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8-11 SEPTEMBER 1996
SHOW PREVIEW ISSUE



THE MINACK THEATRE ON CORNWALL'S SOUTH COAST

- PLASA 96 Show Preview: Product Launch Highlights
- Installation in Opryland: Music City USA
- Live at Wembley Stadium with Bryan Adams
- On Tour with Ray Charles, Van Morrison and Chris de Burgh
- Theatre on the Rocks: the Minack in Cornwall
- Profile on Peavey Electronics
- Weekend Viewing: TFI Friday and Saturday Live

PLASA

SEPTEMBER 1996



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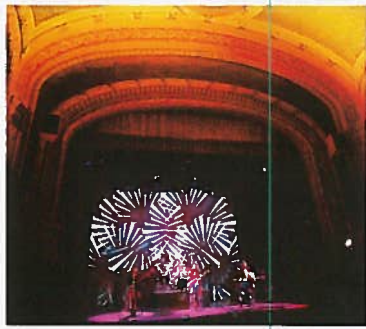
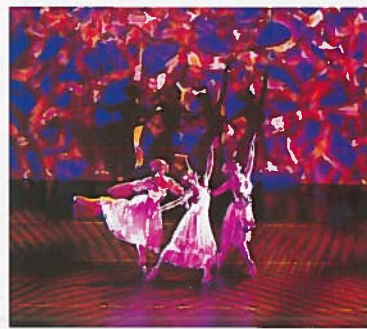
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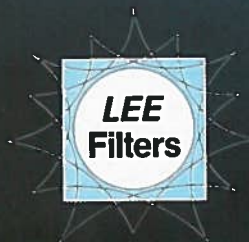
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LIGHTING+ SOUND International

SEPTEMBER 1996

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Editor: John Offord

Deputy Editor: Ruth Rossington

Associate Editor: Tony Gottelier

Assistant Editor: Lee Baldock

Advertisement Manager: Barry Howse

Production Manager: Nicola Evenden

Production/subscriptions: Sheila Bartholomew

Advertising Co-ordinator: Jane Cockburn

Published from the PLASA Office: 7 Highlight House, St Leonards Road, Eastbourne, East Sussex BN21 3UH England
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German Utility Model Reg. No. G9312884 3 and G9314158 5.

All other worldwide patents granted or pending.

PLASA 96 - The Countdown Begins in Earnest

By the time you read this, there will be little over a week to go before the twentieth PLASA Show officially opens at Earls Court 1. Given the extensive coverage of the event, you will have seen the pre-show information and will almost certainly have made your mind up whether you will be visiting Earls Court or not. If you have yet to decide, let us throw a few thoughts in your direction.

Opportunities in this industry are few and far between; most companies and individuals have to make their own luck and take advantage of openings that come their way. With the PLASA Show, that process is given a helping-hand. No other exhibition can claim to have successfully brought together all strands of the entertainment technology industry under one roof. Though the PLASA Show will certainly be large (the exhibition features over 300 companies), it won't be overpowering. There will be time to enjoy renewing old acquaintances and there will also be plenty of opportunity to talk face-to-face with many of the decision makers in the industry. You may even get a chance to influence their future designs.

To achieve the equivalent level of contacts, see the myriad of products and services on offer and touch base with customers and friends worldwide, would cost you thousands and thousands if you decided to do it the hard way. At £5.00 pre-registration (or £10.00 on the door), PLASA makes it easy, saving you time and energy hot-footing it around the world. What's more, it lasts just four days, so whilst it may make for a fairly hectic show if you're to see everything, it does mean that you don't have to spend more valuable time than necessary away from your office.



Earls Court 1 is already flagged up with the PLASA image in readiness for what promises to be a ground-breaking show.

If you're still not convinced that the effort is worth it, then take a look at the pages of this magazine. Starting on page 81, we list just some of the product launches taking place at the Show, whilst on page 131, you can find details of the seminar programme and events planned for the Stage Area. On page 8, we give you details of just some of the many special events and parties crammed into the itinerary that make both the days and nights of PLASA go with a swing.

Throughout the news pages and features there are also many references to the Show, which seem to indicate that everybody is talking about PLASA and is looking forward to being part of the industry event of the year. Don't miss out!

The PLASA Show opens on Sunday 8th September and runs through to Wednesday 11th September. These are the most vital four days in your year - make the most of them. For further details on attending or last-minute stand space, contact Bridget Beaurepaire at P&O Events, telephone 0171-370 8229.

Three Makes a Crowd

Running alongside the PLASA Show are both the **Presentation Technology** and **British Music Fair** exhibitions. At the BMF, visitors will find all the latest equipment on display, from musical instruments and amplification equipment to computer hardware and software. Presentation Technology, meanwhile, will bring together all the new technologies springing up relating to multi-media, visual presentation and the themed and leisure industries.

As with PLASA, the reasons for making your way to Earls Court in September do not end with the exhibitor stands. A plethora of activities take place around the two shows - from valuable networking opportunities to entertaining parties, from special areas and seminars to dedicated stage activities, including a laser show, which will demonstrate the application of lasers in a leisure environment.

Further details on all events at Earls Court can be obtained from Bridget Beaurepaire at P&O Events, telephone 0171-370 8229.

ARRI Packs a Punch



When ARRI invites you to test the effectiveness of some of their most powerful lights, they do it in style. Pictured above is the impressive night-time illumination display they hosted at Kloster Seeon, a former Monastery, in Germany.

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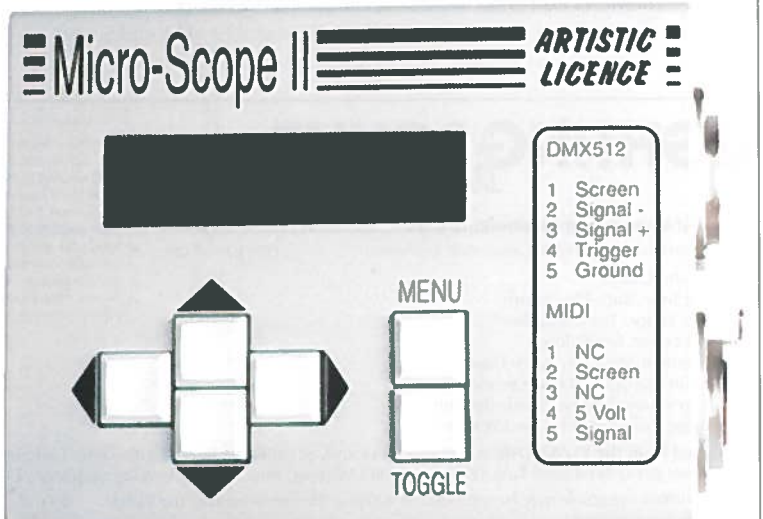
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Party On at PLASA 96

Once again, there are a host of special events taking place throughout the PLASA Show this year, so here's a run-down of what you can expect to find . . .

- PLASA have teamed up with some of London's top venues to bring you exclusive offers for great nights out. The following restaurants will give diners a free bottle of wine on presentation of a special voucher, available from the information stand at the Show. Local to Earls Court there is **Chutney Mary's** (+44 171 351 3113), or **Tusc** (+44 171 373 9082); in the West End - **Soho Soho** (+44 171 494 3491), **Bertorelli's** in Covent Garden (+44 171 836 3969) or in Charlotte Street (+44 171 636 4174).

- Club Mondiale are sponsoring three after-hours bars which will be open every night until late, and there are some great special events. As a visitor to PLASA, you'll be on the guest list. Further details will be available at the Show.

- On Sunday, the Shepherd's Bush Empire will be the scene for the Avolites, Live!, Spot Co, JEM and Martin Professional party. Live music will be provided by the Dharmas. Contact Steve Warren at Avolites on +44 181 965 8522 or Robyn Peirce at Live! Magazine on +44 1322 660070.

- Also on Sunday, at the London Hilton Hotel, advances in the industry will be celebrated by the DI Entertainment Technology Awards.

- Monday night sees the DI Club and Music Awards at the Hippodrome. For information on this, and the Entertainment Technology Awards, contact Teresa Pilgrim on +44 1223 660070.

- On Tuesday night, it's the turn of Clay Paky and Pulsar to provide the entertainment, this year in the form of the Illuminate Club Party at the Limelight club. This party is also in association with Club Mondiale. For more information, contact Jane Dorling at Pulsar on +44 1223 366798.

During show hours, there will be a number of special attractions for the visitor . . .

- The Gemini/DJ Magazine DJ competition will be taking place on the first day of the Show, Sunday 8th September. The competition is being held on a purpose-built stage as one of the feature areas that PLASA has organised to help visitors get the most out of their visit. The Gemini/DJ Magazine competition will enable amateur DJs from around the country to show off their skills in front of leading international DJs and also pick up some useful prizes. If you would like to enter the competition, you must demonstrate your DJ'ing skills to Rob Peck on the Gemini stand before midday on Sunday, and if you are good enough, you will be put forward for the competition.

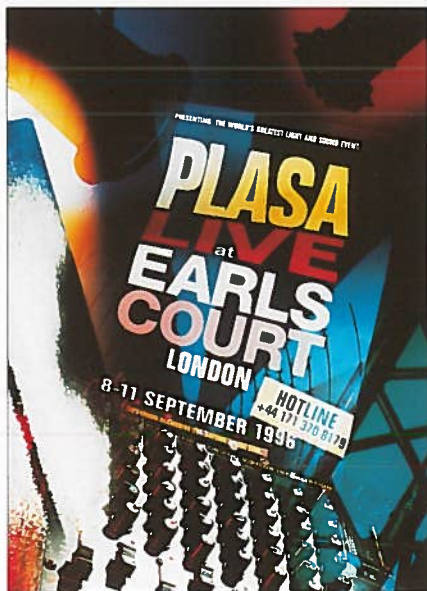
Each entrant will be given seven minutes to mix, with four entrants playing every hour, along with one guest DJ per hour, who will play for 15 minutes, and also make up the judging team. Three such heats will take place, with the final running from 4-5pm on the Sunday afternoon. Prizes will include two

decks, headphones, stickphones, slip-mats and other assorted goodies.

- Visitors at PLASA this year can also experience the latest in Internet Technology thanks to Motorola, who are sponsoring the Internet Cafe and Bar at the Show. The **Motorola Internet Bar** will provide visitors with access to the Internet using the latest Motorola equipment.

James Brooks-Ward, P&O Events show director for the PLASA, commented: "We want to give visitors to the show the opportunity to see what the Internet can do for them. The Motorola Internet Cafe is a great opportunity for people in our industry to see how technologies are converging, and we are pleased to be teaming up with Motorola to give our visitors the chance to experience this incredible medium."

