contract, Glantre is supplying and installing the stage lighting, sound, communications and video systems for Norden Farm Centre for the Arts in Maidenhead. As a sub-contractor to Ballast Wiltshier, Glantre is working to designs by a team which includes Architecture for the Arts, Theatre Projects Consultants and Acoustic Dimensions.

Human Traffic

Cardiff-based DJ Hardware were the company approached to supply all the DJ equipment for a party scene in the cult movie *Human Traffic*.

The scene, which is pivotal to the film, depicts a packed and pumping house party, complete with a happy, handsome DJ. Supplying the sound were a pair of Cerwin Vega! T250s, alongside a pair of Cerwin Vega! T36 subs, powered through two KAM amps.



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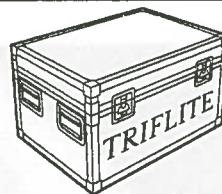
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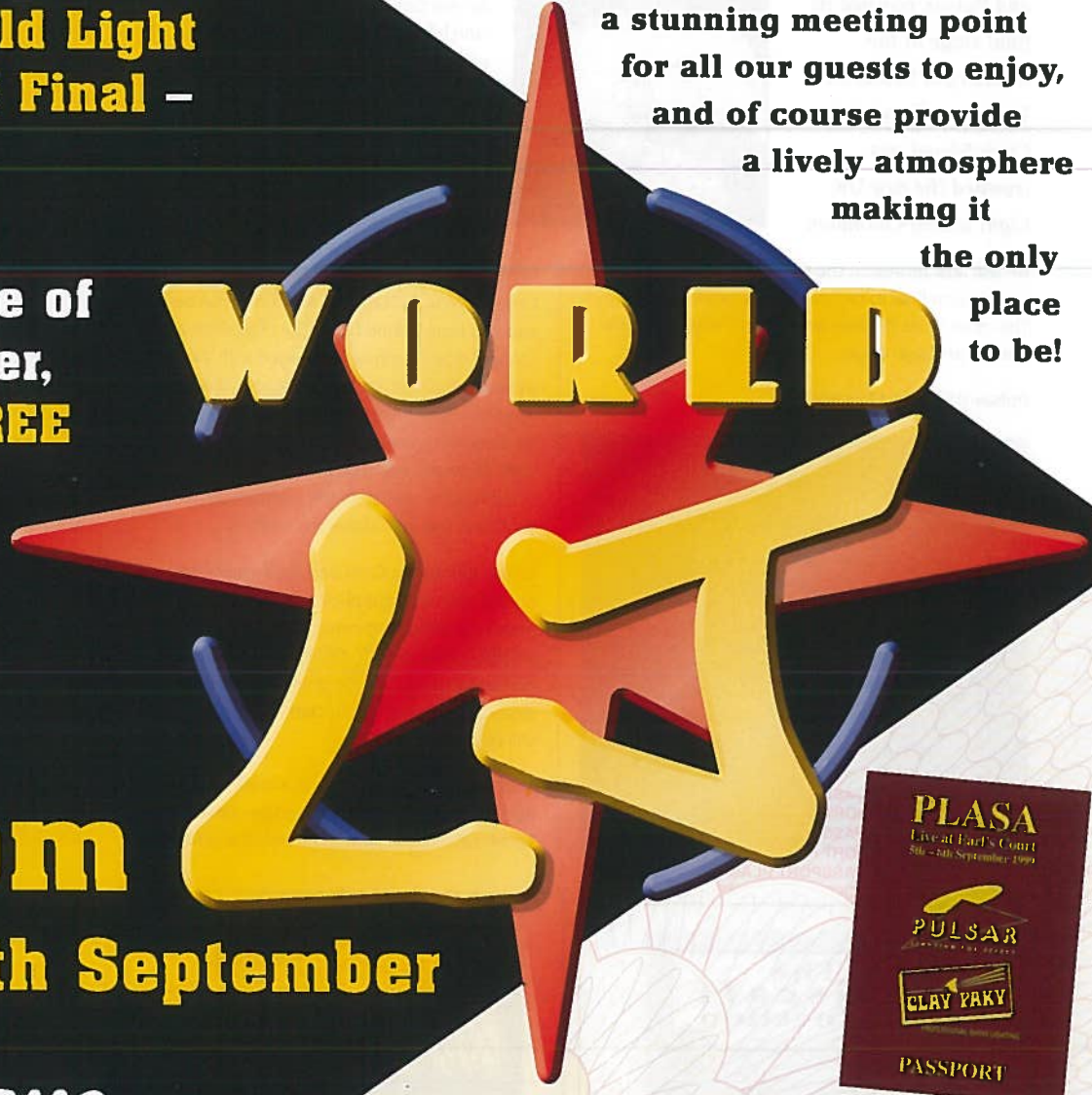
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1999 Light Jockey Champion

The 1999 DI UK Light Jockey contest, sponsored by Clay Paky and Pulsar, reached its final stage at the Ministry of Sound on Tuesday 6th July, when Chris Shead was crowned the new UK Light Jockey Champion.



He will now represent the UK at the World Light Jockey semi-final to be held in Italy on 27th August. The other three finalists were Stuart Wardale, Chris Penney and Rob Calvert.

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Stageline, the award-winning manufacturer of one of the world's leading mobile stage products, has launched a new UK sales, hire and technical support operation.

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Northern Light are close to completing the sound production, lighting, stage management and ancillaries for the second phase of the £22 million Hanley Cultural Quarter in Stoke-on-Trent.

Following on from the rebuilding of the Victoria Hall, situated 500 metres away, the larger, 1600-capacity Regent Theatre - a former Grade II-listed art deco cinema which first opened in 1929 - is now scheduled for completion in September.

Cultural Quarter Development

According to Northern Light's Eddy O'Hare, the audio specification in the Regent broadly mirrors the equipment used in the 19th Century Victoria Hall, and much of it has been sourced from Sound Dept. The FOH desk is a 32-channel Crest Century TC, loaded with 24 inputs, while seven Crest Audio Vs I100 amplifiers are used to power much of the supplementary loudspeaker system. This includes 24 delayed EAW KF60 two-way loudspeakers, split into three sets of eight - one set in the rear balcony under the stalls and two sets above the balcony.

In addition to the Crest and EAW equipment, Sound Dept also supplied a pair of the high power-handling Community XLT 47s for on-stage sidefills, and four XLT 48s will also be used as conventional stage floor monitors. Around the sides of the stage four further JF60 loudspeakers will be used for infilling.

Northern Light's Mike Smyth worked on the lighting specification produced by consultants Technical Planning International. The scheme

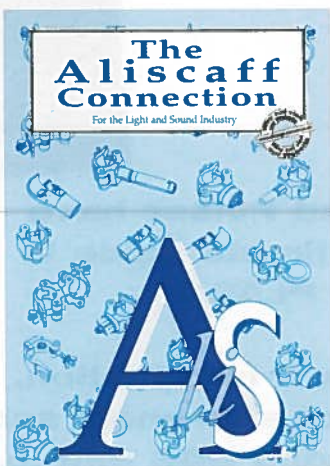
borrowed heavily from the Strand Lighting catalogue, with the show control under the command of a stand-alone, 400-channel Strand 550i console, with GeniusPro, Networker, Tracker and Communique software.

Although lanterns hadn't been written into the original spec, once Strand launched their range of SL luminaires, Northern Light were happy to add them to the schedule. The 24 SL10 profile spots, secured to the FOH balcony position, were a worthy replacement for the Strand 2K Altos that Smyth would formerly have favoured.

Elsewhere, he has used 36 SL15/32 zooms and a mixture of SL fixed-beam profiles and variable beam spots which will offer more plotting flexibility for visiting production LDs. These line up alongside 20 Strand Cantata Fresnel spots, producing a powerful soft-edged beam, and eight Strand Orion groundrows, used to provide even cyc coverage.

For Northern Light, who were contracted to builders Norwest Holst, the overall contract to fit both leisure venues was worth in the region of £750,000. The Cultural Quarter redevelopment has been funded by National Lottery cash via the Arts Council, the European Regional Development Fund, Stoke-on-Trent City Council and private sponsors. The council have entered into a partnership with Ambassador Theatre Group, who will be managing the venues.

The Regent Theatre, with its extravagant dome and art deco mouldings, will become a leading touring venue for a wide range of productions.



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Running parallel to the exhibition, was a programme of seminars covering such topics as On-line Distribution, DVD and the protection of recorded assets. The panellists were drawn from across the industry and such was the interest in the issues, that sessions



were over-subscribed. The APRS is currently producing transcripts for distribution.

APRS chief executive Mark Broad was delighted with the response to the show: "We have had very positive reports from exhibitors and visitors alike. Seminars sold out and everyone was busy on the show floor. The buzz on the first of the two days (Friday 25th June) was exactly the feel we wanted and by mid-day people were congratulating our

team. At the Exhibitor's Party on the first night, everyone was pleased to have seen plenty of 'high quality' visitors, confirming the value of a commercial forum and networking opportunity for recording people in the UK."

It seems likely that next year's show will be significantly bigger, and several companies not at this year's event have indicated their interest in participating, on the strength of what they've seen this time round. The venue, which proved popular with exhibitors and visitors this year, will enable the show to grow significantly. As a result, Recording Technology 2000 is being planned for the main floor of the Business Design Centre on Thursday 22 and Friday 23 June, 2000.

Exhibitors' chairman, Phil Dudderidge, sums up: "Audio post, mixing for surround and hard-disc recording all proved to be areas of considerable interest to visitors, as reflected by the seminar attendance and a very active show floor.

We are delighted to be able to say that the APRS Recording Technology Show successfully addresses, and reflects, today's dynamic professional audio marketplace."

The APRS has declared its newly launched Recording Technology 99 exhibition a success. Over 50 companies participated in the show which took place at the Business Design Centre in late June, attracting industry pro-fessionals from across the UK and overseas.

Technology remained the key focus and there were several new products on show from major manufacturers, notably the D24 24-bit digital multi-track recorder from Yamaha and the Soundstation

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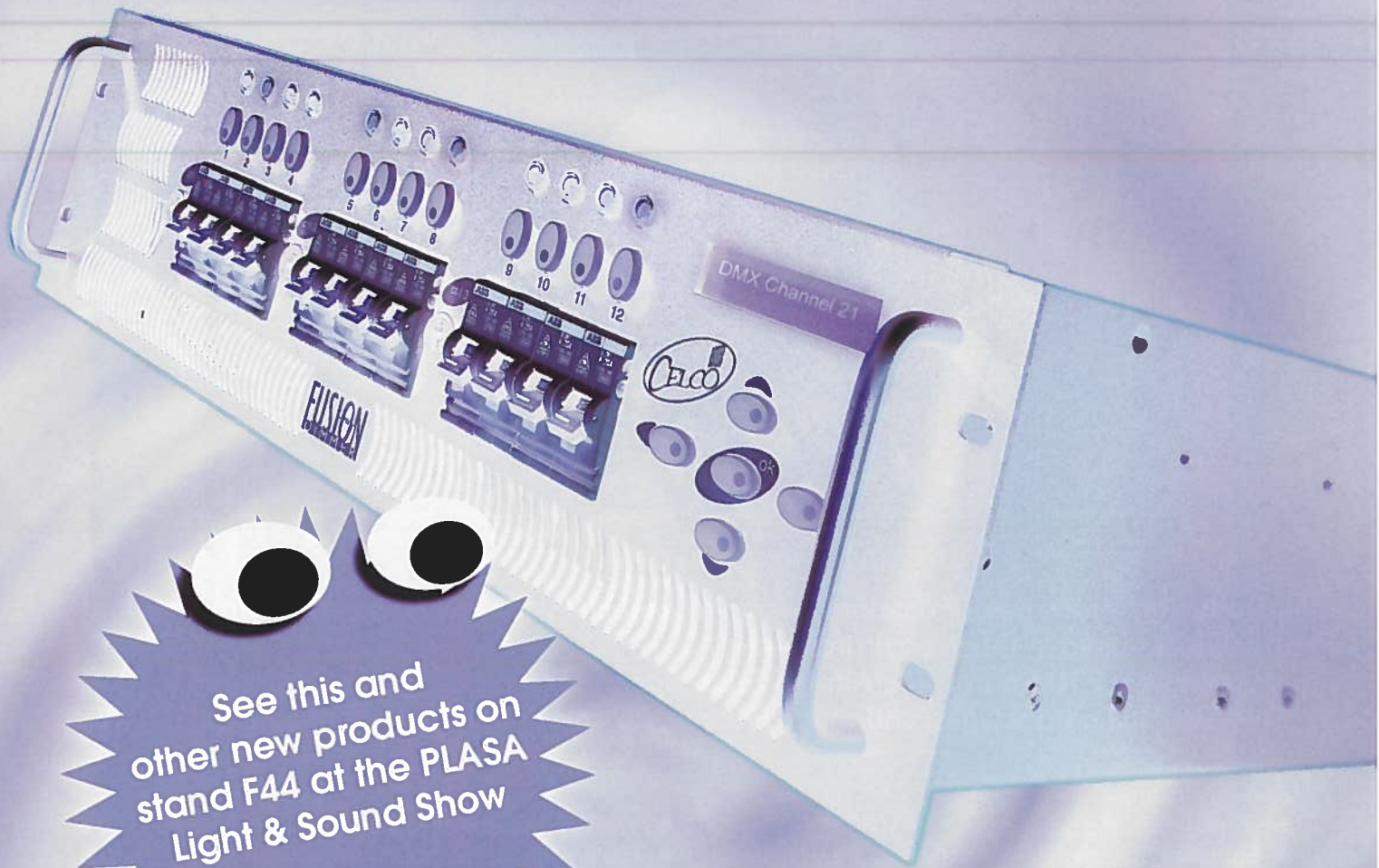
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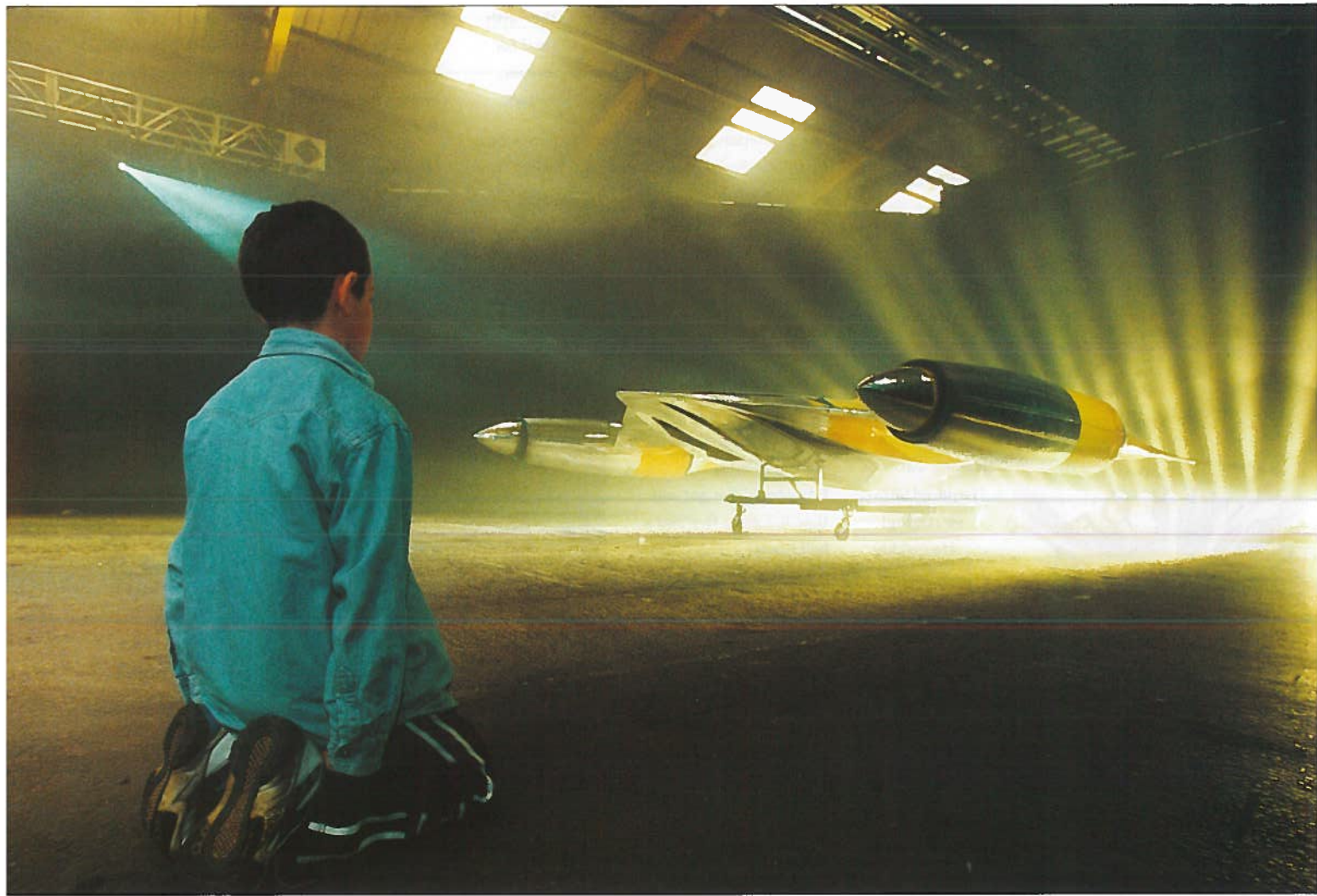


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May the Force . . .