- Demonstrations of PLASA's own World Wide Web site will also be conducted on the PLASA Publishing stand, E6.



The Tail of Technology Wagging the Dog?

The newspapers have been full of stories of how the failure of a tiny rivet on Robert Lepage's *Elsinore*, the keynote performance of the Edinburgh Festival, caused the showpiece theatre event to be abandoned without a single performance and left the Festival organisers £100,000 out of pocket. Technicians struggled for 48 hours to repair the rivet, a critical part of a large revolving mechanical globe central to the show, but eventually admitted defeat, leaving no time to fly in a replacement part from Canada.

The high-tech show, which promised 'dazzling technology' with 'horizontal platforms that become vertical walls' and 'perspectives that constantly change shape', has been on a world tour for six months and is due to be shown at the National Theatre at the end of the year. It has been beset by technical problems; the complex mechanical equipment has broken down on more than one occasion and a show in America was cancelled.

Not surprisingly, the problems have led to a spate of articles denouncing the increasing use of technology in theatrical presentations. Theatre critic Charles Spencer, writing in *The Daily Telegraph*, questions whether any show should be so reliant on technology, citing the problems experienced by *Sunset Boulevard* when electronic equipment picked up radio signals, and the more recent problems with power failure on *Martin Guerre*. Spencer feels that the famous definition of theatre as "two planks and a passion" is too often ignored and notes what he describes as "an escalating addition to technology" which should "be a servant of the theatre, not a capricious tyrant".

In truth, considering the increasing sophistication of the technology in use, instances of equipment bringing the show to a halt are thankfully rare, and it may be the case that the technology is sometimes the scapegoat - lack of funding, poor audience attendance or members of the cast going walkabout are more likely to close the show.

Most in the entertainment technology industry would agree that an appropriate balance must always be achieved, but what Spencer conveniently forgets is how technology has enhanced a wide number of productions and that much of the demand for these effects is increasingly audience-led.

The Spot Co

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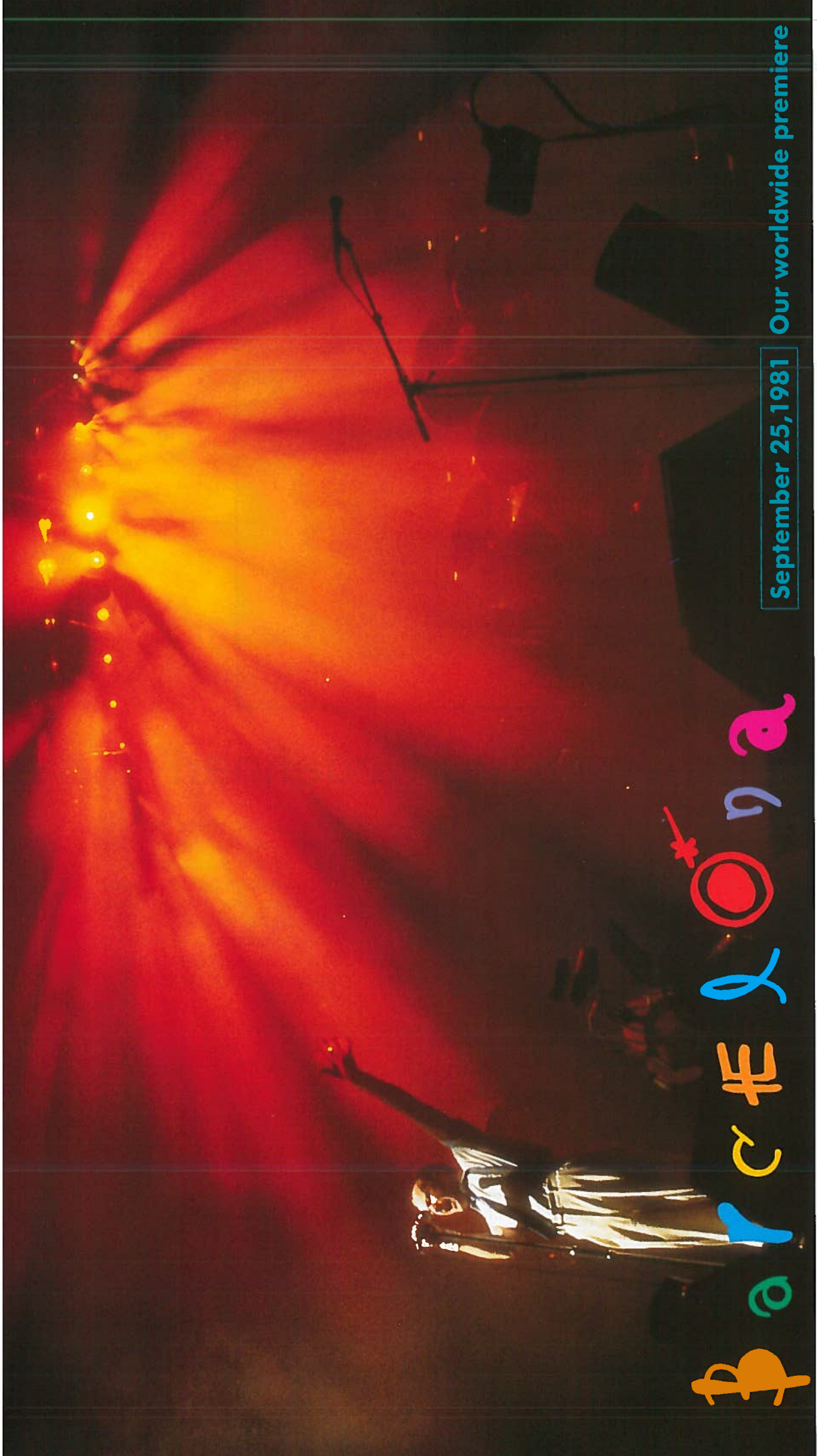
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Rank Organisation to Sell Strand Lighting



Strand's Isleworth headquarters.

On 8th August, The Rank Organisation announced that it is to sell its Precision Industries businesses, including Strand Lighting, as part of a strategic restructuring of the group.

It is Rank's intention to sell the businesses as going concerns to one purchaser, and considerable interest has already been shown by a financial buyer who has expressed a desire to develop the companies further by investing in their future. However, no agreement has been signed to date. In the meantime, Strand Lighting will continue to operate and trade normally as part of The Rank Organisation.

Strand assert that industry speculation regarding the acquisition of the company by various other lighting companies are without foundation, as are any suggestions that the company is withdrawing from any of its markets.

KT Oil the Wheels for Grease

The new production of the hit musical Grease, currently touring the UK, features a state-of-the-art sound system as specified by rental company Autograph Sound in conjunction with sound designer Bobby Aitken.

In the heart of the system is a combination of Klark Teknik's new DN7204 and DN7103 digital delays with EQ/limiting, controlling pre-delays for the band as it moves up and down at the back of the stage, and delays for the vocal subgroups depending on the position of the cast during the show. Individual audio 'scenes' called up in real-time from a Meyer SIM system running on a TADAC computer with Autograph's proprietary software, change delay times as appropriate on the six KT units via MIDI.

Scenes are spread throughout the memories of all six modules. This necessitated engineers from Klark Teknik's Kidderminster plant working on-site with Aitken to modify the MIDI configuration to allow switching between units as well as individual memory settings. "The design of the overall sound system meant we had to look for a way of linking the memories of each unit, creating a MIDI through option allowing access to any unit of memory in any machine at any time," Klark Teknik's Dave Webster told L+SI. "This modification is now in place and has proved so successful that all KT delays will now include this additional option to the MIDI control system." The tour opened mid-May in Manchester, where it is expected to remain for the next few months.

FAX YOUR NEWS TO L+SI ON (01323) 646905

Gush Closes

Following our article in July on the opening of the GUSH nightclub, news has reached the offices of L+SI that chartered accountants Buchler Phillips have been appointed administrative receivers for Constantia Investments Limited (trading as Gush).

The club is currently closed and many of the contractors who worked on the project, including Masdar Electronics, Mushroom Lighting, Sysco and Kelsey Acoustics have not been paid. Buchler Phillips are currently trying to negotiate the sale of the business as a going concern.

Aviator in Oslo

Following a lengthy selection process, Celco were chosen to supply an Aviator R1000, their 1000 control channel desk, to the Oslo Concert Hall as part of a major refit.

The 2,000-hall hosts a wide variety of performance styles, as well as being home to the famous Oslo Philharmonic Orchestra. The installation was confirmed by Arild Brandt, of Celco's Norwegian dealers Art Light, who installed the desk in August.

The R1000 will operate mostly generic lighting, intelligent lighting (High End Cyberlights, Amptown PMLs) and colour changers (Rainbow Scrollers and Wybron Colorams).

In the same month, Celco confirmed a further Aviator R1000 EPX sale to new Korean rental company Seo Jin Respia Co. The sale was made through Celco distributor AC Lighting.

VL Europe Gigs

Vari-Lite Europe Group are enjoying a busy summer/autumn season of work for a fast expanding roster of clients.

Brilliant Stages have just completed a large set (of Pink Floyd proportions) for Mr Children in Tokyo. Commissioned by Shimizu, designed by Mark Fisher and with lighting by Patrick Woodroffe, the set includes motion control for moving overhead lighting and on-stage effects. Brilliant's Tony Bower, Gareth Williams and Warren Steadman are en route to Tokyo to oversee its set up, and Vari-Lite Asia will provide the automated luminaires.

CPL, Vari-Lite and Brilliant Stages are also working together on the European and American tour for The Cure, as well as combining their talents for Heathcliff. The show, designed by Andy Bridge (LD), Alistair Grant (assistant LD), and Joe Yanek (set) was won against keen competition from traditional theatrical set building companies on the basis of Brilliant Stages' expertise in the design and build of touring sets. Theatre Projects, Brilliant Stages and Vari-Lite Europe are again working together on this tour.

Meanwhile ClubMTV, designed by Alex Gurdon and currently on tour throughout Europe, has been co-ordinated by Vari-Lite Europe with equipment supplied by local operations. Finally, in conjunction with Blacklight, VL Europe are supplying 50 VL5 wash luminaires to the Edinburgh Military Tattoo, designed by Patrick Murray.

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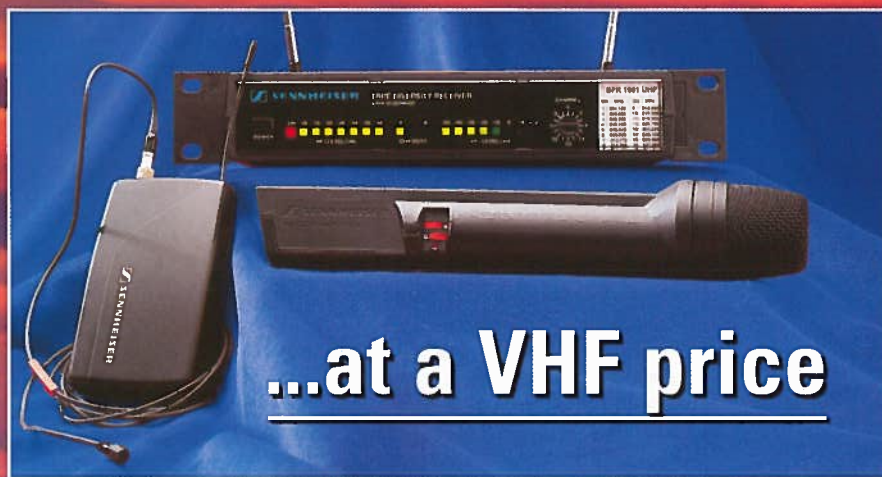
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Martin's Wavefront 8 at the UEA, Norwich

With more than 1,000 units sold in the first 12 months following its March 1995 launch, the Wavefront 8 loudspeaker system rates among Martin Audio's greatest commercial successes. Most sales have been abroad to venues such as Amsterdam's Milky Way club, but 10 stacks were recently commissioned by the University of East Anglia as part of a £60,000 audio contract with Martin's exclusive UK Wavefront 8 dealer, LMC.

The 10-stack W8 and W8S system, which is run in conjunction with Martin MX4 controllers and a range of Crest amplification, is currently operating in two areas of the Students' Union building: the 1000-capacity main hall and a sectioned-off area of the refectory. The deal was a progression from LMC's supply of Crest-powered EAW equipment and BSS graphics to The Waterfront, the Norwich club run as a joint venture by the UEA and local authorities. Previously, the UEA operated its events by hiring PAs from a number of local rental companies. By early 1995, the UEA began to consider the constant financial outlay for equipment hire to be prohibitive and contacted Dave Wiggins, LMC's sales manager to investigate the possibility of supplying a permanent system.

It was at last September's PLASA show that LMC and Martin Audio 'rang the UEA's bell' with a demonstration of the Wavefront 8, but it wasn't until February this year that the expenditure was finally approved, and the equipment was commissioned in April.

Wiggins, who runs his sales operation from the company's Acton base, expands: "We have been Martin dealers since we started in 1987, but our agreement is that we handle the W8 exclusively in the UK. With the recent addition of a Birmingham office we now have better geographical coverage of the UK and are able to demonstrate the system to a wider number of people."

In Wiggins' mind, the system of choice for the UEA was always going to be Wavefront 8: "The original spec was just for the one big hall and the quote reflected that. But Nick Raines from the UEA asked if it would be possible to split it into two systems, but retaining the ability to run it all together as one. That was a perfectly

straightforward request, and it just meant adding a smaller amp rack. In the refectory there is a partition wall and the room there gets used as a small venue for techno nights, with a two-stack system (one W8T and one W8S per side), a simple amp rack, a DJ mixer and a small console."

Wiggins describes the Martin MX4 system controller as a 'posh crossover'. On the market for several years now, the MX4 is a 1U controller with on-board limiting, which runs up to three-way stereo or four-way mono. "It's a clever piece of kit. You can configure it with internal cards to do whatever is required. When you buy a Martin system and opt to control it with MX4s you get the cards supplied with the system.

"They have very high quality limiters and part of the design brief for the UEA system was that the students should not be allowed to blow it up. Part of our job was to set the limiters on the MX4s according to the specifications of the Crest amplifiers. This ensures that the system can be run absolutely flat out forever without blowing a driver or damaging an amp."

With the quality of the bottom end of the frequency range more crucial than ever in the current dance market, Wiggins is pleased to hear consistent reports of the Wavefront 8S's performance in this area. "It has a lot to do with the hybrid sub box which has a mixture of horn-loaded and direct radiating drivers, and it's a real step forward in sub design. It produces an enormous amount of volume for its size.

"Because it has twin drivers with separate access to each, you can split the sub box up and run it actively rather than just passively. It will also take EQ and if a DJ feels he needs more EQ at the bottom end, the boxes will tolerate that very well.

"When we visited UEA to demonstrate a four-stack system in a small room, a DJ was working away. He started cueing up, and then turned round and asked if we could turn the system down because he couldn't hear himself think, commenting 'it's this bottom end, man, it's huge!'. That's the first time I've ever heard a DJ complain about the noise level."

Mark Cunningham



Dave Wiggins of LMC (left), Martin Audio's Martin Kelly (centre) and Jeff Lowther of hire company SRS (supplier of Allen & Heath control console) in front of the UEA's 10 stack Wavefront 8s.

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BEDA Awards

The UK nightclub industry celebrated in style recently at the 1996 Molson BEDA Awards, held at the Birmingham Metropole Hotel in late June. Since its inception in 1992, the Award ceremony has become the highlight of the UK club industry's social calendar, and its closest equivalent to an 'Oscars style' event.

The event was hosted by Bob Monkhouse with assistance from nightclub entrepreneur Peter Stringfellow and soap stars Michelle Collins (aka Cindy Beale of Eastenders) and Ian Kelsey (aka Dave Glover of Emmerdale).

This year's ceremony was the most successful to date, with over 1,000 industry figures gathering under one roof to wine and dine, then celebrate the achievements of the club industry as the Awards were presented. The structure of this year's Awards offered recognition to all sectors of the industry: the clubs themselves, their managers and operators, those on the technical/design supply side of the industry and performers.

Among the many winners on the installation front were Wynne Willson Gottelier for their installation at the Scottish Ministry of Sin and Creative Teknikal Services for their work at Visage/Ethos in Hemel Hempstead, whilst Lynx



Visage/Ethos at Hemel Hempstead - national club award winner at the recent BEDA Awards. photo Mondiale Publishing

Lighting, The Music Company, Leicester Sound & Light and RS Sound & Light shared the runners-up honours. Venues across the country picked up regional awards including Hamilton Palace (Hamilton), Lexington Avenue (Hull), Dome II (Birmingham) and Visage/Ethos (Hemel Hempstead), which was also voted overall national winner

On the product front, Clay Paky picked up the award for Sound/Light Product of the Year with the Golden Scan 3, whilst Cloud, Tarm, JBL and Martin Professional were runners-up.

LOOK OUT FOR THE PLASA AWARDS AT ECI

New Leadership at Soundcraft

Soundcraft Electronics has appointed Alison Brett (pictured) as managing director. For the last three years, Brett has held the position of marketing and business development director and her appointment reflects Soundcraft's commitment to develop-



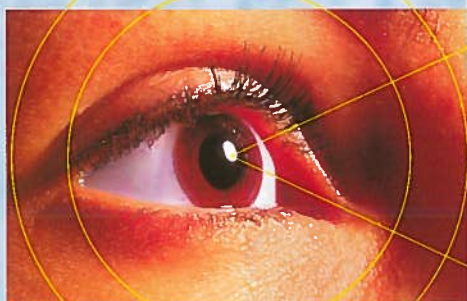
ing its business in line with the requirements of the marketplace. She takes up the appointment at a critical time in the company's history as they prepare to make a technological leap forward with the development of the Broadway desk's assignable technology. In the USA, the sales operation is being comprehensively restructured, starting with its move to Nashville, Tennessee.

Web News

Solid State Logic has gone on-line with its own WWW site (<http://www.solid-state-logic.com>). Amongst the SSL pages, web surfers can find information on all the latest products from the music, recording & film, and broadcast & post divisions of the company.

QSC is also on the web where, alongside current news and information, visitors to the site can access technical specifications and view QSC products (<http://www.qscaudio.com>).

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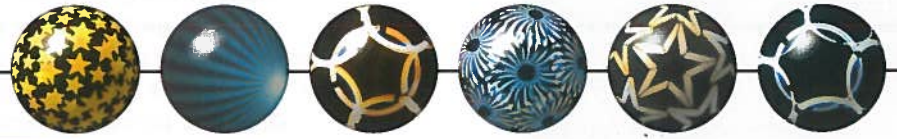
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MIDI at 'Nite Klub'

Sunderland's 'Nite Klub', a £300,000 renovation of the old Locarno Ballroom, opened recently to reveal one of the largest club sound systems in the North East, designed by Autograph Sound's John Adeleke in conjunction with Birmingham contractor 2007 Sound & Light. The Nite Klub is also the largest installation of Klark Teknik signal processing systems in the UK, supplied by Autograph Sales and chosen specifically for its ability to be controlled by MIDI.

"The system is designed to give maximum headroom throughout the club," Adeleke told L+SI. "There are three separate systems plus infills in the building, all of which have to be controlled to reconfigure them for different types of application. An audio system consisting of 20kW of sound on the main dancefloor, 3/4kW on the secondary floor, 1kW in the VIP room and 2kW of infills, is all switched through to a DN3600 programmable graphic EQ. Four DN3601 slaves together with KT's DN514 four-channel gate and DN728 2-6 output delay, with MIDI board and balancing transformers, are also used. The DN3600 recalls and adjusts all the EQs and levels from a live FOH setting to a club setting as required. Not only the club audio feeds, but also a live band's PA feeds can be routed through to all the other zones and delayed via the DN728.

Program data capable of reconfiguring the complete system instantaneously during the evening can be sent to the MIDI-controllable Klark Teknik units.

People on the Move to Pastures New

Shuttlesound have promoted **Chris Laffey**, formerly Northern area sales, to national accounts manager following his success promoting the EV System 200 with Carlsboro Retail. **Paul Gowlett**, formerly of John Hornby Skewes and more recently Arbiter, replaces him in the North, while **Gary Smith** formerly of Xerox, is the new salesman for the South.

Office administrator **Julie Webb** has taken on a new role within the Lightmasters organisation - that of after sales co-ordinator. While continuing with her present duties, she will also liaise with Lightmasters' customers once contracts have been completed.

QSC Audio have made three recent appointments. **Kevan Gibbs** joins the company as marketing communications manager, **Jeff Berryman** has been appointed as Advance Systems product manager and **Jimmy Kawelek** joins as sound market manager. Gibbs will be responsible for managing QSC's branding, advertising and marketing communications,

whilst Berryman's responsibilities include direction setting and marketing, with Kawelek extending the company's presence in installed systems.

Laser Creations International are expanding their hire and laser video projector operation with the appointment of **Mike Yarrington**, formerly of London Laser Company, to head a new worldwide discotheque and nightclub laser systems division. Yarrington will handle all worldwide sales and enquiries.

US-based Gem Sound have appointed **Kenneth Vadalabene**, formerly of Gemini Sound Products as vice-president of sales, whilst **Art Ganatt**, also formerly of Gemini, will become vice-president of operations. The appointments mark increased activity in the company's marketing and sales efforts.