Phay MacMahon needs little introduction to production industry professionals. Apart from being Irish and charismatically humorous, he has been involved in a huge variety of projects, many as a lighting designer. MacMahon first became enmeshed with the Star Wars - The Experience exhibition in September 1998, when initial meetings took place between himself, Mary Aiken, the exhibition's artistic director and Peter Aiken of Aiken Promotions in Dublin who decided to take the concept on the road.

Germinated in Dublin, it's no surprise to find a healthy Irish component on board for this somewhat eccentric production which opened at Dublin's RDS. It then launched into the Manchester Evening News Arena before landing at Hall 2 of Wembley Conference Centre for its

London run. A full European itinerary is expected to follow.

The exhibition comes at a time when Star Wars hype is at an all-time high with the release in the US of Star Wars Episode 1: The Phantom Menace. This is the first Star Wars 'prequel' starring Ewan McGregor and Liam Neeson, which rewinds the story to the childhood of Anakin Skywalker (father of original film hero Luke). Surprisingly, despite the new movie's mixed reviews from the critics, public appetite for Star Wars' own eclectic cultural fantasy brand of 'Power of Myth' has not been dampened, even 22 years after the original film's release.

Naturally, or perhaps inevitably, as with all modern large-scale entertainment phenomena, there is a corporate sponsor involved. The Star Wars exhibition is sponsored by Kelloggs. Disappointingly, their generosity didn't extend to the inclusion of a Nutri-Grain bar in the Kelloggs goody bag at the exit. ➤



TV/FILM

Never one to shy away from a new experience, Louise Stickland donned her galactic pants and joined the Star Wars 'Power of Myth' Roadshow in Dublin

The production challenges have been many, varied and totally different from those of a festival or a large concert. They started when MacMahon (originally approached just for a lighting design) learned that the exhibition was planned to occupy 22,000 square feet of space, and to be divided into six different rooms including a full-on cinema with auditorium seating. Each section was required to revolve on 20-minute cycles and accommodate a potential throughput of 200 people at a time, as well as touring to a variety of venues and being able to be fitted up, tech'd and ready to run in two days.

He realised at the outset that some radical thinking was required vis-à-vis staging! He quickly dispensed with the original idea of using exhibition panels to build the rooms which would have been a nightmare for construction and travelling. There was only one thing for it - to rock and roll it - with trussing and drapes. This would make the superstructure highly portable and durable, as well as enabling them to gain the headroom, rigging and fixing points needed for both exhibits and the necessary production technology to work.



trussing required from Tomcat, together with the 50-odd CM Lodestar motors utilised for the superstructure and all necessary drapes, lighting and control. This was just the start.

The exhibition packs into 11 trucks (trucking by Dublin-based McGuinness Forwarding), four of which are 'curtain siders' allowing side access, as elements such as the seating would be virtually impossible to get at from a rear-loading box trailer. Incredibly, and a testament to the great teamwork and total efficiency and togetherness of stage manager Paddy Fitzpatrick, the get-out time is a mere five and a half hours!

The exhibition itself starts with a Narration room showing a video explaining some of the heroes (predominantly male, of course) from ancient mythology and how they relate to Star Wars characters and their ideologies. Visitors then go into the Cinema area, where they see a film about the making of Episode 1, which also takes a brief glance at some of George Lucas's own cinematic influences. The next area is a traditional Exhibition space, full of relics, accessories, memorabilia, info clips, etc., including a Podracer, a Kodo model and various AV monitors. Towards the end of the 20 minutes in this section, there is a short stage show.

Next is the Naboo Fighter room - the most dramatic and exciting part of the exhibition for those with short attention spans. In here, a Naboo starfighter spacecraft reveals itself, flying in over the audience (someone told me this mimics Motorhead's legendary bomber!) to a theatrical lightshow, smoke, wind machines, etc. Once through there, punters are dumped out into a Nintendo room containing 96 machines all loaded with the latest Phantom Menace Podrace-based adventure game. After 20 minutes of this they are prised from their joysticks - the machines are automatically powered down on cue - and pass into a Kellogg's-branded area (featuring robotic cars containing Kellogg's characters) and then into the Star Wars Exhibition merchandising area.

Lighting-wise, MacMahon worked with co-designer Jesper Luth from Bandit. As MacMahon became increasingly bogged down with production red tape, Luth's own role in the lighting evolution assumed added significance. They put ambient lighting into the first two areas, sync'd with the video footage.

The exhibition area is colourful and busy, featuring exhibits picked out with ETC Source Four Profiles and Pars, while the small stage is lit with Pars and Martin Professional MAC 500s and 600s.

However, it's the Naboo starfighter room where MacMahon has been able to get his

teeth into some serious illuminative expression. The fighter itself is 34ft long and 28ft wide and weighs nearly a tonne. It was initially proposed as a static exhibit, but MacMahon pronounced this 'too boring'.

He and Charlie Kail of Brilliant Stages examined the fighter and discovered it had pick-up points, so had obviously already

been hung in a previous life on planet Naboo! Kail devised a trussing/tracking system along which the Naboo travels once it emerges from its partially shrouded starcloth 'garage'.

The starcloth lights up while floor-mounted Pars and MACs blind the audience, meanwhile the Naboo emerges along its track and is then lowered, complete with AF1000 strobes, roaring wind machines and flashing, colour-changing lights. After its reveal, it glides back into the blackness - a definitive high point to the exhibition.

In addition to constructing the Naboo tracking system, Brilliant Stages also built housings, flightcases and transport mechanisms for the numerous scenic elements and assorted exhibits that were supplied, courtesy of Lucasfilm Ltd. Additionally, they devised the cars for the Kellogg's characters. These work on exactly the same principal as the drinks trolleys at Yo! Sushi. (MacMahon relates a tale of a flying visit to the Poland Street restaurant, where Charlie Kail and the Kellogg's people were in such a rush they didn't even have time to stop for a plate of salmon sashimi!)

The lighting fixture count is not enormous, with 32 MACs, 156 Pars, 40 Source Fours, AF1000 strobes and Wybron UV guns with dowzers. Lighting was programmed by Luth on a WholeHog II and an Avolites Sapphire, which are DMX merged together, and minded for the tour by Ian Lomas.

Back in the central control room, curtained off cave-style in between the Exhibition and the Naboo room are two 48-way Avo dimmers and one 72-way, plus various hard power



Top right, Phay MacMahon with the original Podracer from Episode 1.

Above, Chris Crockford (left) who looks after the control system and AV elements and Ian Lomas who minds the lighting for the tour.

Facing page, Kerry Lewis from Concert Sound who supplied all the audio systems for the Exhibition.

Bandit Lites were asked to supply lighting and rigging once the grid plan was designed. They purchased the 443 metres of new A-type



distribution racks. Control for all lighting, AV and audio for the various shows in each area is achieved via Richard Bleasdale's SAM software, which integrates the various inputs and automatically triggers them via MIDI timecode. Shows run every 20 minutes from 10am to 10.20pm, a total of 33 times a day.

The control system and AV is looked after by Chris Crockford. The video projectors are all Sony VLPS 900 LCDs. Two each are front projected in the Narration room and Cinema, and another is rear projecting in the Darth Vader room of the Exhibition area. Dotted around the exhibition area itself are eight video monitor boxes all showing different MPEG clips. Crockford has 10 MPEG players running on 10 PCs, all of which are triggered by the SAM system.

Source material for the cinema is stored on a V1D hard drive player, fed to the two projectors via a distribution amplifier. There's also a 78" (1.9m) television showing Betacam movies about the making of Episode 1 front-of-house.

The SAM system is run on two Macintosh G3s. The G3s are connected to the show equipment via three ports. The first port kicks out RS232 to the MPEG players, the second sends RS422 to the V1D hard drive players and the third sends MIDI show control to the Hog. All audio signals for the two rooms with live audio and background music are also cached via the G3 hard drives, and the whole system was pre-programmed and set to run in 20-minute loops by Bleasdale himself.

"It has worked like clockwork," comments Crockford. Bleasdale also wrote some additional software specific to the exhibition. All Crockford (theoretically) has to



do is ping the system when he comes in at 9am. It goes through three warm-up cycles and then the real time-clock kicks in and off it goes. Everything, even the Nintendo machines and all crew watches are sync'ed to the G3s!

Essentially it's a giant six-way simultaneous equation. The only alternative way to run the show would have been cumbersome, long-winded and impractical, with

six separate rigs, control systems and operators - who would have to be there all the time.

Audience flow rate between areas is sometimes subject to anomalies and pregnant pauses. The shows are programmed to assume maximum capacity of 200 people per session, and depending on the day and time, the volume of throughput varies greatly. So if just 20 people filter through and sit in the cinema, they have to wait for action while 180 hypothetical humans take their seats!

Concert Sound are supplying audio systems to four areas. They were asked for straightforward left and right stereo systems and are using EAW speakers throughout: KF750s for the larger areas of the Cinema and Naboo room and the smaller KF300s for enhancement in the Narration area and the Exhibition. The two larger areas also have KF960 subs and there are vocal mics in three areas.

All four systems plus the vocal inputs are being controlled through BSS Soundweb programmable DSPs, purchased for the occasion by Concert Sound. Dave Dixon explains that it is the ideal environment with which to become acquainted with the Soundwebs, as there is no live mixing involved, just simple left and right signals. The Soundweb's software is a Windows 95

"There was only one thing for it - to rock and roll it - with trussing and drapes.

This would make the superstructure highly portable and durable, as well as enabling them to gain the headroom, rigging and fixing points needed for both exhibits and the necessary production technology to work."

interface that allows the operator to select and connect, via drag-and-drop, all necessary crossovers, parametrics, graphics, compressors, gates, etc, which can be built up and activated on screen. Dixon has all the necessary audio control at his fingertips on his laptop - with no console necessary!

Outputs from the Soundwebs are then fed into the SAM system enabling all audio signals to be cued from the MIDI timecode. Dixon enthuses about the system: "It's a new dimension in audio, and the sound quality is also very good - which is not always guaranteed with digital technology." Obviously there are also huge financial and space advantages in a situation like this - replacing a desk and basic outboard effects with just five 1U rack-mounting Soundweb 9088 units.

Noise pollution is inevitably a huge problem with Star Wars - The Experience. Not in anyone's wildest dreams did they believe that six areas, four with reasonably raucous sound systems belting out Star Wars music and sound effects, separated by a bit of black bolton cloth was going to contain noise. They have attempted as much reduction as possible through careful speaker positioning and



frequency filtering, but it's a constant uphill struggle and bass seeps absolutely everywhere.

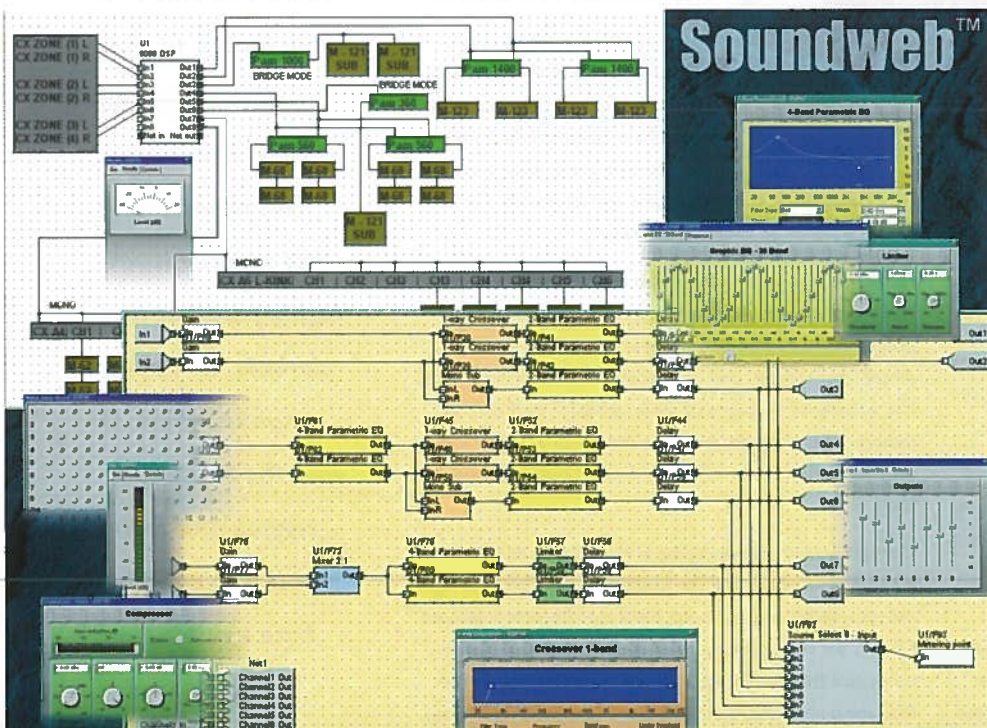
But at the end of the day, despite other sound systems firing up constantly around the exhibition, it's remarkably unnoticeable once you're engrossed in a particular room. Sound

quality throughout is strident, assertive and in-your-face, and in reality the leakage from other rooms just adds to the general hubbub and atmosphere. Personally, I found that anything adding a bit of intimacy and detracting from the fact that Wembley is an ugly great concrete barn of a venue suitable for very little except demolition, was a great bonus!

Despite the shortcomings of the venue, MacMahon does stress that the staff have been very accommodating to the exhibition and their specific needs.

How successful mobile exhibitions of this nature will become remains to be seen. It certainly appeared to be edifying enough for the Star Wars anoraks with a steady stream of people making the trek on a muggy Friday afternoon and some days have seen over 5,000 go through the exhibition.

Perhaps, being a Star Wars philistine, I was missing something . . . but being galactically challenged, I think my £12 (had I had to pay) would have yielded a more comprehensible Star Wars initiation if spent on an extended Internet browse!