Gary Smith.

Entertainment 96 in Harrogate

The Entertainment Trade Fair 96 will take place on October 30th-31st at the The Royal Hall in Harrogate. A complete range of theatre products and services will be on show, ranging from automation and contracting, through lighting, sound and hardware, to design and safety. A full seminar programme with leading industry representatives will complement the trade show.

Further details on the exhibition can be obtained from Phil Windsor on behalf of organisers, the Association of British Theatre Technicians on (01204) 304479.



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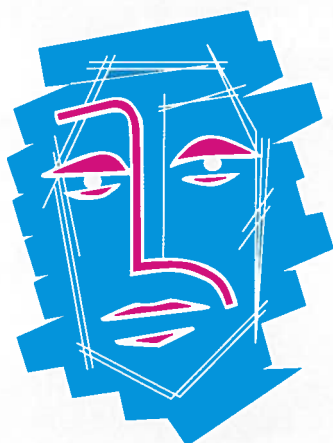


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The Virtual World of Martin Professional

Martin Professional of Denmark has released its product catalogue on CD-ROM. The disc (which was attached to the cover of L+SI July issue) includes a virtual walk-through of the company's new manufacturing plant in Friderikshavn, and a profile of the company and its activities in full-motion video.

Viewers can surf through Martin's entire product range picking out any item of interest and then see the product in action. Products can be selected in any of six categories: touring, studio and theatre, promotion, club and disco, mobile disco and control.

Starting at reception, the virtual visitor can pass through the machine shop, the paint processing plant, the production assembly area, the test department, the stores and dispatch, focusing on each process in video animation en route.

The company profile is a full corporate video giving the viewer the opportunity to find out more about Martin Professional and its activities. Most business users will have the appropriate computer equipment in their offices to run the disc, since most are now in multi-media configuration. Typically, an appropriate set-up would be a PC-486/50 with CD-ROM drive and Soundblaster card, though you can still enjoy vision without the sound facility.



Northern Light get Crest Dealership

As a result of increasing sales on all product lines north of the border, Crest Audio have appointed Northern Light as their exclusive Scottish dealers.

With offices in Edinburgh and Glasgow, and a newly-formed Pro Audio Division under sales manager Ritchie Rae, Northern Light have been steadily increasing their market penetration with Crest amplification and consoles. To further boost market share, Rae has already appointed a couple of Crest sub-dealers in Scotland, mainly to address the requirements of the discotheque market.

Direct Route to Market for Midnight

Midnight Direct is the new trading name for Midnight Sales Ltd, the London-based specialist lighting equipment sales division of Midnight Design. Damian Dowling has joined the company as sales director to spearhead the development of Midnight Direct. He brings with him over 16 years of sales management experience.

Midnight established the sales division in the eighties to run alongside its lighting design and equipment hire business. Over the years the sales department has built a reputation for installation, with clients ranging from theatres and nightclubs to student union venues, conference centres and concert halls.

CW on Morissette

Moving light specialist CW Productions have long been exponents of Flying Pig products, so when they were approached to supply a Cyberlight system for Alanis Morissette's North American tour, they recommended the Wholehog II to LD Andy Proudfoot.

The fixtures controlled by the console include six Studio Colors and 24 Cyberlights, whilst a Wybron Autopilot system has just been added.



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Crest on Hot Tin Roof

Seen and heard mostly in large installations such as Nashville's Opryland Center (see feature this month) and Veterans' Memorial Stadium in Philadelphia, Crest Audio's CKS series of power processing amplifiers have also become part of a \$1 million renovation and sound installation project at The Hot Tin Roof, a small and exclusive club on Martha's Vineyard in Massachusetts.

The venue has had a state-of-the-art sound system installed as part of the large-scale renewal project. The CKS amplifiers are employed to drive the JBL AF2222 speakers located on the left and the right of the stage and the middle of the dance floor. CKS amps also drive the JBL AS1028-SP subs mounted under the front of the stage and the JBL AM2118NW cabinets. Ceiling-mounted JBL Control 1 speakers cover the second level of the porch and are powered by CKS amplification.

Oscar-winning singer-songwriter and Vineyard resident Carly Simon recently re-acquired the venue and the club re-opened in early June with a performance by War.

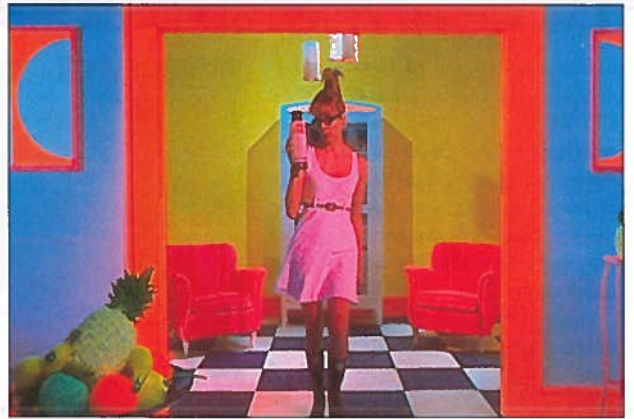
High End CD Rom

California-based Towards 2000 now have available a CD Rom set of industry manuals - The High End Collection. The manuals can be viewed on screen and portions or whole pages can be selected for printing. The CD ROM is Hybrid and so will work on either Mac or PC. The manuals are complete with all original graphics and addendums.

The Italian Job

Earlier this summer, Italian director/DP Dante Cecchin and LA-based Wildfire, shot Italy's first digital commercial at Cinecitta in Rome.

Using Wildfire's 'Long-Throw' UV effects fixtures, fluorescent paints and Sony's Digital Betacam BVW 700, the director achieved "a 3D computer graphic animation that included realistic people in the shots without the need for post-production assistance." Because of the unique nature of this first Digital shoot in Italy many of the cinematographers from the Italian Association of Cinematographers (AIC) visited the set to see the results for themselves.



Harkness Hall Screen at Olympic Premier

US giant Warner Bros. hosted the international premier of 'Eraser' for more than 15,000 athletes, officials and guests from 197 delegations at the recent Atlanta Olympics - where the focal point was a massive four-storey Perlux screen manufactured by Harkness Hall of Borehamwood, especially for the occasion.

The second premier was held under the Atlanta night sky in the Bobby Dodd Stadium

"The Harkness Hall screen is one of the world's largest, measuring an Olympian 98' x 36' "

at the Olympic Village. Arnold Schwarzenegger, the star of the film, and his co-stars Vanessa Williams and James Caan attended the gala event, as did the film's director and producers.

This particular preview was the only showing of 'Eraser' in 70mm format with six-track Dolby sound. The Harkness Hall screen

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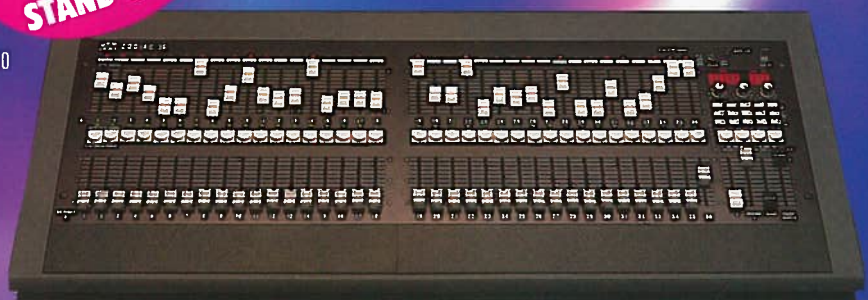
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New Management Team at Morpheus

Following our news story in the July issue regarding Morpheus Light filing for Chapter 11 protection from bankruptcy and PanCommand (manufacturers of the PanCommand system) filing for Chapter 7, further news has been received from Morpheus.

The company, which was granted the right to trade through its Chapter 7, has announced a new senior management team formed to completely reorganise and restructure the production lighting company. The new management team consists of Jim Gordon, vice-president of marketing, Dan English, vice-president of production and Brian Richardson, vice-president of engineering and advanced product development.

This team will work in tandem with newly appointed CEO and president Peter Dalton (who operates a venture funding group called Dalton Partners) and vice-president, CFO, Kenneth Groth, who will act as the advisory board for the company while Gordon, English and Richardson operate the company on a daily basis.

Immediate plans are underway to focus the company to better service its existing touring clients, including Gloria Estefan and Bruce Springsteen. Morpheus has also announced plans to release new products to the market, including the Brite Burst, a 1200W special effects light and the XL Fader for larger fixtures. Upgrades are also underway to existing products.

CPL's 'T in the Park'

Concert Production Lighting (CPL) has supplied extensive lighting equipment for the Scottish musical extravaganza 'T in the Park.'

The festival took place at Strathclyde County Park near Glasgow in early July and attracted some 30,000 visitors on each day of the two-day event. The show comprised five main areas: the Main Stage, the NME Stage, the Dance Tent, Ceilidh Tent and the King Tuts Stage. CPL provided kit for three of the five main stages and the equipment list included everything from trussing to Parcans and Vari*Lites, as well as smoke machines, colour changers, control desks and strobes.

The festival draws some of the best contemporary artists around including both established and up-and-coming bands. Headliners



included Alanis Morissette, Radiohead, Pulp, Dave Clarke, Cast, Bluetones, Black Grape and the Foo Fighters. In excess of 70 bands performed. In addition to the music, a whole mix of festival madness, which included an Internet tent, movies, a skateboarding demonstration, a games tent, a fairground, exotic food and performance art, was made available to revellers.

The Mix Generation Moves to Paris

Mix Move will take place at the Port de Versailles from 4th-6th November, 1996. It aims to be an international festival dedicated to the most advanced currents in musical and multi-media creation. The show will include all the elements of new music, visual and multi-media technologies, together with a range of new products. The programme of activities includes an independent record labels convention, a cyber café and a selection of workshops and seminars. Further details from Next Level Communications in Paris, telephone + 33 1 43 45 8080.

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Lamp	HMI 1200	HMI 1200	HMI 575/1200
Standard lens	Electronic Zoom from 8° to 16°	24 and 15 degree	11°
Optional lenses	—	13 and 9 degree	16°-13°-11°-9°
Electronic focus	*	*	—
Wheel with 7 colours + white	—	*	*
Wheel with 7 special colours + white	*	*	—
Special light blue filter	—	*	—
Rainbow effect, two-colour beams	*	*	*
Colour temperature correction filters	2	2	2
RGB colour mixing systems	*	—	—
Max. No. of colours	Infinite	113	24
Rotating gobos in dichroic glass	Optional	2	Optional
Rotating M-size metal gobos	4	2	4
Fixed M-size metal gobos	4	4	—
Variable speed indexed two-directional rotation of gobos	*	*	*
10 additional gobos in metal	*	*	*
Fixed prisms	—	1 (5 facets)	1 (4 facets)
Rotating prisms	2 (4 facets, 3D)	4 (4 facets, 3D, wake, image doubling)	—
Frost filters	2	2	1
Iris	increased speed	increased speed	*
Dimmer 0-100% - Stop - High speed strobe	*	*	*
Rotation of mirror adapter on projector body	360°	360°	360°
DMX 512, RS 232 (PMX), analogue 0-10V controls	*	*	*
Number of control channels	12/16 selectable	12	6/8 selectable

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PROFESSIONAL SHOW LIGHTING

At The Proms

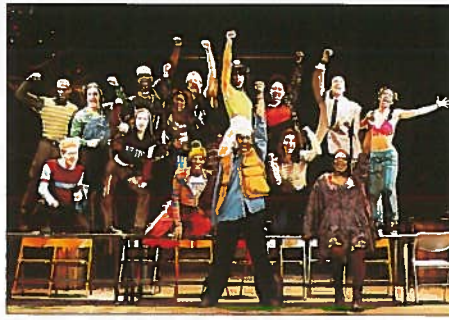
Theatre Projects/Concert Production Lighting (TP/CPL) has supplied lighting equipment to the Radley Lakeside Proms. Now a regular summer event, the Proms presents a series of concerts covering a wide range of music. TP/CPL provided 10 Theatre Projects DMX controlled moving PAL Cadenzas, 12 SkyArts and two four-headed SkyTrackers, all of which, together with the fireworks display, featured prominently to augment the 1812 Overture which concluded the Friday evening performance.

The venue also enjoyed the effect of TP/CPL's AR500s, architectural luminaires from Irideon, which were used to illuminate and display the lake which surrounds the stage.

NJD Name Spanish Distributor

Gil Risoto, of Malaga, has been appointed as the official Spanish distributor for the complete range of NJD products. The company, who have been established for 31 years, already distribute many well known brands within the industry. In only their first week of distributorship they completed an NJD installation in Malaga which included NJD's award-winning Datamoons.

Rent Rocks Broadway



The Tony Award-winning play 'Rent', currently running on Broadway, features a large variety of EAW speakers. Sound designer Kurt Fisher chose EAW in order to achieve a rock and roll sound without compromising the clarity of the vocals. The main house left and right speakers consist of KF650 and KF300s, with four SB1000s and two SB250s covering the low bass, whilst SM260s and SM200s provide stage monitor coverage. In addition, nine UB82s, eight JF200s, four KF80s and five Virtual Array System 850s are used for house delay speakers and front fills. Crest amplifiers, an LM monitor console, a Cadac mixing console, Aphex 661 compressors and an automated LCS level control system for effects are also used. The sound package was supplied by ProMix.

L+SI e-mail: info@plasa.org.uk

KAM and Stanton Sponsor DJ Workshop

Having been involved with the first edition of the DJ Workshop staged at the Royal Festival Hall last September, KAM and Stanton are to co-sponsor a second DJ Workshop, again to be held at the Royal Festival Hall, on October 5th. The workshop will follow the same lines as last year where 'wannabe' and established DJs, producers, and promoters all exchanged ideas and techniques on DJ'ing and re-mixing. This year, the workshops will be hosted by Cutmaster Swift, Nicky Blackmarket, Kenny Hawkes and Ray Keith, to name just a few.

The day is divided up into four areas - House & Garage, Hip-Hop, Drum & Bass and Techno, as well as a workshop concentrating on studio sessions. There are three workshops for each of these areas. KAM and Stanton will supply the cartridges and the scratch mixers to each of these, giving DJs first-hand experience of the technology. Though the day is educational, it does have a competitive angle, and there will be a competition in each music category for the best DJ. KAM, Stanton and Soundivision have come together to supply a mix of prizes, including Stanton headphones and cartridges, KAM GMX 4 scratch mixers, Soundivision record bags, T-shirts and slipmats. The Workshop is now being transformed into a unit for the BTEC National in the performing arts, thereby enabling schools and colleges all over the country to access this course.

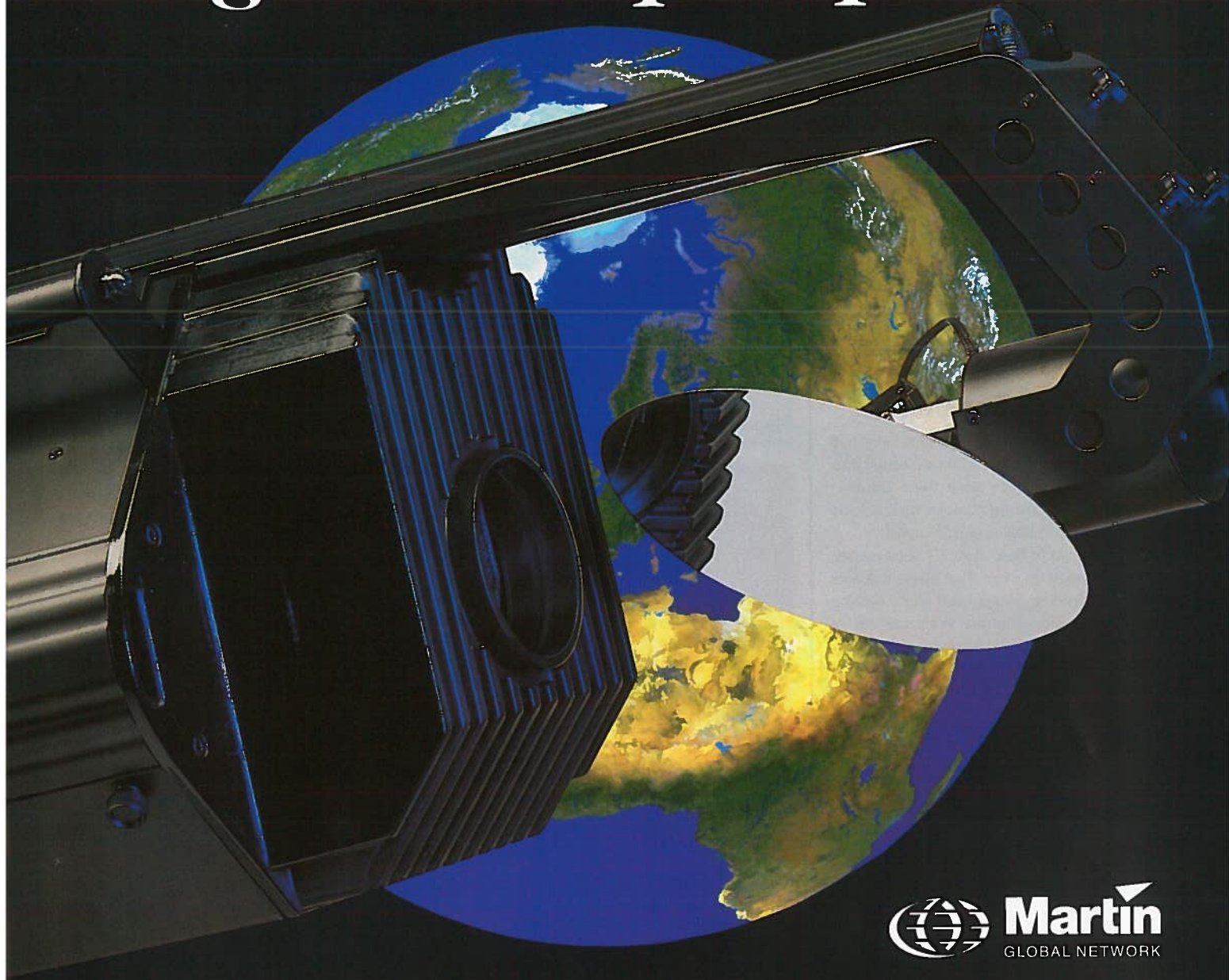
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Strand in 4-1 Studio

The Four-to-One Studio, which opened last year at the Magic Media Complex at Hurth, near Cologne, has now been upgraded with a lighting package from Strand Lighting which includes a new generation 430 Control console, with a full complement of available software.

The studio now has the capability to programme and operate automated fixtures. In addition, 15 Minispot Profile fixtures have been installed to simulate the 1000W fixtures which are in place on the full size rig. The Hurth facility has several advantages over the original London concept: it is larger, more flexible and better equipped to provide an appropriate work environment for theatrical, television and tour productions.

CP's China Seminars

Italian show lighting manufacturer Clay Paky held a series of lighting design seminars earlier this summer, in conjunction with their Chinese distributor, Advanced Communications Equipment (ACE), in Beijing and Shanghai.

The seminars were held at ACE's showrooms, and were attended by more than 50 participants from China's leading professional show lighting dealers and service centres. With the aid of closed-circuit TV, the delegates were able to closely follow the in-depth demonstrations on a range of Clay Paky's products, including the Golden Scan HPE, the Combicolor 300 and the Astroraggi Power.

Selling the Light



The Science Museum, in conjunction with the Institution of Electrical Engineers (IEE), is holding a small exhibition on the advertising that has been used to sell electric lighting to the public over the last 113 years.

The exhibition, which is an update to the Museum's Lighting Gallery, begins with the Swan catalogue of 1883 and comes right up to date with adverts for long-life lamps.

Wide-Screen Forum

At the request of the European commission, Forum Europe is bringing together senior representatives of broadcasting organisations, consumer electronics companies and programme producers on 26th September to participate in a conference in Brussels on wide-screen television.

Speakers will include Bernard Cottin, executive vice-president of Canal Plus, France; Theo Peek, director of Philips business Electronics, The Netherlands and Michael Starks, controller of the digital broadcasting project at the BBC, UK.

The conference is part of the Commission's consultations on the future of the EU's wide-screen television policy, which arose from the controversial HDTV initiative some years ago.

For further information, contact Heidi Lambert Communications in Brussels, telephone (+322) 732 556 or fax (+322) 735 3603.

Eggs on Legs

Bristol temporary power company, Templine, were eating breakfast at lunchtime during August - while helping the rest of the country's morning meal go with a swing.

Templine, based in Avonmouth, joined the crew of Channel Four's The Big Breakfast show as they took to the road for a four-week, 20 venue tour of the UK called 'Eggs on Legs'. Templine engineer Angus McInnes and his team covered the length and breadth of the country, powering light, sound, stage and transmission every morning for the outside broadcast from five o'clock to nine.