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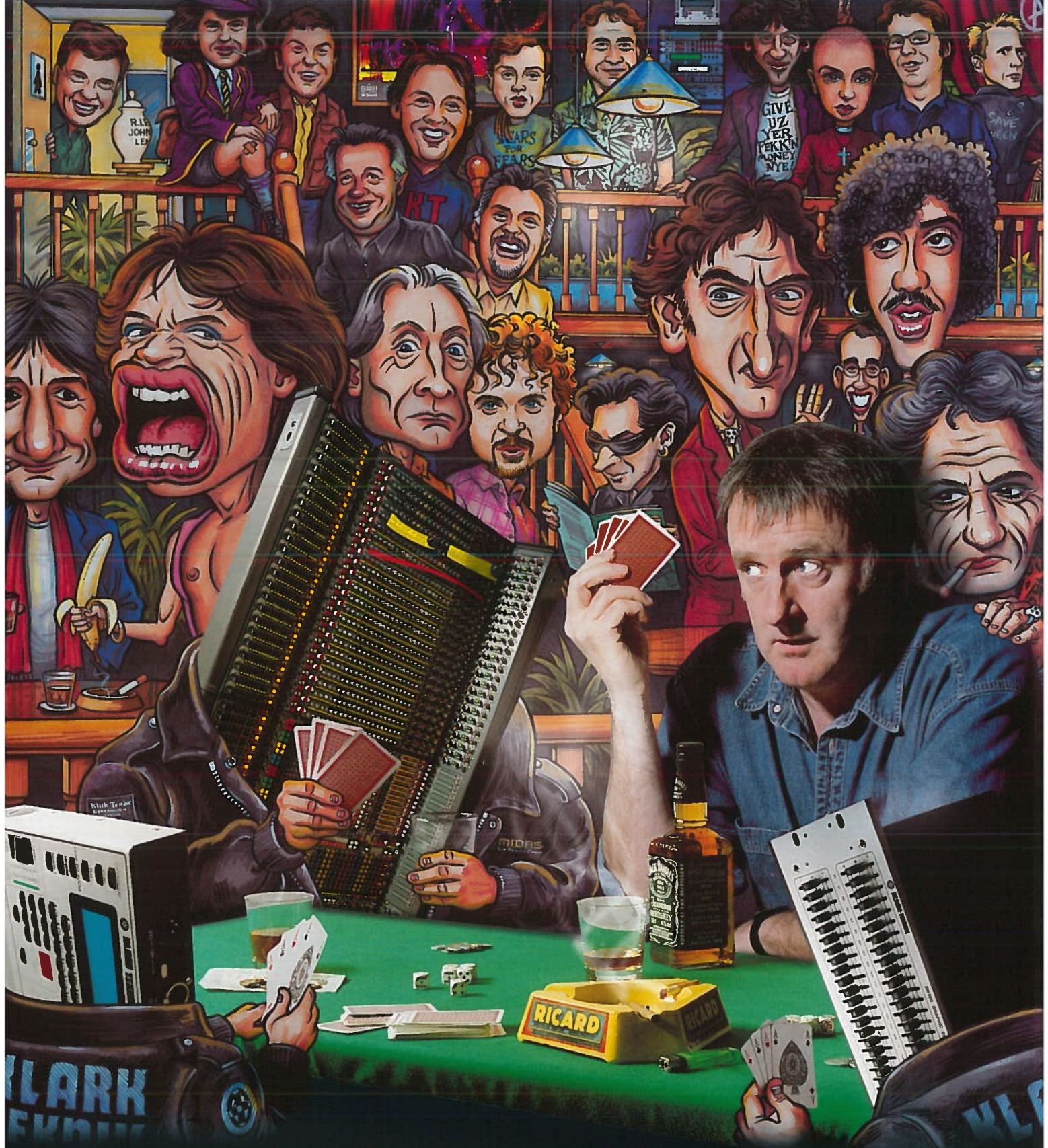
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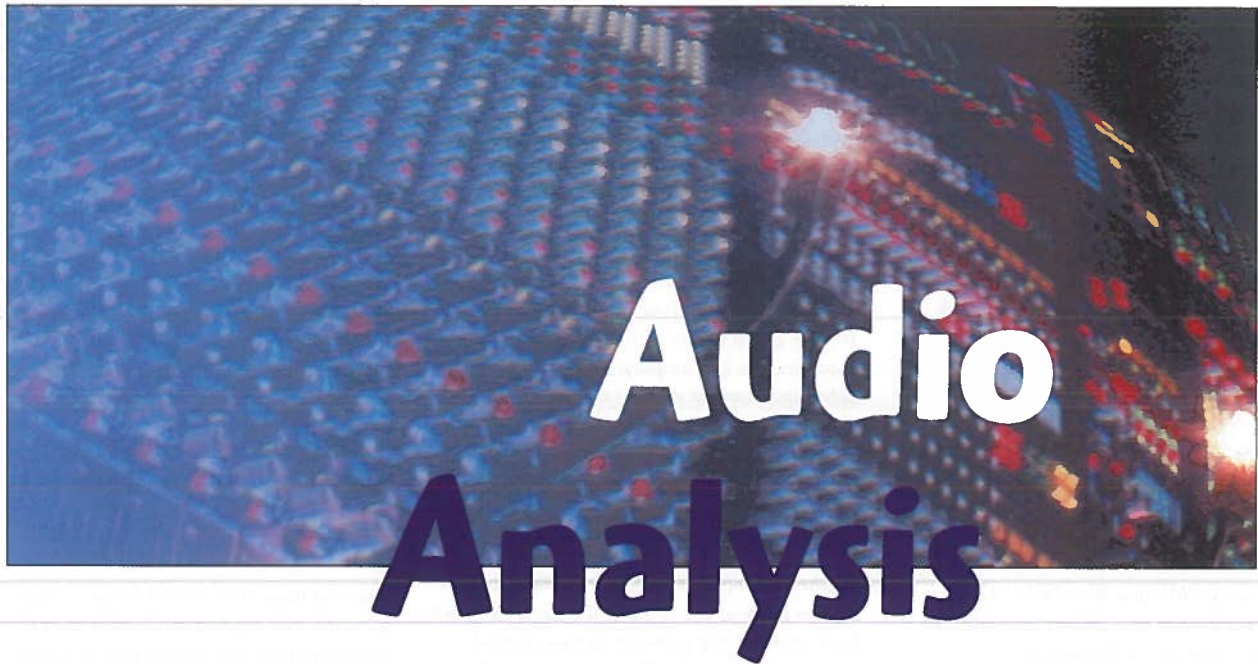
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Audio Analysis



PRODUCT SURVEY

Large-format sound reinforcement consoles have always held a fascination for pro audio buffs - wide expanses of steel, more LEDs than one could reasonably shake a stick at, and the head-swelling feeling of standing behind thousands of pounds' worth of high-grade electronics is enough to turn any engineer's head. There are, of course, some established 'industry standard' mixing consoles; these tend to be simple to use for a variety of mainstream applications. But technology never stands still, and despite the fabled conservatism of the market as a whole, certain brave types are taking the plunge into a more sophisticated kind of mixing. This is not to say that a good show can't be mixed on the most basic equipment, but the increasing demands on time, space and the engineer's creativity mean that his or her primary control platform has to become a little smarter.

Assignable Consoles

Assignability used to be a four-letter word for engineers. In the last few years, however, the likes of Yamaha, with the ProMix 01 and 02R mini-consoles have shown that we don't need to see all of the knobs all of the time. For large-scale productions, assignable consoles are only just starting to appear; however, the number of major tours and venue installations requiring huge numbers of inputs and outputs in a confined space is increasing all the time.

SOUNDCRAFT BROADWAY

Broadway is a brave move for the larger of the two Harman-owned console specialists; the cost of developing a high-end assignable console is enormous, and the commercial rewards limited. However, thanks partly to the resources available to the company, but also to the lengthy consultation period that preceded

the console's introduction, Soundcraft's flagship live product is a well-thought-out production tool. Offering benefits to user, owner and hirer alike, Broadway started out as a musical theatre console intended to give the likes of Cadac a run for its money. However, it has been adopted by a number of progressive thinkers in other live fields, which shows the degree to which theatre sound design has influenced the touring and installation markets.

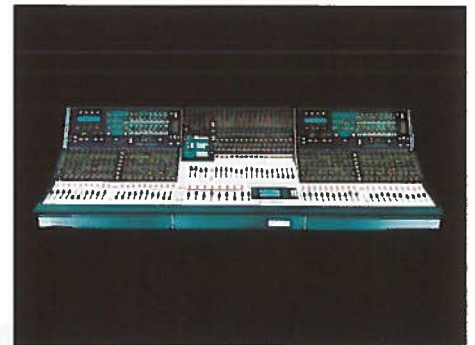
It's amazing to realise that the Broadway design is now four years old - though early software development delays have reduced the industry profile of this innovative console. Using totally analogue audio electronics, but a completely digital (and highly assignable) control surface, Broadway attempts to combine the best of both domains. Audio is handled in one or more flightcased 19" x 18U racks, which are networked together via Ethernet cables to the control surface.

This allows the system designer to locate the audio racks close to the stage, reducing multicore costs and improving signal integrity. The increasing use of remotes and MIDI control for outboard processing means that outboard drive electronics can be left on-stage too. The only compromise occurs when front-panel control is required for a particular effect; but then it is a simple matter to use a small, line-level multicore to handle the inserts.

Broadway's input count is impressive - there is potential for 280 input connections to 140 channels: 32 submixes are available - termed 'Grauxes' as there is no difference between aux and group mixes. Any or all of these may be fed into the 16-output matrix, along with the master busses. A total of five main mixes are available, configured as L,C,R and two rears for surround effects mixing.

One of the main arguments against assignability is the lack of visual information and 'pattern' on the control surface. Broadway's answer to this is to provide a complete channel strip (with a labelled rotary control or button for every function), in addition to the six assignable rotaries provided on every visible channel.

L&S rounds up the latest live sound mixing consoles in a major two-part feature.



Soundcraft Broadway

In part one, we start with the big guns - and uncover a couple of unfamiliar names



A ring of LEDs is used around every rotary control, with different patterns used to display each function. Four-character LED displays are used to identify channel names and control functions, and an LCD touchscreen is used for automation control.

Nice Touches

Intelligent tracking through the automation system means that there is no need to copy VCA assignments from cue to cue. A unique peak detection system warns the engineer of any input approaching clip level, using the solo meter.

Would Have Been Good

PC off-line automation control (due later this year), dynamics processing.

User Comment

On tour with Celine Dion, FOH engineer Denis Savage uses an 80-input Broadway: "I can't imagine going back to a 'normal' console. The Broadway is too cool to live without."

primarily to fulfil US rental company Showco's requirement for a total recall touring console, and to date, Showco own the only production units in existence. In architecture, the LPC is similar to Soundcraft's Broadway; digitally-controlled analogue audio, offering the possibility of remote connections, modular control surface and total recall of every function. Interestingly, the Harrison designers arrived at a very similar mix structure, with the same number of group/aux mixes, four stereo main mixes and 16 VCA group faders. Rather than using rotary encoders, the LPC employs assignable motorised potentiometers for variable controls. Their number is necessarily limited (they are, after all, heavy and frighteningly expensive), with each channel allocated a single pot, plus a central control section which provides the one-for-one control mapping for a single channel.

Harrison has opted for a single configuration of control surface; and to keep the size down, each basic channel strip is shared by two channels (more if channels 81-240 are used). Dual four-character mnemonics by the faders indicate which channel is being displayed. A 'mix-to-faders' system brings the send levels of each group/aux onto the channel faders for tweaking an individual mix. Connection to the audio rack(s) is via fibre-optic link; this operates over six transmission channels for redundancy.

If Broadway's input count is impressive, the LPC is positively over the top - with three mic and one line level connections per channel, the total maximum (if your budget will stretch) is a colossal 96 inputs. Curiously, as with Broadway, it is not possible to preview the inactive inputs (which would be a useful feature for festival changeovers). A quite comprehensive dynamics section is included in the audio chain, featuring a compressor/limiter and gate per channel. On the output side, only 16 of the 32 output faders are visible at any time, and one of the four stereo mixes. However, meters for all outputs are present on the console's meterbridge. Recall, of course, is total, with MIDI program changes being fired with cues as an option. Harrison has a

wealth of experience in the studio and broadcast field, and coupled with the touring knowledge gained through the company's relationship with rental outfits like Showco, the LPC should find friends in the industry willing to pay the high asking price.

Nice Touches

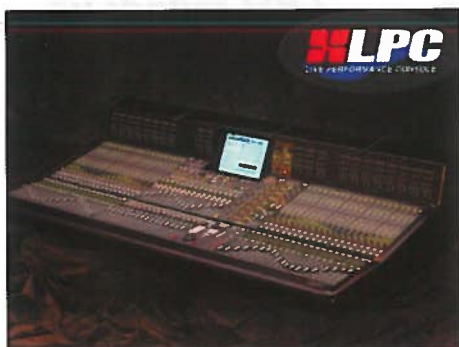
Multiple master outputs (rather than a matrix); these can act as separate feeds for delays and can have channels routed at different levels to each master. Two insert points per input are provided; pre and post-EQ.

Would Have Been Good

Pre-fade listen to alternative inputs, a modular control surface, all 32 output faders (mainly for monitor use).

User Comment

Howard Page of US rental company Showco provided the original concept for the LPC: "I'm amazed at the way people take to it. It's a superb desk for festivals, as there is absolutely no learning curve."



Harrison LPC

HARRISON LPC

Harrison has had a long history of live console design, though with the demise of the HM5 and SM5, the last remaining Harrison boards are showing their age. Since the late eighties, the company has concentrated on the recording market, which explains the Live Performance Console's studio looks. The LPC was designed

INNOVA SON SENSORY LIVE

Brittany is not the first place you would expect to find an innovative console designer. But then Innova Son is full of surprises. The company's range of digital mixing products includes the custom-configured Sensory console, Muxipaire distribution/mixing system, and Sensoft control software. Users include several notable French rental companies and on the broadcast side, BBC Television and Radio France.

Sensory Live is a lower-cost version of the Sensory broadcast console, but employs the same basic architecture in a fixed format. It differs from the Soundcraft and Harrison products in being completely digital, which results in the audio section of the console being much smaller; a mere 7U x 19" rack handles the system's 48 inputs and 24 outputs. Inputs are analogue (via a 20-bit, 48kHz A-D convertors), and connection

Sound Desks Compared . . .

DESK	Mono Input Channels	Stereo Input Channels	Sub Groups	Auxes	Masters	VCA Groups	Matrix
Soundcraft Broadway	40-120	Linked monos	*	32	5	20**	20
Harrison LPC	80-240	Linked Monos	*	32	8	16**	N/A
Innova Son Sensory Live	48-64	Linked Monos	*	20	3	**	24 (option)
Amek Recall	56	Optional	8	12	2	8	8
Cadac Concert	Up to 112	N/A	12	16	N/A	15	12
Midas Heritage 2000	44	4 - more optional	12	12	3	10	8
Soundcraft Series Four	24-48	4 - more optional	8	10	3	8	8
Cadac F-Type	Up to 112	Optional	12	8 or 16	N/A	12	24

to the console itself is via a 75-Ohm coax cable. This structure enables Innova Son to offer a 'stagebox' option; using the A-D/D-A rack as a digital splitter to feed FOH and monitor control surfaces, as well as remote broadcast and

switching, EQ and dynamics, but not the send level controls, which are assigned to the output faders as soon as a channel is selected. When an output mix is highlighted, the input faders show the levels of each channel into that group or aux, which is a major advantage for a monitor engineer. In case this wasn't enough, each selected input or output is displayed on an integral TFT screen. Considering that this powerful tool has been designed by a company almost unknown outside France, Innova Son are to be congratulated on this very smart console.

Nice Touches

The whole digital domain opens up unbelievable systems possibilities, especially when the concept is designed to work on a grand scale. Software-controlled detents on faders are very clever.

Would Have Been Good

The finish of the control surface does not reflect the quality of the console's concept.

User Comment

Chris Beale of SSE Hire has used the Sensory Live for a high-profile corporate event in - appropriately - Paris. "The Sensory Live appealed to us not because it was digital, but because it was incredibly flexible. Without this console, we could never have achieved the results we did, especially with limited programming time."

Recall Consoles

Recall automation (where the console stores the position of controls but doesn't reset them for the engineer) is a convenient halfway house to full resetability. The downside is that it is difficult (and expensive) to display control positional information on the console itself, so a screen-based system is usually employed. In the analogue domain, however, recall consoles represent a cost-effective way of offering speedy changes between one setting and another, and the consoles themselves function perfectly well without any kind of automation.

AMEK RECALL RN

With Amek's studio track record, it's hardly surprising that the company's flagship live console should offer a large degree of automation. The original Recall was criticised by audiophiles as being too much of an audio compromise for the sake of a sophisticated recall system. However, with the introduction of the RN version, modules benefit from a Neve-designed preamp and EQ section. The console's normal configuration is 56 inputs, with eight groups, 12 auxes, eight matrix outputs and a stereo master. Uniquely, input gain is controlled via a wide-ranging 12-position switch, with a +6dB trim pot for precise adjustment. Channel EQ is four-band, with the two mids being fully parametric. The high and low frequency EQ sections are fixed-Q, but with a bell/shelf switch. Of the 12 aux sends, the last two may be paired into stereo, or alternatively Aux 12 may feed the channel's direct output.

Amek's Showtime automation package is used with the Recall console, with Virtual Dynamics adding a wide variety of software-driven VCA gain processors. Showtime is used to offer a Recall



Innova Son Sensory Live

recording feeds. Add to this the Hyper Driver (another option), and the engineer has at his or her disposal a 24 x 24 output matrix complete with eight-band parametric EQ, compressor/limiter, delay and analogue output level. This adds up to a complete FOH-plus-monitor production system using only two lightweight control surfaces and three 7U racks! The fact that Sensory Live is compatible with the entire Muxipaire system means that highly complex systems can be realised at a fraction of the cost of the analogue equivalent.

Innova Son have ploughed a huge amount of time into the design of the audio routing system and seem to have come up with a very powerful digital audio engine. The control surface itself is the only area that reflects the fairly modest price of the system; rather than the heavily-customisable surface of the Sensory system, Sensory Live uses a standard design. The control layout is incredibly simple - just one motor fader, mute, solo and select buttons per channel. 48 input faders (one for every channel), L, R and M masters and 20 aux/group faders complete the lower section of the console. Above that is an assignable channel strip with the input gain and



Amek Recall

facility for every rotary control and almost every switch on the console; this is screen-based, with the external PC displaying the current control position and the stored data. For the majority of controls, resetting must be accomplished manually - however, fader level, mutes and VCA assignments are fully automated.