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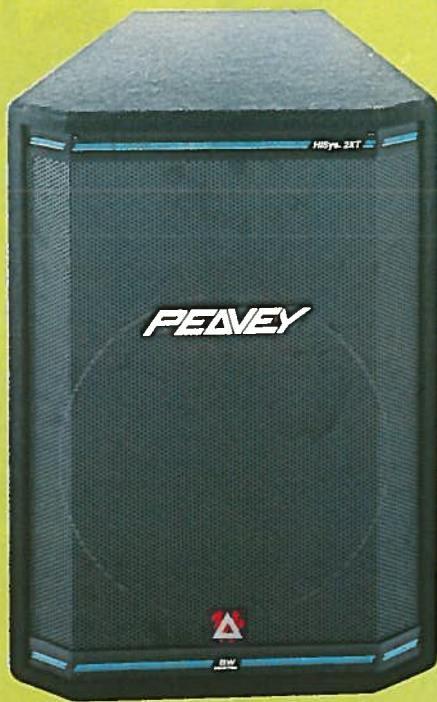


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The Kungfu Monks of the Shaolin Temple

A couple of years ago an Austrian concert promoter, Herbert Fechter, was rash enough to state in a published interview that he was a little bored with the endless procession of pop groups and wanted something new. He received a suggestion from the most unlikely of sources, Shaolin, home of the Temple of the Kungfu Monks. How a copy of an Austrian magazine found its way to a remote corner of Hunan province in China remains a mystery, but the letter talked of a preserved discipline, mythologised in Western culture, that had never been seen outside China. A trip to the Shaolin Temple ensued and in the Autumn of '95 the monks made their first visit to the Western world.

Working through Harvey Goldsmith, this is the monk's second visit to the UK. In autumn last year, they did just two shows, both in London, at Wembley and The Docklands Arena, performing in the round to 7,000+ audiences. Not sell-outs, but good showings for an unconventional and unknown group of performers. This second tour in early summer has seen the monks visit more provincial locations - Newcastle, Dublin and Sheffield for example, and has not been attended with quite the same enthusiasm as London. This may, in some part, be due to the lack of media coverage, especially TV, which seems to have the attention span of a three-year-old, but considering the novelty of the show, there is still a substantial demand for what Herbert Fechter defined as something other than endless pop.

The presentation technology is decidedly rock and roll - sound from Cane Green and WigWam, lighting from LSD - and the practitioners too. Mark Ballard looks after front of house sound, whilst lighting has engaged the heavyweight talents of Paul Dexter, an LD more used to vying with the likes of Elton John. The demands on the PA are relatively light; 16 MSL3s per side and a couple of 650s on the floor more than adequately convey the gravitas of the recorded commentary and the oriental background music. The work for Ballard is all in the cueing - four CD players and a DAT tape machine keep him busy. It was all too apparent sitting at the FOH position, that this was made even harder by the lack of any production manager to give the show some direction. The monks speak no English, and the interpreter is not an art director or producer, but a linguist.



Shaolin monks assemble before the temple facade.

Tour manager Georg Hartmann does an admirable job keeping the entourage together, but it is rather disturbing to see a committee of lighting designer, sound engineer and tour manager just minutes before curtain debating when and how to cue-in the opening of the temple doors. There is no live commentary - once the scripted music and narrative track is underway, Ballard is entirely dependent on the performers remembering their cues (signalled in a language they do not speak). If something goes wrong, as is all too possible with a highly dangerous martial arts demonstration, there's no room for improvisation. Fortunately, the monks are self-assured and supremely confident in their ability.

Lighting is all drama, and at least Paul Dexter has the latitude to be responsive to what is actually happening. In fact, he has taken the show by the horns and reworked it thoroughly since the troupe arrived from Europe. The Monks have a 50ft wide temple facade and a 40sq.ft raised platform as their performance areas, the two separated by a pathway of some 30ft. The lighting was originally one dimensional: lots of ungelled 2kW floods on a huge linked trussing system that spanned every element of the set, but this was rapidly despatched homewards and replaced by pre-rig truss and 150 odd Pars.

The performance embodies three main elements: large formation weapons exercises, where 18 men perform tightly choreographed routines, demonstrations of strength and power performed by individuals, and physical exercise

and meditative rituals. It is a measure of the compelling nature of this two-hour show that when the monks first appear on stage, they perform an initial meditation that lasts around seven minutes in preparation for what is to come.

Dexter has focused his lights tightly - and all parts of the set can be separated, giving him as much room to manoeuvre as possible. The big weapons routines are bright and dazzling, the trials of strength focused down in the shaft from a single centrally positioned Intellabeam, whilst the meditation and exercises are delicately lit in pale lavender and blue washes.

The Temple facade, with the exception of one feat of pain control, is used only as an entrance device, with 99% of the activities performed on the square platform. The temple could be dispensed with, but its loss would certainly detract from the atmospherics of the show and its presence underlines the importance that oriental theatre tradition puts on entrance and framing. The influence of oriental theatre is an assumption on my part - I wouldn't want you to think that these monks are play-acting. Without giving anything away, I can verify that the granite slabs, spears, axes and bed of nails are real. Maybe it was something to do with Sheffield's heritage, but when a bar of cast iron, soon to be broken across a bare head, was offered for inspection, the audience queued up to touch it.

This may not be the new rock and roll, but it holds a certain fascination and is compelling enough to dispatch two-and-a-half hours in a heart beat. The reason these shows were so poorly attended, relative to the success of the London promotions last year, is not through any lack of appeal. There are just some forces that even 30 years of Buddhist contemplation can't overcome, namely European Football and long warm summer nights. It remains to be seen how well they do when the tour transfers to the US at the end of June and joins the Lollapalooza travelling circus. Despite being sandwiched between performances by Rancid and Metallica, I somehow think they'll rise above it and surprise us all.

Steve Moles

Damn Bright Light

ARRIVING 8 | 9 | 96

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Forty years after he began telling stories with light, Richard Pilbrow remains one of the industry's greatest visionaries - not only in his approach, but in his efforts to advance the field.

As someone who started his career working with four-frame "color semaphores" Pilbrow is perhaps more appreciative than most of advances in industry technology. More than just welcoming the computer age, he has helped usher it in, serving as a guiding light for its application in theater lighting.

Most recently, that has meant leading the charge for the establishment of industry standards. To Pilbrow, it's about letting designers do what they do best. "We've been consumed for decades with digits and coordinates, and they've absolutely nothing to do with lighting. We're not engineers after all, we're designers."

"The exciting thing to me is the prospect of all these different components working together - moving lights, color changers, The Autopilot, - and, more than that, the ability to program it all off line. The combination is really quite powerful.

"The technology used in Wybron's Autopilot was obviously a very significant step forward in that process," Pilbrow says. "What The Autopilot does is wonderful, but *how it does it* is what's really exciting."

Pilbrow says The Autopilot, and the development of DMX technology, are only the beginning: "In 10 years time, the idea of manually operating theater lights will seem a bit preposterous, I think."

We think so too. And we're sure that in 10 years time, Richard Pilbrow will be telling a whole new generation of lighting designers just how preposterous it was.

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Stand C6



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ATM's Flying Approach

Loudspeaker rigging hardware specialist, ATM Fly-Ware, has been demonstrating the benefits of applying a custom approach, with recent installations including Paisley Town Hall in Scotland, where ATM rigging was specified for the new central cluster of EAW JF260s and JF60s, with the company providing a customised frame to hang the cabinets. The installation was carried out by Warehouse Sound Services in Edinburgh.

On the OEM front, Adam Hall GmbH in Germany recently supplied a major system to the Kiev Cultural Palace, comprising two large clusters of nine Community RS-660 cabinets. The project involved design input from Autograph Sales (ATMs exclusive European representative) and ATM themselves, creating a structure which would meet with the venue's requirement. The system was supplied via Adam Hall to installation company, B&S Import/Export.

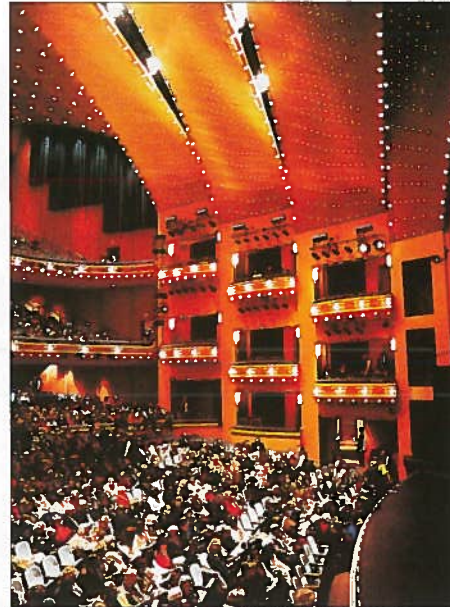
In the US, both The Superdome, USA's largest indoor facility and The Georgia Tech University Olympic Aquatic Centre have specified ATM rigging. The Superdome project involved the company delivering a total of 12 custom grids and also included suspension hardware and I-Beam attachments for a system comprising over 90 cabinets, whilst the University has custom-built suspension hardware for their new eight cluster system and also the building structure itself.

ATM Fly-Ware rigging is used on many of the world's major rigging projects and recent ones include the Lord of the Dance tour, the Three Tenors tour, the Olympics, David Copperfield, the Grammy Awards, Disney's Beauty and the Beast, and the Republican National Convention.

Mixing with the Girls

Girls FM, one of London's most popular underground radio stations is now on air in stereo. Girls FM is keeping abreast of the new technology available by choosing a KAM KCD 950 twin CD player and the DJs who are using CDs, namely Princess Julia (Ministry of Sound), DJ Seamus (Satellite Club), Crispin J Glover (Matrix) St John de Zilva (DJ Workshop), will be fading the tracks together through a KAM GMX7 sampling mixer. For those DJs who keep true to the vinyl cause, there will be the extra tracking power of Stanton Trackmaster's on their decks. The KAM KCD 950 has a number of special play mode features as well as jog shuttle wheels.

TPC at Aronoff



Theatre Projects Consultants was the theatre consultant for the Aronoff Center for the Arts, in Cincinnati, which opened in late 1995.

The venue has three main performance spaces: the Procter & Gamble Hall is a 2,700-seat theatre equipped to present major musical and theatrical productions; the Elizabethan-style Jarson-Kaplan Theater seats 440 and has full production capabilities enabling it to host a wide variety of local and regional performance groups; Fifth Third Bank Theater is a 150-seat studio theatre with modular seating and stage. It is used by community groups, and for receptions and business meetings.

TPC, working with the architects and clients, developed the concept designs for the three theatre spaces and the adjacent support areas. The company also designed the performance equipment systems, including lighting, sound, drapery, rigging, stage lifts and machinery, as well as the architectural lighting for the complex.

Highlights of new product releases at the forthcoming PLASA Show start on page 81

More Summer Holiday

Theatre Projects/Concert Production Lighting (TP/CPL) has supplied a conventional lighting rig with Vari*Lites to the new theatrical production of the musical Summer Holiday, which opened at the Opera House Theatre in Blackpool.