Notes: * Groups and Auxes are combined ** Linking channels provides more VCA-style groups

Input EQ	Filters	Dynamics	Automation	External Control
4 band parametric	HP + LP	N/A	Snapshot recall/reset	MIDI
4 band parametric	HP	On board comp/lim + gate	Snapshot recall/reset	MIDI
4 band parametric	HP	On board comp/lim + gate	Snapshot recall/reset	MIDI
2 band (2 para, 2 sweep)	HP + LP	Virtual Dynamics	Snapshot recall only	MIDI/Visual FX
3 band parametric	HP	N/A	Snapshot recall/reset, faders (option)	MIDI/event relays
4 band parametric	HP + LP	N/A	VCAs, mutes, some switches, fader levels	MIDI
4 band (2 para, 2 sweep)	HP	Virtual Dynamics	VCAs, mutes, fader levels	MIDI/Visual FX
4 band parametric	HP	N/A	VCAs, mutes, some switches, faders (option)	MIDI/event relays

Nice Touches

Showtime, Virtual Dynamics and the Visual FX remote control system are amazingly versatile and quite intuitive packages; the improved input module squashes the critics' objections to the earlier version.

Would have been Good

The number of VCA masters and matrix outputs is limited for large theatre shows; assignable metering can confuse users.

User Comment

Chris Headlam of Orbital Acoustics has incorporated Recall consoles into several touring and West End productions: "The Recall brings a level of automation to live shows that is unobtainable from conventional desks. With the RN input modules, its sound quality is now better than its competitors."

CADAC CONCERT

Clive Green's flagship mixing console is an awesome piece of engineering, and represents the ultimate in recall-based desks. Up to 112 dual-input channels may be specified, feeding 12 groups and 16 aux mixes. 12 matrix outputs are provided, but don't expect a left/right master; the theatre environment for which the console was designed does not require it. To assist with resetting the controls, pairs of LEDs are located next to every rotary control, to give a 'too high/too low/just right' indication of the current pot position. This provides instant visual feedback of the status of the console after each cue. Switches are automatically set by the automation system, as are VCA assignments, fader levels (if motor faders are fitted), MIDI control and



Cadac Concert

external event control. Rather than using actual switches on every channel strip, a CAM (Central Assignment Module) is used which has a full complement of switches for a single channel, group and aux master - all identified by eight-character LED labels. Individual channels simply have LEDs to indicate the switch status.

None of the current Cadac consoles has a meterbridge; instead, LED ladders are located next to faders, so engineers cannot suffer parallax problems. Eight-character mnemonics are used for naming the 15 VCA masters, and the on-board display is a simple 16-character LED display. Even the PC screen is basic, with a cue list and MIDI/event status display for off-line editing.

Nice Touches

Direct access to the whole matrix from channels is great; just the feel of the console makes you mix better!

Would have been Good

The only thing that holds this console back is its price tag.

User Comment

Munich's 1000-seat Prinzregententheater is equipped with a 40-channel Concert board. Joint head of sound Eckehard Kulla-Böcking commented: "If you look at comparable desks, there is nothing which comes close to the Cadac Concert Board. It offers comprehensive automation and Complete Recall functions, as well as manual control - all without having to use a PC."

Semi-Automated Consoles

In the past year, there have been no new top-end consoles that do not boast some form of automation. All the products featured below offer at least mute and VCA automation, and MIDI control of outboard equipment is to be expected as part of any package. Though there are plenty of smaller semi-automated boards around, the selection has been limited to large-format VCA consoles, since these days very few productions are mixed without VCA systems.

MIDAS HERITAGE 2000

Readers might expect to see the XL4 taking pride of place in this section; however, the new Heritage series represents the second generation of semi-automated consoles from Midas, and benefits from lessons learned with their predecessor. Developed as a spin-off from the Heritage 3000, the 2000 is a more traditional front-of-house console.

At present, the console is only available in one frame size which houses 48 mono input module positions, although other frame sizes are promised along with stereo inputs all available later in the year. 12 groups, 12 aux sends (of which two pairs can become stereo) and an enhanced LCR master routing system are provided, along with an eight-output matrix. In the 'system store' mode, the P&G faders are in software control, out of circuit and can be returned to infinity, thus enabling the engineer to step through his previously rehearsed scenes, the LED ladders showing each channel recalled level. Audio can be 'picked up' at any time by moving a fader through the memory preset level at which time the mix can be modified and over-stored to that scene. In the 'system recall' mode, the faders have to be positioned at 0dB in order for each scene to be recalled at the preset level. In this mode, the fader becomes a 'fine trim' and a 5dB increase on input, for instance, will add that increase on to every recalled scene. Additionally, any trim in this set-up cannot be over-stored to a preset scene. All in all, a very engineer-friendly approach to simple automation.

Nice Touches

Distributed processing helps the reliability of the automation; the lack of outboard PC is a bonus for tourers.

Midas Heritage 2000



Would have been Good

A larger matrix would win the 2000 allies in the theatre trade.

User Comment

Danish importer Ascon trading has incorporated a Heritage 2000 into the Herring Kongres Center, which is re-equipping to take on Les Misérables later this year. Ascon's Ib Sigismund commented: "It's impossible to resist the beautiful design of the Heritage consoles, and the Heritage 2000 more than fulfilled the client's requirements."

SOUNDRAFT SERIES FOUR

New this Summer, the Series Four (which bears no resemblance to its 1980s predecessor) is a successful attempt to reduce the dimensions of a large-format console while retaining its key features. As a mid-budget touring console, it has just enough sends to take on complex productions (eight groups, 10 auxes, eight matrix outputs). Theatre users and the corporate market will benefit from the Amek-designed Showtime automation package, which accompanies the console.

Soundcraft Series Four



The shallow frame profile (less than 800mm front-to-back) allows the Series Four to squeeze into many control rooms that are inaccessible to large-format boards. The use of Amek's Virtual Dynamics and Visual FX could theoretically turn this into a complete audio control system without the need for much outboard processing. Though this console is a fraction of the price of the others in this month's round-up, thanks to the Showtime package, the Series Four represents a great

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Nice Touches

A fully-featured stereo input (mic and line) and four aux sends that can feed directly into the matrix, and can be paired into stereo. The seriously heavyweight CPS2000 linear power supply supplied with the larger versions is a major bonus.

Would have been Good

Fully-parametric EQ and an expandable matrix would have helped the Series Four for larger theatre productions.

User Comment

This product is so new that it's not possible to run commentary from an end user.

CADAC F-TYPE

The F-Type was launched in 1997 as Cadac's affordable, compact theatre and touring console. Using all the principles that made Cadac the name in musical theatre, the baby of the family uses the same Windows-based package as its bigger siblings to offer much more than just mute scene automation. Automated functions include input switches (channels have two mixable mic/line inputs each), EQ and filter switches, all inserts, VCA assignment, muting and several other useful switches. Faders can be automated (for snapshots

or real-time movement) and the usual MIDI and event control triggers are also included. As for the audio chain, the two inputs feed a four-band parametric EQ (but either may be switched to bypass it) via sweepable HP and LP filters. Input modules have either eight or 16 aux send (depending on your budget), with clever mono/stereo selection, and any number of stereo modules can be fitted. A logic-controlled PFL/AFL system, eight-character VCA labelling and clear layout help the F-Type to be Cadac's most approachable console - and with a variety of input/output module types, pricing is extremely competitive considering the quality of engineering employed.

Nice Touches

Little details, like write-on legend strips for groups and aux masters, are great; as is the ability to hot-plug modules during a show. Since there are no standard frame sizes, the number of inputs and outputs is entirely up to the buyer.

Would have been Good

Traditional rock and roll engineers will miss the L/R Master outs and 'static' VCA/mute groups.



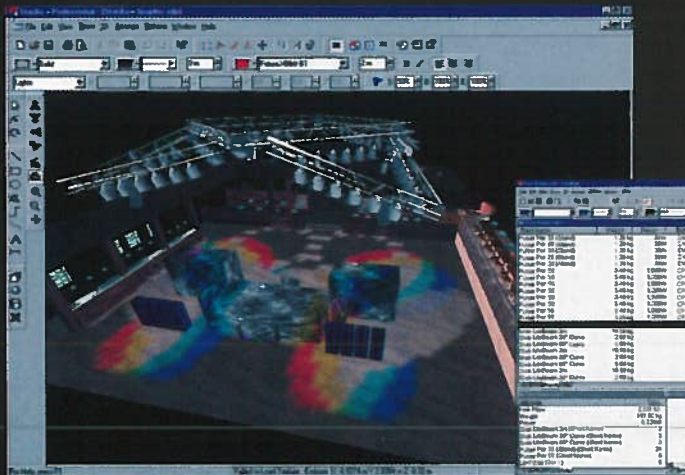
Cadac F-Type

User Comment

Richard Lienard of Sound Hire bought the first two F-Types that rolled off Cadac's Luton production line: "The F-Type's ergonomics are wonderful. It's so simply laid-out that any engineer could walk up to it and use it within five minutes."

That completes the first part of our survey of recently-introduced live consoles; for those who require a simple guide to the features on offer, we have also included a basic facilities table. One aspect not mentioned so far is pricing; this is deliberate, as the vast number of configurations, options and add-ons available for each product can make a huge difference to an individual console's cost. Also, the consoles featured in this survey take radically different approaches to control topology - even though their audio paths are still remarkably similar. So the decision of which console to specify has to rest with the user, and the level of complexity that he or she requires. If you decide that the first eight products in our survey are beyond your reach, pick up next month's L&SI for a guide to the medium-sized alternatives on offer.

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If this were the FT, the headline for this item might be 'Liquid Assets'. It is a tale of two clubs and two overlapping concepts.

FIRST THE ebullient Steve Thomas, boss of rising star and City favourite, Luminar Leisure, sold his shareholders on a 'new' club concept called Liquid. Based on the use of 'the latest

video technology' the idea is to create a flexible interior to a new chain of themed clubs. Nothing new there you might say, especially since the structures being used simply won't allow anything remotely akin to a blue-screen studio, which is probably what fostered the notion in the first place. However, Steve is very convincing and the

idea made a lot of friends and achieved extensive coverage in the financial press.

I HOPE Steve has protected the Liquid name, because the same month that Luminar debuted their first site of that name in Ipswich, entrepreneur David Phelps opened his own version under the same name in Wandsworth, described as 'New York industry meets traditional glamour', the main liquid connection being by way of the ubiquitous lava lamp. It will be interesting to see how Luminar find a way out of this little conundrum. Great minds think alike!

Not so long ago, I paid a brief visit to TILE, the Trends in Leisure and Entertainment conference and exhibition, which this year moved to the Business Design Centre in central London. Of course, I ran into many old friends including Peter Ed revelling in his dual role with ETC, as well as representing the Themed Entertainment Association (TEA). If I was more creative, I am sure I could do something with those acronyms and the odd coincidence of Peter's short surname.

I ALSO HAD the pleasure of finding Pat McKay, the glamorous ex-publisher of Lighting Dimensions and Entertainment Design (or TCI as it was), wandering the hall. McKay, who was also the pioneer of ETEC, Entertainment Technology on Line, that was, sadly, less than successful commercially due to a touch of insensitivity in its marketing approach and unexpected prejudice in the marketplace, tells me that she is still providing consultancy services on Internet-related issues. It was ETEC's failure to attract sufficient industry sponsorship that led to Pat's decision to sell the mags to Intertec.

WHAT IT WOULD have been to be a fly on the wall when Pat was confronted with another ex-publisher turned Internet provider, who shall remain discreetly anonymous, found trawling the aisles the previous day presumably looking for support for his own latter-day Net venture. Did her old adversary admit to a conversion on the road to Damascus when he volte-faced into web commerce, I wonder?

Most people are probably aware of the sweltering temperatures which New Yorkers have to endure in the summer and, as has been well chronicled, this year's been no exception.

NO SOONER had I received a siren call from Ellen Lampert, redoubtable LDI organiser and Entertainment Design contributor, from her maison-seconde on the Caribbean island of St Barts (where she had gone to 'avoid New York in the summer at all costs'), than I get an E-mail literally dripping with perspiration from the one who couldn't get away.

JOHN HUNTINGDON, author of Control Systems for Live Entertainment, and currently a faculty member in the Stage Technology department of New York City Technical College is the poor unfortunate who got fried, and how! Here are the edited highlights: 'The nights of holiday weekend July 3 and 4 were brutal, since I don't have A/C in my apartment. Monday night/Tuesday morning, I was woken at 1.45am by the sound of my fans and the unmistakable smell of burning electrical insulation.

I GOT UP, but found nothing on fire, so I looked out of the window to see a manhole cover under a parked car just pouring out nasty smoke, and the first of many fire trucks arriving. The power was going on and off as our electrical service was burning up and it took them about an hour to put the fire out.

TUESDAY AFTERNOON, there was a major power failure and the utility shut off the substation that services everything above 155th street. When I finally got home that night (both subway lines servicing my neighbourhood were intermittent), we still had no power . . .

Wednesday, still no power when I got home, though they had turned on most of upper Manhattan at about 5pm, but not our part! At about 3am, I was woken up by fire-trucks on the block yet again. The utility guys had powered up the temporary service to one of the houses across the street without checking it, and it turned out there was a short. They vaporised a whole wire, and set the basement on fire.

THE POWER finally came on at 10.45am on Thursday, after 57 hours. But I am as burnt out as some of the wires out on the street . . .

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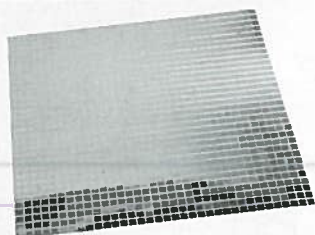


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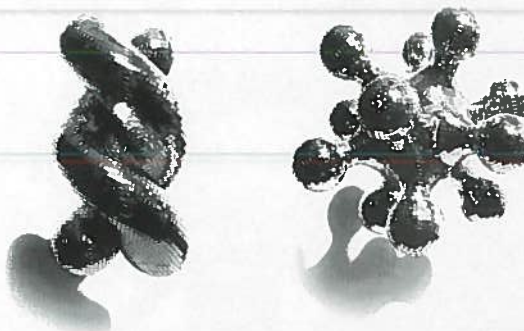


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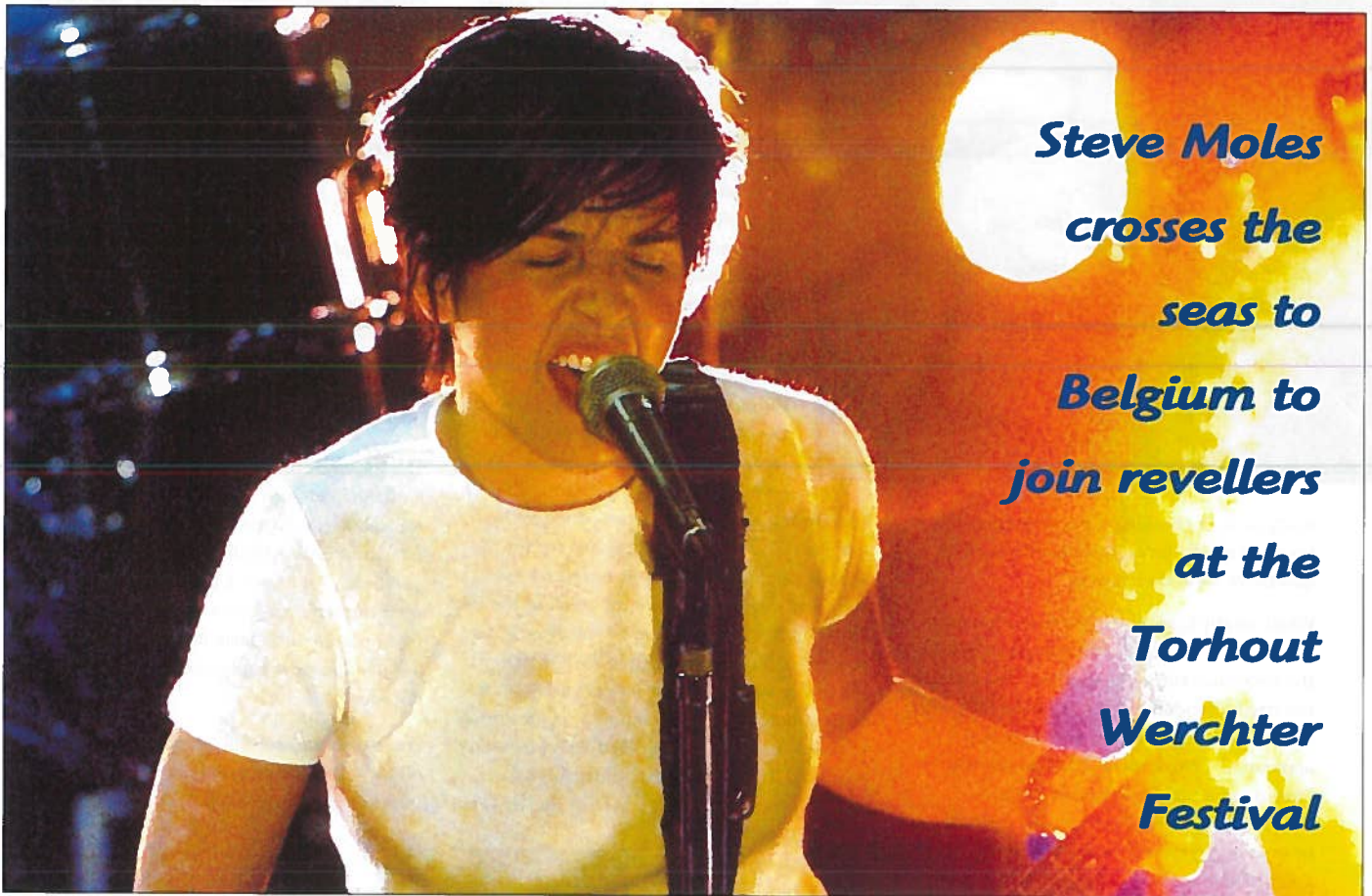
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*Steve Moles
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seas to
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join revellers
at the
Torhout
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Festival*

Besides the simple fact that this is EML's 10th anniversary of service, there's a lot to be said for the Torhout Werchter (TW) festival. It's one of the originals - like Roskilde and Reading it's been going a damn long time. Indeed, the name of the eponymous town Werchter is derived from a compound of 'camp' and the ancient Flemish word for 'venerated' - though that is, of course, a coincidence. There are several reasons why we might look to TW as a template, to search for signals of what the future holds for festivals in general, for Werchter has always been a very significant example.

When Belgian promoter Herman Schuermans first planted the idea, he took the nurturing route, starting small and growing big over time. Through the dim recesses of my own memory, I recall attending one of the earlier incarnations with the Ramones. The amphetamine-fuelled excesses of the period preclude much detail; a knee-high stage, a truss and two Genies, a Martin Philishave PA (God bless 'em) and no catering - not that



FESTIVAL

anyone seemed to care. What was pivotal in Schuermans' model was the idea of running two festivals on two separate sites on consecutive nights, using the same bill. Even more audacious was the fact that the two sites, T&W, were barely 150km apart, that's just over 90 miles. Where did the punters come from?

In the early days, familiar names like Entec (then at the height of their powers, and arguably one of the most experienced festival companies in Europe) rubbed shoulders with Capital Sound to provide the gear. Then Mr Schuermans, along with the by now well-established outdoor stage and roofer Hedwig de Meyer (Stageco) had an idea: 'Why don't we start a Belgian sound and lighting company and do this ourselves?' Of course, there were more reasons to start a company than the rewards of a two-day festival, but nonetheless EML was born and soon levered its way into the driving seat of the festival. On a historical note, Schuermans and de Meyer made a shrewd decision. Since its inception, when the two men bought out a little known struggling entity, EML has shouldered its way to the top with hard work and deft management.

Most readers of this magazine will be aware that EML is now owned by Vari-Lite Production

Services (known as VLPS Brussels/EML), and is home to the VLPS European CEO Bert de Haes. What may astonish some is the fact that its growth from a minor league player in one of Europe's smallest states, to a major presence across the continent was achieved in little over 10 years, thanks mainly to the business prowess of Wim Despiegelaere, Jan Van Malder and De Haes.



You can see one of the reasons why EML grew with such vigour in the way they handled the demands of the festival. "By the time we'd taken over the whole thing it was massive," explained senior sound designer Patrick Demoustier. "We used to service both sites with the same PA system (Martin F2). When the last band completed its performance on the Friday night, we'd work non-stop, stripping out the PA, monitors, front-of-house, everything. And then truck it straight up to Torhout and load it in immediately." They became so adept that Demoustier admits that at their peak they had to be especially vigilant with themselves. "At our quickest, we could strip out the first site in two hours, truck doors shut, bang, gone," he noted with justifiable pride. "Then one morning we found ourselves at the other end with the system up and



Cover page, Sharlene Spitteri, lead singer of Texas.

Below left, Michael Stipe of REM and right, the massive JBL cluster.

Facing page, Robbie Williams.



ready to start checking it out when just before I pushed up the fader, I realised it was only quarter to six in the morning."

Which neatly leads on to another interesting fact about the festival. Not a single officer of the local civic authority appeared throughout the day I attended. Where were the little men armed with decibel meter and recording apparatus? "No, I know," said Demoustier. "Amazing isn't it? Everywhere else across Europe sound levels are becoming a bigger issue year by year, yet here they've never asked. There is a law in Belgium, but nobody comes."

Yet both sites are in relatively densely populated rural areas, something almost unavoidable in Belgium. This points to two things, the sensitive approach taken by EML and Schuermans to their temporary hosts - e.g. not running up the system at 5.45am - and the more sinister lack of responsibility exercised by the local burghers and government authorities.

Of course, what Demoustier didn't say about these over-night black box races is that while the PA crew sweated, the lighting crew slept - it being deemed impractical to move an entire lighting system with the same alacrity. Ironic, really, when you consider the size of lighting rigs that get shifted back-to-back these days, and the fact that the lighting guys did little but sleep all day, it being mid-summer and thus daylight until 9.00pm, making all but white light a waste of bulb life. "But then came the change," said Demoustier. "The festival eventually became so successful that two nights were required at each venue to satisfy the demand." And the PA crew finally got some rest, system shifting being no longer an option. But Schuermans had set a precedent. Same line-up both sites, just shift the bill overnight. A formula Virgin have copied slavishly for four successful years now, and indeed the enfant terrible of music promotion Vince Powers has

deemed a Reading North as a good idea, stealing Virgin's preferred site into the bargain (has this man no shame?). However, and here's a cautionary tale, 'Festival Season Europe' has become saturated - several would-be Vince Powers lost their deposits last year. An undecided promoter could do worse than copy what Schuermans is doing. He led the way with flip-flop billing across two sites - now he leads the way with retrenchment.

For this year, Torhout Werchter is a misnomer, the festival ran at just one site - Werchter - expanding laterally by adding one extra night on the single site to form a complete weekend event. From the point of view of delivery, as in sound and light, Werchter has a couple more lessons to offer.

Dealing with sound first, what surprises most is the system. "This is the first time we've used a full JBL HLA system," said Demoustier. On its own, that's not a big surprise. EML (I

keep to the old name because although the shift to VLPs has been an easy one for the lighting side of the company, most users and buyers of service in Europe still think of the PA side as EML), have had the PA for three years now. What's odd is the system. EML is one of the few companies either side of the Atlantic to have bought it. There wasn't a single visiting engineer on the day I attended Werchter who'd ever used it. With only the Audio Analyst variant having any real presence in the US (and the two are different enough to be barely compatible according to Demoustier, who experienced making the bastard match at an augmented Springsteen show), one wonders why this is.

Demoustier practised with the system before committing it to Werchter: "We did some smaller festivals first - Gras Pop, a metal festival used a system just eight wide with three high flown." And immediately found a short-coming in what is otherwise a superbly-designed system for rigging and deployment. "The system isn't designed for flat-field environments," explained Demoustier.

If you think about the American market, look at the Prism system as a model. It's designed to be hung in a perfectly vertical column. Same with the HLA. When you're indoors you can extend coverage in the vertical plane by tilting the horn within the 'cabinet' frame up and down at the top and bottom cabinets of the hang. When you move to outdoors USA, the

touring market is dominated by the 'Shed' venue, a purpose-built arena with sloping grassy embankments. Thus the same coverage solutions apply." So the flat field of Werchter, and let's face it many other festival sites around Europe, posed a challenge. "The obvious thing to do is tilt the PA down, but HLA is not designed for that, the extrusions that link the cabinets together would slide out. We had to develop a locking mechanism to keep them in place." As if to confirm the need for downward tilt, Demoustier recalled a year when Clair Brothers had provided the PA. "Stacked on several levels, but facing straight out. Much of the energy was lost across the fields. We had complaints from 10 kilometres away."

Linking solved, it was just a matter of attaching a length of mini-beam truss across the bottom of the cluster and pulling back to tip it down, something easily achieved given the truss-like chassis of the cabinets. Are the chassis designed to accept stress outside the vertical plane? We shall see.

The PA, once tilted, performs very well. This is a 60,000 audience and Demoustier has just 48 top cabinets hung per side. His only delays (stacks of EAW KF850) stand on a 70m perimeter, "but I don't think we need them. I tried the system without yesterday and it was fine - maybe just a little high end information will need some reinforcement beyond that distance."

Front-of-house control is a generous pair of Midas XL4s, and according to the list a modest selection of effects, each desk having: a single

PCM70, a pair of SPX1000s, a TC M5000 (four in/out), a TC 2290, a BSS 901, plus the required 10 channels of compressor/limiters and eight channels of gates.

"I spend most of my time in preparation for the festival sorting through the mic lists and other requirements," said Demoustier. "Sorting out what is really important, and what they (visiting engineers) can make do with. The list you have is what we send out, what we actually supply is a whole lot more. You'll find several Tube Techs

out front, and a couple of Avalons, for example. We just don't list them as we only have a limited stock and they might end up going out on a job that actually pays for such things." Candid of Demoustier to say so, but I'd challenge any PA company to do otherwise.

Monitors, overseen by Fred Pignatelli and Stef Geens, have a fun tale to tell. As with front-of-house, the desks are almost by default a pair of XL3s, with six KT DN360s apiece, the usual rack of gates and compressors, and a pair of TC



M2000s each. Well that's what the list says, but actually there's a full complement of TC Electronics remotely controllable EQ instead, arguably the ideal system for the multi-pop group festival stage set-up. "We wanted to buy a system some time ago," said Demoustier, "but they're too expensive. But then just prior to the festival, TC called us up and said they'd just had an order cancelled and offered us the set at a very good price." Now there's a purchasing strategy! Call me if you'd like to know just how little EML paid.



Werchter

provides the clearest evidence that while there are ways to improve the festival experience, there is a price to pay.

The TCs really come into their own when you get a band that can't adapt to monitors all being run from stage right, like Marilyn Manson, who has yet to learn how to tilt his ugly visage to the right. (I only mention this as it's the most musically significant part of Manson's act. Personally, there's more pleasure to be had watching cheese rot. When a pantomime grotesque begins to believe its own press then you know there's a reality problem. Next please.) Him aside there were no complaints.

Lighting has less interesting tales to tell, but one very intriguing factor. Ask yourself this. Geert Vanhout is LD for the main stage (and the secondary Pyramid stage) yet he's only specified eight VL6Bs and 38 VL5Arcs. Why so few moving lights when he has the full resources of VLPS to draw upon? "The answer is that the bill-topping bands are bringing their own rigs. We supply mainly the Pars, most trussing and rigging, all followspots (house and truss-mount), and a minimum lighting system for the other acts."

This is probably one of the better examples of the VLPS full production service - as opposed to just being a moving light supplier, which is why Vanhout's crew spent every available hour from close of show to dawn cramming in both

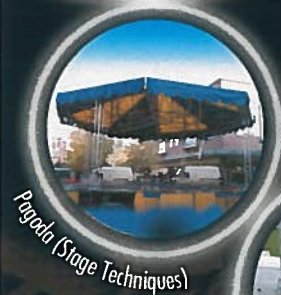
Metallica and Bryan Adams rigs on Friday night. "Both bands even have their own desks, although we provide an Avolites Sapphire and FPS Whole Hog for other bands to use." Truth is, Vanhout does most of the other bands himself, especially in the Pyramid tent, where lighting is an all-day necessity. He doesn't believe the touring light show is a great idea. "I think there should just be one big rig. That's why when you look at the Metallica crew they're completely dead."

Fair comment, but then they have just done Roskilde to Turku (they have the mosquito bites to prove it) to Werchter back-to-back. Besides, who could deny the lighting companies this valuable revenue stream in the summer season - if you didn't know better you'd think Neg Earth had more gear at Werchter on Saturday night than VLPS. More importantly, the punters now get a more 'authentic' show, surely a significant factor of differentiation in a crammed market.

Aside from lighting, always a relatively small issue in a summer of long, light nights, Werchter does provide the clearest evidence that while there are ways to improve the festival experience, there is a price to pay. Audio has its own pros and cons as well. Surely the point is that any modern PA system will do the job - even one most people haven't used - so long as it's thought about carefully. Whatever you choose to believe in this tale, of one thing you can be certain. Werchter will be on again next year, it will be serviced by VLPS Brussels/EML, and it will sell out like this year.

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Certain Aura

Rob Halliday visits the Shoreditch home of Aura Sound and talks with the three sound designers behind the company to discover what prompted them to relinquish their freelance status

Every now and again you watch a show where one element leaps out and overwhelms you, seemingly effortless yet somehow just perfect, dominant yet at the same time shaping and binding together the production as a whole. It might be a superb moment of acting, a precise lighting cue, a beautiful piece of music. In the 1992/3 English Shakespeare Company production of *The Tempest*, it was a soundscape (to call it a mere sound effect would be demeaning): the sound montage of the storm that opens the show, building from nowhere, then overwhelming the Duke's ship, then retreating again once Prospero's magic had achieved its aim.

Overall the production wasn't the greatest ever, but the sound of that opening sequence set the tone for Michael Bogdanov's 'Shakespeare by a nuclear power station' concept - a sublime amalgam of sounds that bordered on music, impossible to describe, but about as far from traditional 'thunder' sound effects as it is possible to be. It is etched indelibly in the minds of many who saw the show.

The man responsible for that sound design was John A Leonard who, as his programme biography modestly notes "started working in theatre sound in 1972 and has not stopped since." That start was at the Bristol Old Vic, working with then-up-and-coming directors such as Bill Alexander, Howard Davies and John Caird before, like many of them, moving on to the Royal Shakespeare Company.

From 1979 onwards he worked on such legendary RSC productions as *Nicholas Nickleby* and the original *Piaf*, being appointed head of sound and made an Associate Artist in 1984. Five years later ("fed up with working 60 feet underground at the Barbican Theatre") he left to embark on a hugely successful freelance career. This has encompassed an enormous range of shows yet somehow, for the most part, has kept below the radar of the technical theatre press.

In the main this is because Leonard has never become one of the 'mega-musical' sound designers, specifying enormous amounts of equipment for the biggest of shows (he was offered the job of mixer on the original *Evita* but opted for the RSC instead): that 'in your face' area of sound design has never appealed to him. Instead, he has created his unique brand of soundscapes for an enormous range of theatre companies around the world, enjoying particularly close alliances in recent years with the Almeida

Theatre and Donmar Warehouse in London. For the former his work has included the acclaimed productions of *Hamlet* and *Medea* in London and on Broadway (the latter winning the 1994 New York Critics' Drama Desk Award) and, more recently, the



*John Leonard during sound rehearsals for *The Triumph of Love* at the Almeida in Islington*

revival of *Plenty* starring Cate Blanchett; for the latter he has even ventured into musical

territory with designs for Sondheim's *Assassins and Company*, both featuring a minimalist approach that made the shows appear unmiked yet somehow just magically audible.

Which almost makes it sound as if the wave of new sound technology has passed John Leonard by. In fact, nothing could be further from the truth: Leonard is a consummate artist, but he isn't afraid to use the latest technology if it makes it easier (or, indeed, possible) to achieve his aims. In 1978 he co-designed (with Alastair Goolden) the innovative *Libra* mixing desk with its assignable faders, and he was an early adopter of samplers, triggering sound effects from computers running MIDI control programs.

More recent shows have seen him extend the MIDI control to relatively inexpensive automated mixing desks such as the Yamaha O2R. The recent West End production of *Alarms and Excursions* was based around a soundtrack that Leonard maintains would not have been possible without the technology: sound operator Rob Tory (now, along with sound designer Frank Bradley, one of Aura's regular associates) triggered sound effects on cue, but every other element of the replay (sound effects triggering, level setting, routing) was controlled from an Amiga computer running Richmond Sound Design's *Stage Manager 3000* software, sending MIDI to two Akai



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S3200XL samplers, a Yamaha 02R mixer and a Richmond Sound Design Audiobox.