The production, which has been playing to a full house, was lit by Howard Harrison, assisted by Alistair Grant. It stars Darren Day and features a giant life-size replica of a London double decker bus. The latter, while hugely impressive, provided production manager Connor McGivern with the most headaches because it had to be built into the scenery without looking incongruous. Eventually, it was decided to use two buses, one for inside and another for outside to solve this particular staging problem.

TV Column

Owl Video Systems recently joined forces with Kaleid-ovision, specialist in graphics effects and large screen video projection, to supply a 54 monitor videocolumn for David Frost's 'A Gala Comedy House - Best of the Prince's Trust' TV show which was recently broadcast on ITV.

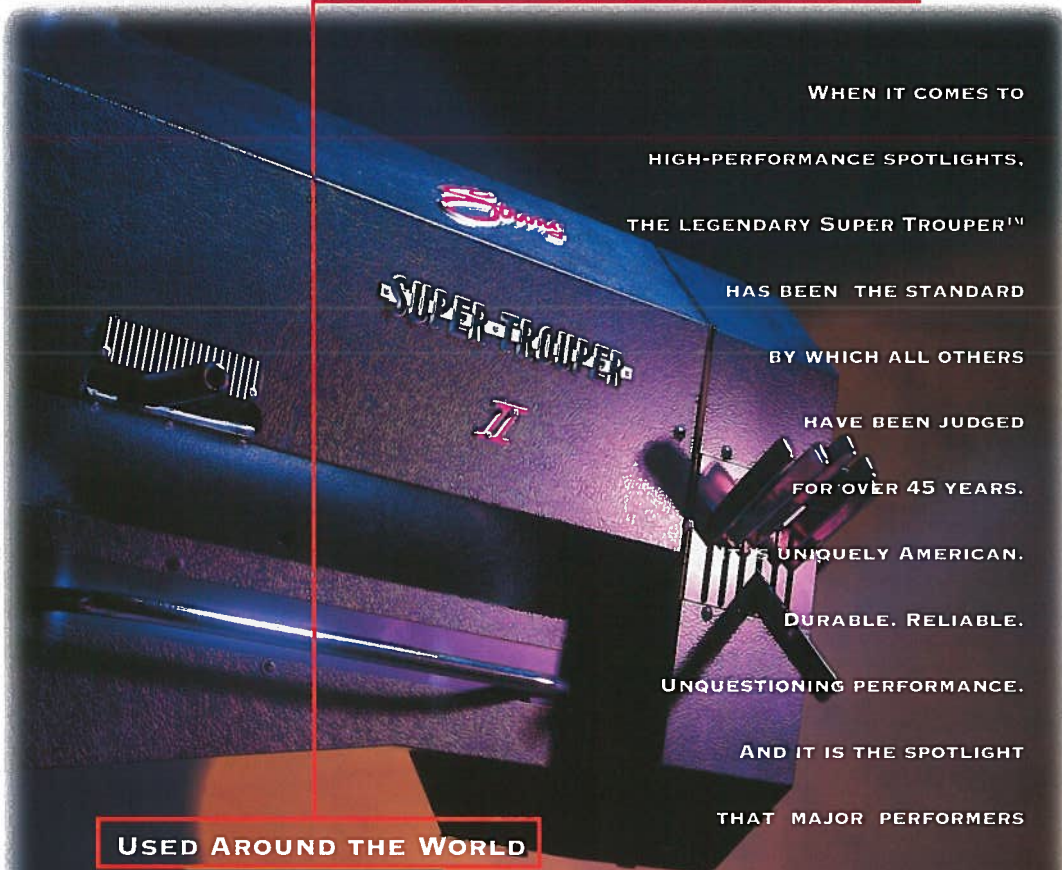
As the centrepiece of the set, Owl's videocolumn was used to introduce a series of video clips, which David Frost presented throughout the show. Rather than using a conventional flat projection screen for the introduction and display of the video clips to the studio audience, the videocolumn was able to deliver any combination of split screens or single monitor pictures.

It was constructed using Seleco wedge monitors (SMV 280W). Measuring six monitors high and nine monitors round, it is one the the largest videocolumns of its kind to be constructed by Owl. With 54 monitors, each weighing 45kg, the floor was supported by a specially designed plinth allowing access to the equipment controlling the monitors from the base.

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Showlight 97: Looking to the Future

Showlight '97 marks the fifth international colloquium aimed at lighting for the performing arts, covering television, film, theatre and concert lighting. The event features a full conference with invited speakers presenting papers covering a wide range of topics, together with a trade show where a range of lighting equipment and information is on display. Taking place in the heart of Europe at the beautiful Flemish Opera House in Ghent (28-30 April, 1997), the event looks set to break all previous records.

Plans are now well underway following a recent visit to the Opera House by members of the UK organising team who met with Belgian-based colleagues to firm up all aspects of the show, most particularly the programme of visits and the conference dinner venue. The recent issuing of a Call for Papers has already drawn a wide response from professionals within the industry and such has been the interest, that the organisers have extended the closing date to September 18th to accommodate requests for more time to submit papers. Recent advances in technology have created a myriad of new opportunities for lighting professionals, without eclipsing the value of more traditional skills. As a result, it is anticipated that the papers programme will offer a broad sweep of the industry, from the latest innovations in CAD software to what the future may hold as we approach the Millennium. If you would like to submit a paper, call Ruth Rossington at PLASA Publishing ASAP who will forward the appropriate information.

The trade show is now fully booked, although there is a possibility that further stands may be created to accommodate demand for space. Exhibitors taking part include AC Lighting, ADB, Arri (UK), Avolites, Beo Brackman, CCT Lighting, Dedo Weigert, DeSisti Lighting, ETC Europe, EVDV, Glantre Engineering, Howard Eaton Lighting, JEM, Le Mark TVS, Lee Filters, Lightfactor Sales, Lite Structures, LSC Electronics, M&M Group, Optikinetics, Philips, Pulsar, Roscolab, Sachtler, Selecon, Strand Lighting, Sylvania, Teatro, Theatre Projects, Vari-Lite Europe, White Light and Wybron. Various associations and industry publications will also be represented at the show.

For further information on Showlight 97, please contact the administration office in Eastbourne, telephone (01323) 642639.

EAW Backs Hunch

A super-sized EAW speaker system was called into play at the recent debut of Disney's summer blockbuster 'The Hunchback of Notre Dame'. The world's largest indoor stadium, the Superdome in New Orleans, featured the world's largest film premiere sound system providing sound to an estimated audience of more than 70,000 people.

The challenge was to design a system that would provide the live show with engaging audio quality, while giving the film the visceral response and clarity needed for such a large venue.

EAW Stadium Array systems provided all main, delay and surround sound, including 24 KF853s, 38 KF852s, 36 BH852s, 48 KF850s, 66 SB850s, 60 JF200s and 40 JF80s for the main PA. Sixty EAW JF200 high definition systems, along with 40 JF80s were used for the surround system, whilst the stage monitor rig included SM200s and KF850s for side fills. The massive speaker system was powered with Crest and QSC amplifiers, with Yamaha, Soundcraft, Amek, Crest and Cadac consoles used for mixing. Understandably, the biggest problems were the acoustics in the Superdome and the logistics of setting up a giant system for one evening.

EAW speaker systems also abound in the Festival of Fools, a new, interactive, audience inclusive, live theatrical event in Disneyland, California, which gives the spectator an enveloping multi-stage experience. The 28-minute attraction is loosely based on Disney's The Hunchback of Notre Dame, where, as tradition would have it, one day every year the most absurd people can become king. In this case, Quasimodo becomes the king and the characters from the movie sing, dance and involve an interactive audience of 2,200 people per show, for five shows per day. Quasimodo even climbs up the Disney version of the famous Notre Dame bell tower.



EAW loudspeaker systems abound in the medieval setting of the 'Festival of Fools' attraction in Disneyland.

Canon Raises Profile at LIW

Canon Audio will be attending LIW this year for the first time. They will present their portfolio of high-profile installations and discuss the pro-audio solutions they have provided for a number of different venues. These range from Allied Kunick's new high-profile audit entertainment concept, Smilin' Sam's, featuring V-100s and multiples of V-200s, to the Whitbread-owned David Lloyd Centres, featuring white V-100s.

Other Canon users include Trusthouse Forte Hotels, retailers Asda and JJB Sports, plus the World of Coronation Street and Crinkley Bottom theme parks.

Global Support

When Cirque de Soleil began a tour of Japan, they chose to use CD80 packs from Strand Lighting in Canada. However, knowing that pack controllers can be temperamental at 100v and below, the Canadian sales office contacted Strand's Hong Kong office to seek advice. As a result, the Cirque set off for Japan armed with information that would be very useful, namely to add step-up transformers when using the controllers.

Later in the tour they ran into a situation which required a change of software. Strand in Los Angeles specified the E-Proms required, and Strand in Hong Kong provided the technical support. When the Asian office found that the required E-Proms were unavailable locally, they contacted Strand in Los Angeles. It transpired that they were only available in North America. The resulting combined operation ensured that the product arrived in Japan on time.

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Sennheiser's Hole in One

The first Sennheiser Challenge Trophy Golf Day was held at the Mill Ride Golf Club near Ascot, in late July.

The morning nine-hole Texas Scramble was followed by a buffet lunch and 18 holes of individual Stableford competition in the afternoon, with dinner and prizes rounding off the day. The winner of the Challenge Trophy was Phil Anderson of Capital Sound Hire, with Charles Smith of Case Design and Steve Wood of Path coming second and third respectively.

The winners of the Texas Scramble were Phil Anderson and Tristram Bickerton of Delta Sound. The Longest Drive was won by Howard Morley of HBM, whilst the nearest-the-pin award went to the ubiquitous Phil Anderson. The Best Lady Player Award went to marketing lady Ginny Goudy, whilst the Booby Prize for lowest score was awarded to Steve King of Canford Audio. Finally, the best Sennheiser player was Guy Elliott, who actually went into the lake to play his ball, so keen was he to cool off.

The assembled company was certainly mellow by the time Paul Whiting asked for donations to the Great Ormond Street Hospital, and £500 was raised from the event, to which another £500 was added by Sennheiser.



Paul Whiting of Sennheiser (right) with tournament winner Phil Anderson.

Event 6000 Firsts

RCF Electronics (UK) have recently shipped the first Event 6000 speakers. These are the top model in the RCF Event Series, and feature a three-way bass reflex system, with a peak power of 4000W and sound pressure levels up to 134dB.