That soundtrack was actually pieced together as part of the rehearsal process, with Tory and the equipment in the rehearsal room with the cast, meaning that everything was proven and ready when the show moved to the theatre.

Though his schedule remains as hectic as ever, supported by his near-legendary ability to arrive in a theatre seemingly with nothing and create a spectacular soundtrack on-the-fly (you can tell the directors who have worked with Leonard before: they're the ones who don't appear nervous during this process!), the last couple of years have seen one important change in Leonard's working routine: he has given up the freelance life, and instead is gainfully employed as one of the three founding directors of Aura Sound Design Ltd. His two co-directors are John Owens, who has worked as Leonard's production sound engineer or assistant designer for many years (and was, in fact, the sound engineer on that ESC Tempest tour), and Fergus O'Hare, who mixed many of Leonard's designs at the Donmar Warehouse and as a designer was nominated for this year's Drama Desk Award for his work on Elektra. The three have a number of explanations for their switch from independent freelance to employed corporate status, but Leonard offers the final summary: "For the past few years I've been doing shows and finding myself working with John and Fergus, with the three of us covering for each other on regular occasions. We all seemed to get on and to share a similar philosophy and approach to sound, so we decided to try to formalise that relationship a little."

The three also made a decision that the company should have its own premises rather than being based in one of their homes, and the reasoning behind that decision is clearer: domestic pressure on Leonard to relocate his vast collection of sound effects and recording equipment so that his spare bedroom could resume duties as a place to rest! Aura therefore set up home in Shoreditch; John Owens recalls that "Fergus used to live up the road and led us to this area. Originally we were shown the upper floor of where we are now which, though it had the appeal of big windows and daylight, was too big and would have been too hard to equip with an acoustically isolated recording studio." But the basement was available and was snapped up by the trio - though as Leonard ruefully notes this means that the 60 feet underground, non-air-conditioned Barbican has just been replaced by a six-foot-underground office with a draught.

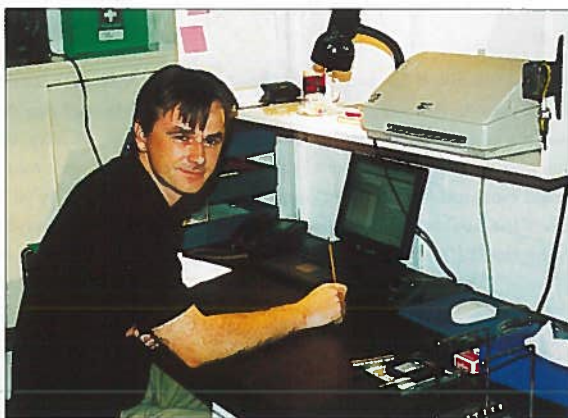
Though somewhat lacking in daylight, Aura's office is very well equipped in the area that counts, with a recording and effects production studio that includes a Yamaha 03D mixer,



Co-directors John Owens (left), who worked with Leonard on many projects and Fergus O'Hare (below), who mixed many of his designs

ProTools editing software, Spirit Absolute 4P monitors, a Tascam DA30 DAT recorder, a Denon D1050 Minidisk recorder and DN680 CD Player, Marantz CD620 Pro and HNB CDR850 CD recorders, Akai S3200, S6000 and S2000 samplers - as well as some vintage classics, including an EMS Synthi AKS analogue synthesiser. All this in a definitely 'upwardly mobile' area - Prince Charles' architectural advisory company is refurbishing the building next door to be their headquarters, though this is a noisy process that can disrupt delicate recordings sessions. Fortunately, the builders were persuaded to pause in their work for an earlier Monarch when Cate Blanchett - Queen Elizabeth 1st in the recent film - visited the studio to record voice-overs for the play Plenty.

Asked to define exactly what it is that Aura offers, the trio find it quite hard to be precise. There's sound design, of course, led by John Leonard but with the other two possessing similarly impressive CVs and with the three able to cover for each other when schedules clash, hence the "sound by . . . for Aura" credit that



now appears on their shows: the list for 1999 to date seems to include just about every straight play mounted in the West End. There's production sound engineering - getting the sound rigs in and up and working - for their own shows and for others, including for the recent transfer of Oklahoma! to the Lyceum Theatre. There are recreations of existing designs, including the transfers of The Iceman Cometh and The Blue Room to New York. There are one-off specials, such as the Internet sequence in the hit play Closer that John Owens designed and has re-created for the show's various

sell equipment. And they're not consultants. Though of course there are exceptions to these 'rules', as we shall see!

In everything it does, Aura's philosophy as a company is clearly just an extension of its directors' individual philosophies: to get the job done to the highest possible standard. John Leonard's favourite example of this is their habit of introducing theatre composers to "the joys of recording their music at really good recording studios, such as Abbey Road or the Angel Studios in Islington, with the best recording engineers and really good musicians." This has evolved because he "became bored of arriving at 'low cost' recording studios and finding that the tape machine didn't work or that the desk was noisy and that you ended up spending all of the time fixing those problems. It's actually much more economical to book a decent studio where you know everything will work." Leonard's selection of top-flight musicians to record the soundtracks that many shows now use is no doubt, partly due to being married to one, cellist Andrea Hess. But in this area, which many theatre companies consider to be a minefield of hidden expenses, Aura ease the way through the use of a Musician's Union approved fixer and by having a clear understanding of MU contracts (Leonard is himself a member of the MU, even though not strictly a musician).

The battle towards the highest quality has clearly been a long one, but is now being won - "the Almeida now automatically budget for music recording when planning a show" - with the results pleasing everyone. "I remember early recording sessions with Jonathan Dove, where he couldn't believe the standard of musicians we were getting to play his music," Leonard recalls. "I think it actually made him a little nervous. I had to explain that to the musicians it was just a job, though recently some have preferred to come and play for him in place of other work. More importantly, we've been hearing good things about the sound as a result; the audiences have been noticing the quality of the music."

Aura's experience means that they can chart a similarly smooth course through the complex world of copyright and licensing for using existing music in performances. And for less musical sounds they can also create just about any effect from their vast collections of both commercial sound effects disks and their own sound effects collection, some of these acquired

in odd locations at strange times of night and occasionally requiring explanations to bemused police officers! The sound effects are now located in Shoreditch (except for Leonard's vinyl collection, which hasn't yet made the move!), and there is talk of creating a range of Aura sound effects disks - though a glance at the company's hectic schedule quickly shows why nothing has yet come of this!

Production sound engineering is perhaps an area that shows the appeal of Aura to producers and production managers. Prior to the company's

And so their schedules roll on and on: four new designs in July alone, planning already underway for the Millennium Mystery Plays in York next year and still bigger projects up their sleeves.

formation, a producer might have hired Leonard to design the sound for a show, but would then have had to organise the equipment rental and a team to fit-up and operate the show. Now, as John Owens notes, Aura can manage the complete sound 'package' - "we can design the sound, but also organise the rig, arrange a team to install the show and provide an operator if required. This gives the production manager fewer things to worry about, while it's also good from our point of view because we can use people we know and trust on the show." In

fact, this type of planning is the area Owens seems to be thriving on, finding himself involved in and enjoying more and more of the company's management as Leonard and O'Hare concentrate on new sound designs. Support in this comes from an office manager, currently Lorraine Tozer, though she is due to take up a job at the Dome in the near future and a replacement is actively being sought. "It was a big decision to take on someone to be permanently in the office," Owens recalls, "but a lot of people have commented that was when we became a 'real' company rather than just another freelancer's answerphone."

The success of being 'real' has meant that Aura has now taken on another employee, sound designer and engineer Greg Clarke who has worked with Leonard and Owens at the National

Right, the latest recruit to the Aura fold - Greg Clarke



Youth Theatre and elsewhere and who, prior to joining the company, was touring as sound designer/engineer for Method & Madness Theatre Company. This meant another phase of 'growing up' as a company, but when Owens turns to his computer and calls up the completely jam-packed calendar page for the month Clarke started, the logic behind the appointment becomes clear. Despite being in the slightly unusual position of being one employee with three bosses, Clarke is clearly having a good time working on a wide range of projects from a show at the Chichester Festival Theatre to the Channel 4 Sitcom Festival at the Riverside Studios.

And the exceptions to the 'rules'? Well, Aura do have a small stock of equipment that they can rent to shows when needed - especially Amiga computers, which Leonard has been buying and hoarding for years, as until recently they were the only platform supporting the Richmond Sound Design MIDI software. Sales are also limited, but Aura are UK agents for Richmond Sound Design's products and MIDISolutions' various MIDI boxes, all of which the trio have been using for years - the 'sell what you preach' philosophy.

And consultancy? Well, in common with many who make their living actively 'doing' rather than passively 'telling', the Aura trio have a slightly limited amount of respect for many formal theatre consultants. But by the same token if someone asks for their opinion they are happy to offer it.

Glyndebourne asked for an opinion about their foldback system; Aura organised a shoot-out between a wide range of loudspeakers, let the Glyndebourne team decide for themselves which sounded most suitable for their purposes, then installed the new system; everyone seems happy with the result ("their sound operator is delighted," John Owens notes, "and because he

felt his opinion was valued he's now using the new system to the full, with all kinds of automated foldback changes during shows!")

Glyndebourne came back to ask for Aura's opinion on their paging and show relay system, which they've never been happy with; Owens is now working on a completely new system for them. "But we're not consultants," both Owens and Leonard then immediately insist! They're not strictly educators, either, but have taught at the Hong Kong Academy and at Guildhall,

encouraging many young sound designers from that course in particular; Leonard is also working on what may well be the definitive book on the subject of theatre sound design, though this has been pushed back slightly by a minor accident involving a PowerBook G3 and an unfortunate combination of software, a constant peril for those who live life at the cutting edge of technology.

And so their schedules roll on and on: four new designs in July alone, planning already underway for the Millennium Mystery Plays in York next year and still bigger projects up their sleeves. Unsurprisingly for someone who has achieved just about everything possible in a career in theatre, Leonard wants to try his skills on bigger projects, particularly 'multi-media' and overall environment projects. Aura have already carried out designs of this kind for the Tussauds Group in London and Warwick and are keen to do more, Leonard particularly enthusiastic having enjoyed the new Richmond Sound Design-controlled SpiderMan ride at Universal Studios.

Nesting amongst the sound equipment in Aura's studio are high quality Sony Professional television and video units, a clear sign of the new directions the company are aiming at. These are areas currently dominated by big American companies with flash Hollywood offices. But a dose of Aura's brand of down-to-earth practicality, technical expertise and artistic brilliance may be exactly what's called for. And once they've captured that potentially lucrative market, maybe Leonard will get the window and daylight he's been craving for so long!



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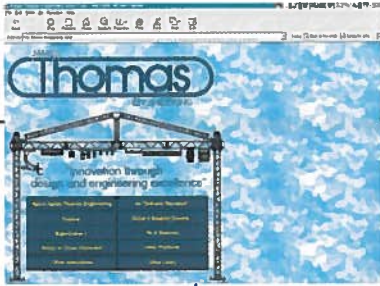
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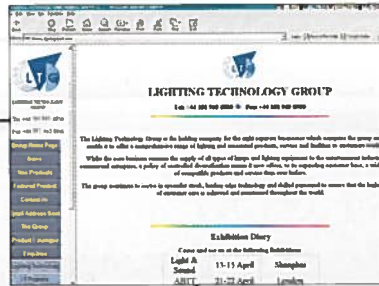
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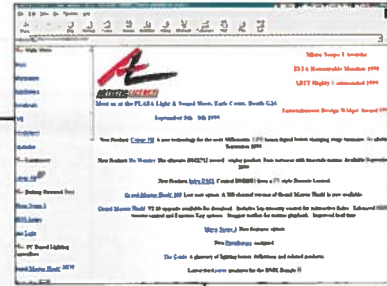
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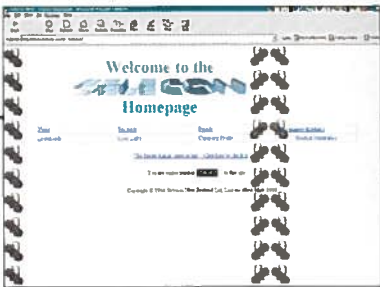
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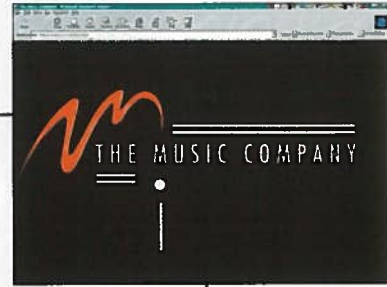
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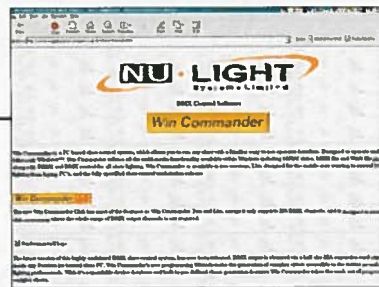
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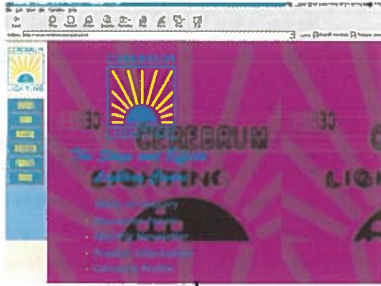
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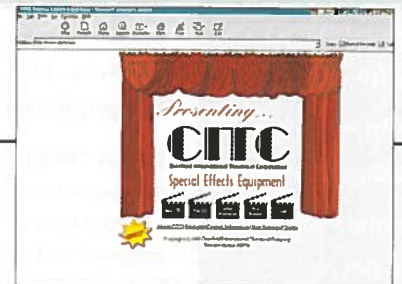
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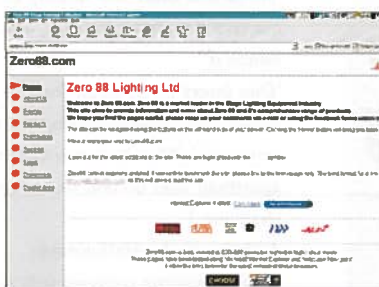
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John Watt

Second Take...

John Watt's view from beside the camera

When things are quiet, my instincts for this slightly autobiographical column are just to skip it and ask the editor to put in a note saying John Watt is on holiday this month. Holidays are something that

freelancers don't have of course - you either have a job in the diary or you don't. You may decide to go away if things are slack, but then you risk missing the big one while you're sunning yourself on some distant beach where the reality of VAT and Access bills seem strangely distant.

SLACK TIMES give you the chance to catch up with that heap of magazines and 'newsletters' from all those companies who must either have great

faith in your ability to purchase or hire vast quantities of the latest high-tech equipment or, more likely, have computerised mailing systems which neither know or care what you're up to. The magazines are both inspirational and depressing at the same time. In the pages of *L&S*, you'll find plenty of material to remind you that lighting for entertainment is alive and well. It's a bit like sexual harassment, which I have the same complaint about - I'm not getting any.

I WAS FASCINATED to read in *Lighting Dimensions* an equipment list for a film 'The Haunting' which included eight 18kW HMI Fresnels, 24 20kW Fresnels and 28 10kW

Fresnels, plus another 18 Baby 10s, 44 5Ks, 88 2Ks, etc. - quite a lot of etc.s actually, including a few things I had never even heard of. No wonder we feel like the poor relations in Television. Apart from the hire costs, how do they find enough time to hang all that stuff? If the stills are anything to go by, both the time and the money were well spent and I bet the DOP (Karl Walter Lindenlaub) had a ball.

IN ANOTHER edition of the same publication, I came across a few pages by Chris Watts (not the ALD one) describing his work on the *Teletubbies* which, surprisingly, is a location job using modest amounts of equipment to great effect. (I should clarify that it surprises me that it's all location, not that it's handled effectively!) I'll cling to the thought that Anne Woods who runs Rag Doll, the production company, vaguely remembers that someone called Watt used to light for her at Yorkshire Television about 20 years ago and engaged Chris by mistake. On the other hand, she may have remembered me very well, and made no mistake. Whichever way it was, he makes a very good job of those four cute faces made of felt under the changeable British weather, whilst others manage to make normal flesh look like felt, even without the weather to contend with - no names, just watch my eyes. A show like this must be the Television equivalent of a West End run, making great demands on one's stamina and staying power to keep it looking good.

THIS OUGHT TO BE awards country, but the fame is reserved for the producer who certainly deserves it (as Val Doonican once said, overnight success comes in 20 years flat) and who can no doubt find solace in the few millions the show has earned her. Yes, I'm biased, but don't expect me to put lighting anywhere but first on the running order. Television without lighting makes, at best, very poor radio. Spies tell me Chris is

holding up well under the strain, and the only visible effect of too much children's programming is a notice on his office door when he pops out for his favourite fish fingers and chips saying 'Gone for din dins, back when the little hand is on the two'.

VISION - a glossy piece of sales blurb - is published by Panasonic Broadcast and delivers both good and bad news. James Hunt, director of channel programming at Granada notes: "We are rewriting the rule books of how television productions are made." Good for him. "In each six hour shift for *Breeze* and *Men & Motors*, we have to produce four completed half-hour shows." Given the production values of the finished product (to call them shows is a bit dodgy under the trade descriptions act) I don't know what took them so long. Perhaps I'm being unfair to Mr Hunt, who adds that he expects to produce more than 5,000 hours of original programming this year. Well he's got to go some. Why not try 500 hours made well. You could even include half a day's lighting in your multi-skilled crew's training. You already do? You're kidding. The viewers might then start to appreciate what they could have, instead of what they are being weaned on. While we're at it, my dictionary says 'original' means 'novel, inventive, creative - not derivative or imitative'.

IT'S NOT CLEAR whether this 5,000 hours includes the seven hours a day shopping channel which currently reaches 4,000 customers from the potential million cabled up. They aim at middle England apparently - well I live there and I bet W H Smiths in Grantham High Street does at least that, even before the Christmas rush. Elsewhere, there's a plug for the Panasonic DV palmcorder, a new word for me, dreamed up no doubt by an agency unencumbered by my brand of lateral thinking, which would make me shy away from any product linked to a coconut. If it lives up to the praises heaped upon it by Colin Luke who uses it extensively for documentary work, then I want one. Some of Mr Luke's statements cause the odd eyebrow twitch.

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'One insert was shot entirely by production rather than technical people and it worked very well.' (Nice to know this form of apartheid lives on and not everything is changing.)

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'They're putting cameras into cars and driving them into walls.' Well I would certainly give them a coconut for that!

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Magic Moments



CONCERT/
TOURING

Mike Oldfield will always be known for Tubular Bells, but as Steve Moles found out at Birmingham NEC, he's out there trying to reinvent himself . . .

"It's like every day is Sunday," noted LD Mikey Howard. "It's so quiet in here you could be in a library." He was right too; the 6,000 or so at the NEC who had come to hear Oldfield all sat in reverential silence.

The opening act didn't help; the battered remnants of Fairground Attraction treated us to 35 minutes of acute melancholy - even Leonard Cohen would have felt inclined to the wrist and razor. But it was not to last. When Oldfield premiered Tubular Bells 3 in Horse Guards Parade last year, I gave it a relatively enthusiastic welcome. Not that it was as ground-breaking as 'Bells 1', but it was new and exciting, integrating modernist musical styles, even a bit of 'drum 'n' bass'. By Oldfield's standards, it was positively earth-shattering. What he's presenting a year later is even better. I listened in amazement as the first three numbers all struck a rockier note - yes, there was still the obligatory excursion into his signature guitar noodling - but this was relieved by some lively melodies.

These were proper tunes - structures we could all relate to. Oldfield even sang - though purists might dispute that. Admittedly, there were parts that really sounded dated - sometimes Oldfield's more indulgent aural landscapes have all the texture of flock wallpaper - very seventies, very kitsch. But the new stuff was 'of the moment' as they say, delightfully



rich without being gaudy. His big task now is to get it heard and sell it to a British public who have grown indifferent to his 'improvisation on a theme' style of creativity.

SOUND

The tour reached the UK just as it drew to a close, the NEC being the 24th show in an itinerary that has spent most of its time criss-crossing Spain and Germany. "Spain was amazing," continued Howard, "They're up on their feet screaming the moment he hits the stage." And the Spanish audiences aren't small. "We played lots of stadiums and big bull rings," confirmed front-of-house engineer Colin Norfield, with an obvious tone of amazement in his voice. "The Spanish were so noisy, especially at the start of the show. There were times when I thought about jacking it up (the sound level) just to get over them. But it's not the kind of music you want to hear loud. Besides, keeping it at the proper level eventually forces the crowd to quieten down and listen."

Norfield takes over the mixing bowl from Gary Bradshaw who has commitments with Simply Red, but the PA system has remained the same as for last summer's one-off - a V-dosc supplied by Westphalen Sound in Germany. When I'd seen Norfield on Toto earlier this year, he'd mentioned this job, and said how he was looking forward to trying this system for the first time - so how has it been? "Well, as far as the system goes I stand back and let Christian (Schmidt, from Westphalen) do his bit with the PA. I don't want to sound ignorant, but the truth is these guys know the system better than me - I just make slight EQ changes (Apex graphic parametric) to get it the way I like it."



'Just use blues' Oldfield said, and then indicated that he didn't want lighting cues following every cue in the music." Which didn't stop the tenacious lighting designer Mikey Howard pushing at the boundaries, and his strategy paid off.

The system for the NEC was small, even by V-dosc standards, comprising just six boxes hung per side, with three Arcs on the acute angles to catch the wide off-stage seats, and a pair of Arcs on the stage to cover the front few rows. "I liked the system straight away," Norfield continued. "It's small and clear. The size is an obvious plus when it comes to trucks and things, but it's what it can deliver that pleases me. Oldfield loves it." But Norfield has one reservation, and his wide experience - mixing for acts as varied as Pink Floyd to Cliff Richard - makes him well qualified to judge. "I still prefer a one-inch high end driver (specifically the one in the Turbosound Flashlight) - it's sweeter than the two-inch in the V-dosc." Schmidt then chimed in, pointing out that "the Turbo' crossover point is around 8k, whereas for the V-dosc it's around 1.3k," which makes direct comparison tricky, but character is everything, as they say.

Mostly, Norfield was a happy bunny: "Given the cross-section of venues we've played, the consistency of sound has been great," and then went on to single out a venue I'd not heard of before. "Watch out for the new indoor bull ring in San Sebastian. Nasty. Avoid it if you can."

Norfield has his beloved Yamaha PM 4000 out front, with just one small rack of toys, an Eventide Ultraharmoniser, Roland SDE330, a pair of SPX990s and - check this out - just a single two-channel Drawmer Gate and five BSS compressor/limiters. "Most of the effects are already done on stage. I just put a bit of symphonic on the acoustic guitar, a bit of vocal delay for Moonlight Shadow, and this really cavernous reverb effect (a full 15 seconds)."

And the Gate? "Ah, that's for the drum. There's a big orchestral bass drum up there, like a Military band drum. It just tends to resonate by itself from the ambient stage sound." Having said that, Norfield admitted the stage sound is not phenomenal: "the loudest thing up there is Mike's six Meyer wedges, so from that point of view my job is easy." But there was a hesitation in there: "The trouble with this show is you end up mixing sub groups sent from stage." A quick look at his desk confirms, just 34 inputs from a six-piece band. "I've got stereo mix from one set of

keys, all the kit comes as a stereo mix plus high-hat, two over heads and a drum effects channel separately. One of those 34 is just a vocal channel for Mike when he talks between songs. One minute there's piano coming down the keys channel, the next, there's prominent stabs of EMU in there. In a nutshell, there's lots of different things on the same channel, with varying characteristics."

Ian Newton on monitors (a veteran of the Horse Guards show) has similar issues: "There are pros and cons to doing things the Oldfield way - simpler because there's less inputs, but the fact that a lot of stuff comes to you pre-mixed can make it difficult." Like Norfield, he also alluded to the keyboard sends being an area for particular concern. "We did balance things in rehearsal, but mainly to what Mike wanted to hear. But live, that does mean there are occasions where a heavy synth' signal will come barking down the same channel as the gentle piano you've been listening to for the last few minutes." And then added, "we have had to make adjustments on tour."

Newton's monitor world is otherwise quite uncomplicated: an XL3 delivering as many mixes as there are band members. Apart from Oldfield's personal Meyer wedges there are just three other open speakers, V-dosc M112 wedges, one for the Bass player, and one each for Drums and Percussion (same musician, two positions). "They're the only 'listeners'," he said, "even then the high end of the wedge is turned off for the drummer. Everyone else has Shure in-ears." Newton is an adherent of the Shure system, but admitted he'd had his confidence shaken on this tour. "We did experience some drop-out in the early shows," he said. A strange occurrence in his experience - even stranger when you consider this is not the kind of band who run pell-mell around the stage striking poses, "but Shure did send someone out to fix it," presumably time and consistency will restore Newton's faith.

LIGHTING

Mikey Howard has experienced a period of unparalleled variety since his meister singers Oasis hung up their spurs for a long drink at the saloon of super-stardom. From Man

'o' War, to M People, via 'The Best Disco in Town' in the past year alone. "This has been the best thing I've done in ages, especially considering the boundaries I was given." Having been restricted to four 'lights on a stick' for Oldfield's first ever tour, I knew what he meant. "He wasn't interested, to put it bluntly. He wouldn't even let me have truss toners - 'just use blues' he said, and then indicated that he didn't want lighting cues following every cue in the music." Which didn't stop the tenacious Mikey Howard pushing at the boundaries, and his strategy paid off.

"Mike Oldfield quickly became interested, even as early as the second show he came out during sound check with his guitar on radio and said to me 'here's a bit I want you to do something with' and I was able to add orange for the first time." It was all the signal Howard needed: here was room for manoeuvre.

Howard's rig, supplied by LSD, is simple but well-loaded. Four truss triangles (20ft sides) hover overhead, with 24 Icons and 32 Washlights spread between them. The two downstage triangle sides have four bars of Pars, giving him a 24kW pastel front wash to use mainly between numbers as a general look. "After that remark of his I went ahead and slipped into what I usually do. I wrote a minimal lighting script, still keeping to his preferred blue theme, but I started to introduce variance with shades of colour."

Each of Howard's truss triangles has a white scrim cloth stretched across it. So too the back drop is a simple white scrim with overlaid black gauze: "I'd always thought of Oldfield's music as ideal for projection," he explained. "Unfortunately, there just wasn't the budget." That's a genuine plea, not just a lighting designer's wish-list talking, because he's right - from pastoral passages to ethereal voices, Oldfield's music is nothing if not allusory. "However, I have been

able to make up for it with lots of gobo work from the Icons." He also has another half-dozen of each type of moving lamp on the floor, which gave him added dimension to play with. "Plus, I've got four of Studio Due's City Colors across the back, two forward facing, two back. They are a great lamp in terms of simplicity of use for big colour washes." Howard works the backdrop and triangles for all they're worth: "He (Oldfield) takes exception to flashing or strobing on the stage. So long as I put it where he can't see it, I'm OK." Oldfield also eschews followspots but has allowed Howard a clutch of strategically-placed ETC Source Four profiles for band pick-ups. "It's surprising how they cut through, even with all the Icons on," he said.



Personally, I found it quite refreshing to witness a show that had a dominant single-colour light palette to it. Besides, Howard did actually deviate from blue more frequently than the statements above might have us believe. In the

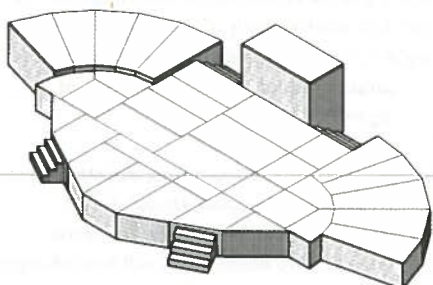
end, it seems it's thanks to the Spanish audience and his own audacity that Howard has been able to produce so many looks. "They (the Spanish) were just so lively, I had to do something. There are even two songs where I'm allowed movement, both very dark and moody, otherwise I do all my re-positioning between numbers. Simple and quick is the secret." He was still trying his luck on this evening. "You've got to really," he says, and I can't but agree with him.

Oldfield is an exacting master, rather strange for a man who's so obviously self-conscious on stage as to be painful. (Three enthusiastic fans prone to football terrace chants of 'come on you Michael' reduced him to 30 seconds of hands-on-hips

'what do I do now' bemusement). But as Norfield pointed out: "When an artist writes everything, engineers it, sings and plays, then they're obviously not idiots. I knew this was working well when Oldfield came out front one afternoon at the second or third venue. He listened to a couple of numbers and said 'Yep, that sounds good'.

That might sound faint praise to some, but a sentence containing more than three words from Oldfield is equivalent to half an hour with Ruby Wax.

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Ian Herbert, Asleep in the Stalls...

The sun has gone down, the anti-bite spray has been applied, and a hushed audience watches as a small figure appears on the open air stage. 'For those of you who are here for the first time, my name is Lloyd Richards, director of the National Playwrights' Conference.'

"What would interest you lot in particular is something that hardly gets noticed by the conference's participants: 15 plays, opening every other night in four performance spaces, put together by one production crew."

THUS BEGINS a speech which will be heard in much the same form every July evening for a month of performances at the Eugene O'Neill Theater Center in Waterford, Connecticut, and has indeed been heard since Lloyd Richards arrived in 1968. This year, at 80, he is finally stepping down from a post in which he has nurtured over 300 playwrights from the US (Thomas Babe, John Guare, Lee Blessing and above all August Wilson) and beyond (Lars Noren, Martin Sherman, Wole Soyinka, Derek Walcott).

THE NATIONAL PLAYWRIGHTS'

Conference is the most important of several annual events held at Waterford in the centre which bears the name of the town's most distinguished former resident, who grew up a mile or two down the road in Monte Cristo Cottage, setting for *Long Day's Journey Into Night*. The O'Neill centre itself has been built up by its modest founder, George C White, around the former home of the Hammond family, who used to chase the young Eugene off its beach. It has theatres both indoor and outdoor, which are

used to the full during the month-long conference. This year 15 plays were workshopped, which means they were given a four-day rehearsal period, two script-in-hand performances and a morning-after critique led by Lloyd Richards. In this, the play's director and dramaturg introduce it, then anyone who has seen it is allowed to comment - on the play alone, not the performances or staging - while the playwright listens and learns in silence. Because of the exceptionally charismatic charm and calm of Lloyd Richards, a strong tradition is in force that prevents any destructive criticism: every speech in the critique session will start with an obligatory opening remark to the effect that the play or playwright is the finest contribution to the culture of the Western World of the last 50 years, before the little word 'but' can be brought into play.

FOR NURTURE is what this month is about. The plays to be performed have been selected from a vast number of submissions - 1,600 this year - and, together with their authors, will be treated like visiting royalty before they go off to be polished and sent out into the world to earn royalties of their own. The aim is to provide an atmosphere where creativity can flourish, and where writers can test out ideas without the fear that some smart critic will try prematurely to chop them off at the knees. (There is, in fact, a parallel course for critics going on at the same time, under the wise supervision of former Los Angeles Times chief critic Dan Sullivan, but its members keep their heads well down in public session.) One surprising result of this supportive atmosphere is that the actors who are hired on Equity rates to workshop the texts will often return in a year or so with plays of their own, to claim the month's free accommodation and the modest \$1,000 stipend to which resident playwrights are entitled.

WHAT WOULD INTEREST YOU LOT in particular is something that hardly gets noticed by the conference's participants: 15 plays,

opening every other night in four performance spaces, put together by one production crew.

THE RULES WERE established early. The actors carry scripts, so that the writers can make changes up to the very last minute - and even between the two performances. The sets are minimal, made up largely from a set of 'modules' which have been used for years. They and any props are painted grey, while the actors provide their own costumes. Resident designer G W Mercier (who did *Juan Darien* for Julie Taymor) supplies a sketch for each show to indicate how a performance set might look, but at Waterford the whole impact of the evening comes down to the actors - and the lighting and sound design.

WHERE ACTORS CAN FALL back on their scripts - even though they manage to learn a vast amount of them in the limited time available - the lighting and sound plots are pretty well finished. Each acting space has a basic rig that would be enough for the average Fringe theatre, and with them lighting designer Tina Charney manages to create effective plots on the fly for 15 shows, in spite of the fact that each of them may change at a moment's notice. It's all made much easier by today's portable control boards and easily managed memory, but since Waterford doesn't have automated colour chnagers yet, there's a serious amount of gel-changing to cope with.

SOUND may be a little rougher, and some of it will be improvised by the actors, but the same pressures apply for Ed Brown and Ziggy Tomrich, whose department this is. Overall production supervision is in the hands of Tom Aberger, who has a handful of production assistants, each assigned to three or four shows, to liaise with the busy scene and prop shop - even modular grey materials have to be prepared and painted. (I noticed a splendid statue of a pink flamingo starring in the rehearsals for Ron Fitzgerald's very polished black comedy, *Cyclone*. By opening night it, too, was standard grey, along with the prop bottles of bourbon and packs of cigarettes.)

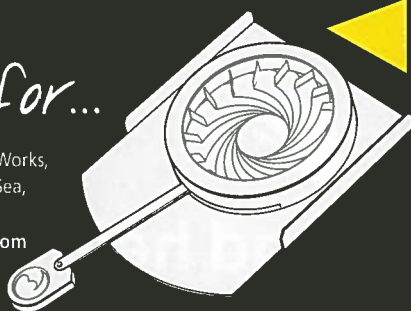
NEXT YEAR a new artistic director, James Houghton, takes over, though Lloyd Richards will be in evidence as director emeritus. No doubt James will have changes of his own to make, but he won't want to dig up too much of a plot which has seeded the American theatre scene with a steady crop of new plays for more than three decades. He'll certainly want to hold on to his unsung production team, whose efforts don't end with their gruelling daytime schedule: on my last night at this year's Conference, they were providing disco light and sound for a celebration party that went on well towards dawn.

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Pretty Birds All in a Row

Mike Mann caught up with the English National Ballet production of Tchaikovsky's Swan Lake on its first night at Sheffield Arena



THEATRE

Arena opera is becoming an accepted entertainment format, wooing all but the most staunch purists by its sheer scale. So what more natural step to take than to repeat the formula for ballet? Mike Mann caught up with the English National Ballet production of Tchaikovsky's *Swan Lake* on its first night at Sheffield Arena.

3D CINEMA

The most striking element of this English National Ballet production is the three-dimensional effect of performing on a thrust stage. Robert Jolley is deputy managing director at Raymond Gubbay, the tour's promoter. He believes strongly that the arena format is well suited to ballet: "It works, but in a very different way from a theatre production. Conventional proscenium stages give the choreography a very two-dimensional feel, but in an arena the audience is really seeing the whole effect. The visual impact is almost cinematic."

Jolley is also keen to point out that though the 21m wide x 24m deep stage (more than twice the area of a large theatre stage) is a bonus for the spectacle of 60 'swans' moving in unison, the seating plans of most arenas allow audiences to get closer to the principal dancers than they might think: "The intimate scenes really do work - if you think about it, the front row in an arena is only 20 feet from the edge of the stage - and the back row is not much further than the rear of a theatre balcony."

While the seating in Sheffield was draped off to reduce the arena's capacity by about one-third, ENB had just returned from a triumphant

tour of Australia and Hong Kong, where audiences had been larger. "There is much more of an established arena culture in Australia," explained Jolley, "whereas in the UK we are still going through a learning curve. The popularity of arena ballet is growing, thanks partly to the successful operas and musical productions in these big spaces."

It is strange to realise that arena ballet is not a new phenomenon, even in the conservative UK. As early as 1949, ENB's founding ballerina Alicia Markova was performing to audiences of 6,000 per night at Earls Court, and the company has since toured regularly, playing arenas and stadia throughout the world. The difference between Derek Deane's new production and its forebears is that *Swan Lake* is played to the whole audience, not just the seats facing the front of the stage. Indeed, with the absence of a pit (the orchestra is moved upstage to a raised platform), there is only the most informal divide between the stage itself and the audience, even at the sides of the dance floor. Deane cites several influences for his 3D choreography, including Cirque du Soleil and the opera *Carmen*, performed in the round at the Royal Albert Hall, where this tour began its life.

MAKING A POINT

Having provided sound reinforcement for *Swan Lake*'s 1997 season at the Albert Hall, Woking-based sound company B&H Production Services was asked to provide a design for the larger touring show. FOH engineer Phil Wright was able to use the same point-source loudspeaker concept as at the RAH, despite the increase in audience numbers. The single centre cluster comprised a mixture of self-powered and conventional Meyer cabinets, and was flown downstage of the orchestra 'loft' to avoid spillage. Apart from the main cluster (five long-throw MSL-4s, four MS-3As and eight MSL-2s as downfills), the only other enclosures were a pair of self-powered UPA-1Ps per side to help with imaging for the side seating and four 650-P subs, located under the orchestra. Each group of speakers is delayed separately and referenced to the conductor's position.

The microphone plot for the 70-piece orchestra is fairly straightforward; a single mic per desk, with additional spot



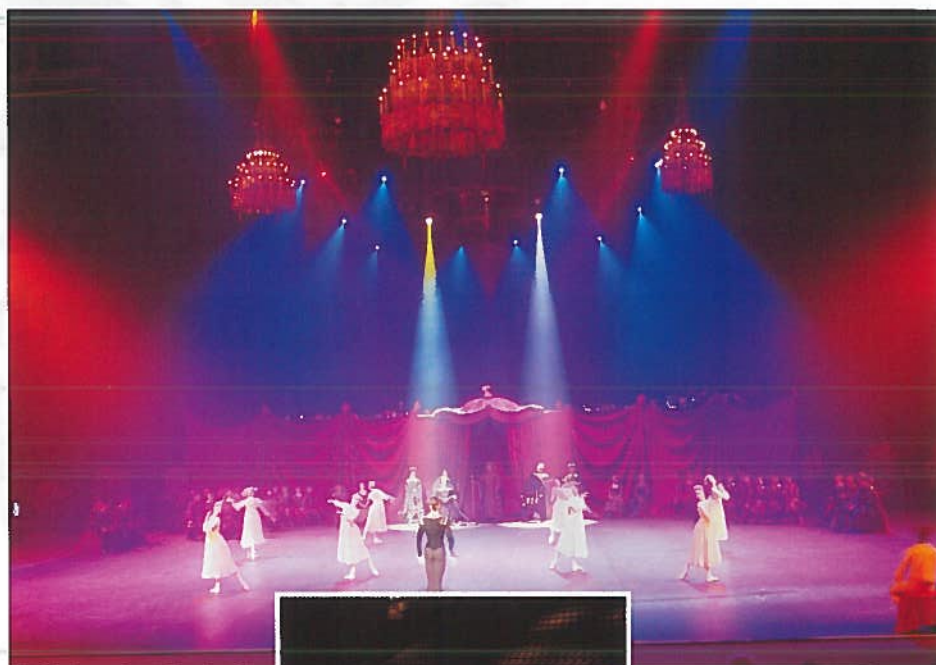
mics for percussion. AKG capsules are specified for the upper string sections; SE300B/CK91s for violins and violas, C460s for the cellos; while the basses are each provided with a Sennheiser MD421. Shure MX412s are used for the woodwind, while AKG again dominates the brass, with an assortment of C3000 and C414s. One apparent anomaly is the use of the diminutive C408 clip-on mic capsule for the 40" bass drum; however, Wright has his reasons for the unusual choice: "To be honest, a bass drum almost works acoustically on this scale. In any case, despite the fact that we have screened the drum quite carefully, every nearby mic picks up the low-end, so the C408 is used to give some extra attack." Control for the system comes from a Midas XL3, routed via a rack of BSS Varicurves and with a Meyer SIM II system keeping a watchful eye on various points around the arena.

CUTTING THE OVERHEADS

B&H has avoided making its presence too obvious; rather than a sound design credit, the company simply receives a mention in the programme for sound reinforcement. Wright, however, is not worried about this: "We wanted to keep it very subtle - for example, we have avoided using overheads on the orchestra so that there is no visual clue to what we are doing." I suggested that 1500 kilos of loudspeakers flying above the stage might be a give-away, but Wright pointed out that during the production's first outing, even the music critics had failed to spot the amplification!

So what were the main difficulties in reinforcing a large-scale orchestra in a series of arenas? "The big step that we're making here is to achieve a really big, warm sound at these levels - often, orchestral amplification is spoiled by the lack of bottom end. We're helped hugely with this by the directivity of the Meyer system's mid-range. One other challenge is that we have to manipulate the orchestral balance a fair amount - much of Tchaikovsky's scoring gives the best tunes to the smaller instruments, so we have to help out a little." On the subject of producing a realistic dynamic range, Wright is clear: "We have to take into account the high ambient noise; there is a huge moving light rig above the stage, and the noise of 60 dancers on the stage floor is enormous. We have to compromise the dynamics slightly. If not, people would simply not hear the quietest passages."

Wright maintains an approximate 15dB 'window' between minimum and maximum levels, which retains a degree of sensitivity to the score, but which also gives the audience some hard-hitting peaks. Further complications include the differences between an opera house pit band and a full-scale orchestra - and, of course, the acoustics of the arenas themselves. "Having the SIM system here is a godsend," claimed Wright, "especially with Sheffield Arena's useful tieline



*Above, less is more - lighting rather than scenery reigns
Inset, front-of-house engineer Phil Wright*



system; it's a simple matter to hook up the various mics we need to monitor the show."

Environmental changes can be extreme on this scale, especially with ballet productions, where dancers need a high ambient temperature in which to work. In an arena, this means that the audience is treated to higher-than normal temperatures, with the inevitable acoustic results. "As the show goes on, you can almost see the room response change in real-time!" Wright said.

MOVING EXPERIENCE

At least LD Howard Harrison cannot be accused of contributing too heavily to the heat of the moment; the UK tour was noticeable for having a stripped-down generics system, with a higher quota of moving lights being used to compensate. David Richardson is English national Ballet's chief electrician, and has been with the tour since its start. "In Australia, where we were performing in one venue each week, we used a system of 800 Par cans and only a few moving lights - but there we had a nine-hour focus each time. Over here, we've had to cut that down to four hours, as we're playing two venues per week." Richardson's system was supplied by LSD and comprises 25 Icons, 38 Studio Colors, 40 scrollers, 40 strobes and just (!) 400 Par cans. Control was via an Icon desk, with Mark Cooper at the controls, and house followspots were used at every venue on the tour. Richardson bemoaned the lack of good theatrical followspot freelancers around the UK. "Unfortunately, it's not like rock and roll where drivers and other techs can get involved - and we can't add another six or eight people to the tour crew."

Richardson commented on the mixture of backgrounds that LSD and ENB have brought to the production: "Touring with LSD works very well for us

- they have all the support we need, and that we never use in normal theatre tours; motors with 90 foot chains, for example, and of course all the trussing.

They also have people who have spent most of their working lives in arenas. The best thing is that there's none of the clichéd rock and roll attitude. I think that there's a much greater integration between rock and roll and classical work than most people realise. Of course, there are differences - we have to have a full dress rehearsal for each new venue, just to get the run-ons right, and we're accustomed to having less catering than you would find on a rock tour."

"Wright maintains an approximate 15dB 'window' between minimum and maximum levels, which retains a degree of sensitivity to the score, but which also gives the audience some hard-hitting peaks."

EMERGENCY EXITS

The physical distances involved in performing in an arena are clearly a major headache - in some cases, the time taken to get backstage from a down-stage exit necessitates changes to choreography. For lighting and set designers too, the absence of any front-of-house structure means having to find alternatives. Dave Richardson: "We have to use side-trusses to carry all the lamps that would normally be placed round the circle rails and in the boxes. Also, because there's nothing between the audience and the stage, we have to beware of sightlines."

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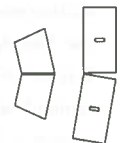
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For this production, the central trussing was flown to a height of 55 ft (17m), with a downward rake of upstage trusses over the orchestra. "It's quite a challenge to make a concrete-and-steel arena look like a theatre," commented Richardson, pointing out the 150 x 80ft black drape separating front-of-house from backstage. "We're more accustomed to touring with just the things we need upstage of the proscenium."

In terms of scenery, the Deane production is sparse, even by ballet standards - but this is in keeping with the concept of bringing the dancers closer to the audience. "It is very minimal," agreed Richardson. "At some points it's almost black scenery against a black backing! The stage for the Australian tour was a little larger, and had a couple of lakes on it, but here we're more or less using lighting instead of scenery." Upstage, the orchestra loft was dressed as either the lakeside trees or a castle interior, where Peter Farmer's rich velvet swags and wedding-cake chandeliers added a tone of opulence to the bare stage.

FINGERS CROSSED

The 6,000-odd audience in Sheffield welcomed this production of Swan Lake warmly - but is this kind of touring commercially attractive? "Arena tours for classical shows simply soak up people," explained Dave Richardson. "Quite

Left, The single centre cluster comprised a mixture of self-powered and conventional Meyer cabinets

Inset, Pit Stop - the mic placement is visually subtle



apart from the company itself, the number of crew required for quick fit-ups and get-outs is immense." One concession to the accountants has been the use of regional orchestras rather than touring a single band. For the Sheffield, Manchester and Birmingham dates, Gubbay's own Manchester Concert Orchestra was called upon to perform.

Phil Wright suggests that arenas could upgrade their facilities to reduce the cost of this type of touring; "Opera and ballet shows need much better backstage facilities than sports events - for instance, we have to install a show relay and calls system in 16 locations every time we get to a new venue. This would be so simple for the arenas themselves to do." I asked Robert Jolley if the UK tour would work financially, given the limited run in each of the five cities: "Fingers crossed, yes. The cost of touring a production on this scale is enormous - but we're breaking new ground," he said. "Well, someone has to!"

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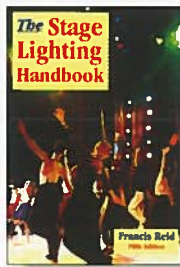
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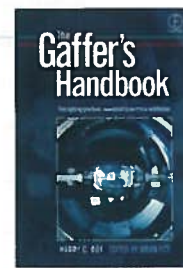
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In Profile...

L&SI Talks to the Industry Trend-setters

Chris Wade-Evans (known throughout the business as Wevans) has reached what might be viewed as the pinnacle of his career, and has just been awarded Performance Magazine's Stage Monitor Engineer award for the second year running.

His memories of starting in the music business are clear, however: "Like most engineers, the first mixing I did was unpaid. A school friend (Paul Addison - now mixing for the Beastie Boys) had a band, and one night the guy who normally did their sound wasn't there, so I had a go. They said that the band sounded better than usual, and I was given the job! During the late seventies, Paul moved to Durham and I went to help build up a basic PA system for them, with a lot of help from Mike Gentle (now boss of EMO)." With a limited budget, everything had to be built from scratch.

Having spent the last two years on the road mixing monitors for the Rolling Stones, engineer Chris Wade-Evans is ready for a break. But not before talking to L&SI...



monitors, he tried to have me kicked off the show - but I stuck it out."

Wevans' girlfriend at that time approached Tony Blanc, FOH engineer at Williams Brothers, on

behalf of her boyfriend. "I was too nervous," recalls Wevans, "but I got the job mixing monitors for a lot of punk bands - UK Subs, the Damned, and regular gigs at the Lyceum. I even did the first heterosexual night at Heaven!"

A fortuitous break came in 1983, when Mick Williams, who was at that time working with TFA, needed to build and supply some additional equipment for a Showco tour with the Rolling Stones. "I only went to help check the delay speakers, but I ended up fixing a couple of desks and generally helping out." Michael Ahern, then production manager for the Stones, offered Wevans one or two small projects, amongst which were shows with his other clients - David Bowie and Bob Dylan. Ahern suggested that he took over the vacant position of Mick Jagger's monitor engineer for a forthcoming solo tour - which inevitably led to working with the rest of the band. Wevans has now been with the Stones for 11 years, during which period he has had stints with George Michael, Madness, and Prince, as well as handling large-scale one-off events around the world.

The road to success is never quite that simple, however. Wevans recalls a few of his worst moments: "I had a console power supply fail on a David Bowie tour - and all the VCAs locked at

+12dB! It stopped the show until we could get the support band's desk hooked up. During one of the Rolling Stones shows, all power failed after Keith Richards' first chord! Fingers crossed, I've never actually caused that sort of failure myself - but when you consider the damage that a single drop of water could do, it's amazing that any of it works." Wevans professes to being rigorous about checking equipment and referencing speakers and mics to each other. "If I have consistency, it's easier to spot a problem. If I find myself mucking around with the EQ for just one wedge, it'll be something wrong with the speaker. It's not good enough to turn up the high amp on one wedge because it's not as bright as the others."

This dedication has also found an outlet through Wevans' involvement with several equipment designers, including Sony, Cadac and Firehouse Productions, where he co-designed a range of wedges with Bryan Olsen.

So did Wevans ever feel the urge to mix out front? "No, not really - though I have done a couple of shows as FOH engineer. For a start, there are fewer people chasing monitor jobs, but also, it's interesting trying to boil down this complicated and vast set-up so that it's manageable in real-time." Evans has obviously mastered his art, as he admits to remaining seated at his desk for 90% of the time during the Stones most recent 'Bridges to Babylon' tour, despite the presence of no less than 96 monitors across two stages! Clearly the relationship which binds a monitor engineer to any band is a high-pressure one, but Wevans takes the rough with the smooth. "I've been dragged out on stage to be fired in front of an audience," he recalls, "and I've had the odd mic stand hurled at me. But we always make up in the end!" ■

Lighting & Sound

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