The first installation of the system was undertaken by London-based Envo-Tech at Raffles nightclub in Jersey. Guildford Sound and Light, who have been supplying Event speakers for some time, have just taken delivery of their first pair of 6000s. The company's Mark Donovan told L+S: "We are now expanding on the audio front, and with the Event range we have something for everyone. The 6000s will come into their own with some of our larger hire and installation projects."

Greenway Wins MTV Contract

Greenway Ltd, of Newbury, has been awarded a substantial turnkey contract by MTV Europe for the supply and installation of an ADnet video server and communications system.

The ADnet system enables commercials to be MPEG-2 encoded in London and downloaded to the remote site via ISDN. Remote unattended operation is enabled via a Greenway-designed custom control system. Playlists from MTV's London-based traffic system will also be uploaded from London to a remote site via a special communications system built by Greenway and ADT, manufacturer of ADnet.

Laser Sound

German laser company Lobo Electronic use a large, fully-fitted trailer, converted into a studio, for their on-the-road demonstrations of their spectacular laser shows.

When the company were ready to upgrade the existing onboard audio system, in which the power engine was C Audio SR606 amplification, Lobo's Richard Pollock contacted Jurgen Maurer, who runs C Audio's German distribution company Musik & Service. He placed a large order for 20 1000W per channel C Audio RA4001s, which are now driving the new sound system.

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Like 8-bus routing, advanced solo facilities plus optional 12X4 matrix modules to ensure maximum flexibility. And the audio performance, naturally, is flawless. To find out more about the new Soundcraft K3 and K3 Theatre, call +44 (0)1707 668143 today.

Little Green . . . Lasers

Laser Grafix of Royston, Hertfordshire, were recently responsible for a spate of UFO sightings around the Oxford area, following a demonstration of their Copper Vapour display system.

The strange green lights in the sky were spotted by a member of Contact International, a worldwide UFO research organisation, who then launched an investigation into this and several other linked sightings. In late May, an eye-witness account of the phenomenon, from local resident Jason Treeby, appeared in the Oxford Times: "It was at aeroplane height and like a thick, horizontal beam of green light . . . we watched it for around 15 minutes."

The truth emerged after a Contact International researcher wrote to Laser Grafix, and the organisation have now asked to see a demonstration of the laser and to photograph the effects for their future reference.

Sennheiser Award

Michael Stevens and Partners has won the Sennheiser Dealer of the Year Award in recognition of its services to broadcasting in 1995.

Not only did the company supply more broadcast equipment than any other UK dealer, but members of the team also abseiled down the front of Big Ben and bungee jumped off the Clifton suspension bridge while broadcasting the virtues of Sennheiser products!

Meyer in Modena



Meyer Sound's self-powered loudspeaker systems continue to gain in popularity across Europe, according to UK distributor, Autograph Sales. Recent projects include the supply of Meyer Sound MSL-4 systems to UK touring specialist Sound Hire, for the Pavarotti and Friends charity concert held in Modena, Italy during June, and for various European dates on the Three Tenors tour.

Cadac was also present at the Pavarotti and Friends concert, again via Sound Hire, with its first F-Type live console off the production line pressed into service.

Opera in Ottawa

A three-year long project reached another benchmark recently with the raising of the Crest-powered, EAW central cluster in Ottawa's National Arts Centre - a 2,300-seat Opera Hall.

A pair of Crest 3301 amps, as well as two 6001s and an 8001, power four EAW MH660Es with two BV525PD2s low frequency virtual array modules in the central cluster. An EAW MX300 controller and a MC200 controller, NexSys software, plus a BSS Varicurve equalisation system and digital delay unit complete the installation.

The cluster was designed by acoustic consultant Dale Fawcett of Orchestral Arts Inc in Toronto, who produced an acoustic model of the venue using EASE software. The cluster joins the 'small flying', 'deck' and 'delay' systems already in service. The final phase of the project is the installation of a system which will include further Crest amplification, powering eight EAW KF850s with two MX800i CCEP crossovers. The venue now has 43 amplifiers from Crest Audio powering 60 EAW loudspeakers, and 24 EAW processors.

Apogee's New HQ

Apogee Sound has moved into a new 46,000sq.ft facility, in Petaluma, California. The company has vastly expanded its manufacturing capabilities and added a specially designed speaker testing environment and conference rooms.

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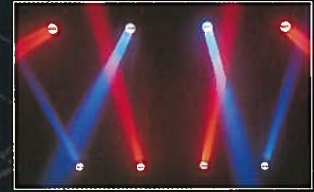
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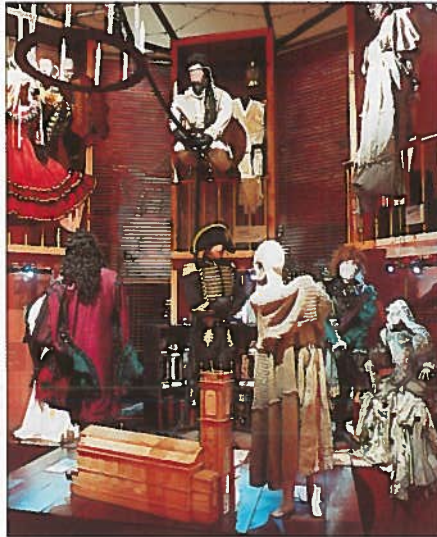
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The Swan's Song

Lighting Technology Projects (LTP) has completed an unusual sound installation for a semi-permanent interactive exhibition celebrating 10 years of productions in the RSC's Swan Theatre in Stratford.

The imposing Gallery Room, with its six metre high walls, provides the setting for the attraction, which comprises a representation of the Swan Theatre. Conceived by Brian Glover, director of the RSC collection, the exhibition is brought to life via a series of conversations and reminiscences heard from seven sound channels placed at various points within the exhibition. Visitors find themselves on centre-stage while viewing the paintings, props and costumes, all collected from various shows over the Swan's history. Voices rise from a variety of locations, as actors, designers, producers, stage crew and engineers recall their own memories of working in the theatre.

These reflections can be heard against a backdrop of curtain calls, orchestra preparations and audience pre-show murmurings. Brian Glover made recordings of RSC personnel on a Tascam DAP1 portable DAT recorder and Sennheiser K6 mic system. The interviews, lasting some 60 minutes, were then mixed onto a Tascam DA88 Hi8 machine for playback through eight EAW UB12s, backed by four Crest VS450 amps.



Teatro Appoints Futurist as Dealer

Futurist Light & Sound has been appointed a Teatro dealer. In addition to Futurist's sales involvement with the Italian manufacturer, the company will be offering Teatro products, including the recently launched Colourbox-2, through its rental division.

Floating Images

PA Lights, the Lancashire-based audio-visual company, is now distributing High Definition Volumetric Display (HDVD) in the UK. HDVD projects a 'floating' image between the projector and the viewer. Taking any kind of feed, from CD Rom or laser disk to PC or video, the specially created graphics lend themselves to endless possibilities, with both commercial and entertainment applications.

The HDVD is an extension to PA Lights' existing audio visual services and will be providing part of the display for the Mainstage stand at PLASA.

Osram Research

Osram Sylvania, a Siemens company, has opened a new research centre in the Cherry Hill Industrial Park, just outside of Boston. The centre will focus on research and development of new light sources, technology and materials. The result of a \$2.5 million investment, the centre was designed by converting an existing building to create 25 laboratories and supporting offices.

Tour Tech with Crest

Tour Tech, the PA rental company responsible for the audio production on the recent Manic Street Preachers tour, were delighted with the many favourable reviews given to the sound from both the pop press and the band itself. Part of the reason, according to Tour Tech's Dick Rabel, was the company's choice of Crest amplification. FOH sound engineer Robb Allen used Crest 8001s and 9001s to drive Tour Tech's TT4C PA stacks, while monitor man Rollie drove the stage sound through Crest CA6s, mixed through a Crest Century Series LM monitor board.

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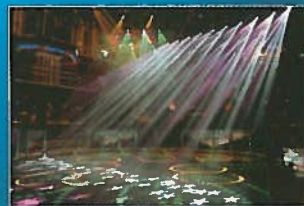
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Colourbox-2

According to Teatro, demand for their Colourbox-2 colour change system for stage luminaires is outstripping supply, and the Italian manufacturers are gearing up production to accommodate demand.

The Colourbox-2 is specifically designed for use in concert halls and theatres where extraneous sound has to be reduced to a minimum. It provides three sets of twin colour 'bands' which move in and out of the luminaire's beam to provide subtle changing and direct access to any one of the six colours or diffusion materials.

Three versions of Colourbox-2 are now available. The 150mm aperture for 1kW luminaires, a 200mm version for 2kW units and a specific version for Teatro's 1000W Diluvio floodlight. The colour changer is also certified as meeting EMC requirements and is CE marked.

Launched at the ABTT Trade Show in April, the new range of CE standard Parcans from Teatro are also now in volume production. The range, which includes Par 64 and Par 56 versions in short and long nose variants, incorporates a lamp rotator and other safety features required for CE approval.

Fostex PD-4



BAFTA award-winning sound engineer, Kieran Horgan on location with his Fostex PD-4.

Double BAFTA award-winning sound mixer Kieran Horgan of 'In the Name of the Father' and 'My Left Foot' fame, has been converted to the digital philosophy by the Fostex PD-4.

Purchased from UK distributor SCV London, through Dublin-based Audio Engineering, Horgan's PD-4 will be put to good use shortly on Neil Jordan's forthcoming feature film 'The Butcher Boy', having already been used on 'Michael Collins', a historical drama due for release this Autumn.

ILDA Heads to Canada

The 10th Anniversary meeting of the International Laser Display Association will be held at the Holiday Inn, Burlington, Ontario, from 11th-14th November this year - the first of ILDA's meetings to be held outside the United States. The discussion will include both 'Advanced Technology' and 'Artistic' Workshops, together with seminars on laser-related topics, including aviation safety, as well as the annual trade show and awards. For further information, contact the ILDA in the US, telephone +1 (914) 758 6881.

Roadstar in the Round

PA specialists, Roadstar Technical Services, have installed sound and lighting equipment worth £90,000 into the new Roundhouse nightclub at the city's Pond Forge swimming pool. The lighting system, which is suspended from Astralite trussing and driven by a Lightprocessor Q Commander, includes Clay Paky Golden Scans, Optikinetics K1 projectors, Anytronic Superstar slave strobes and Abstract Galactic Moons.

Roadstar's Robin Stillings turned to Crest Audio for the amplification necessary to drive their own CR12T mid and CR21B bass customs cabinets. The amp rack, which is located in the DJ area, contains three Crest Vs 900s, four Vs 1100s and four Vs 1500s. The system control racks include Behringer processors, with Technics SL1200 turntables, a Pioneer CDJ-500CD turntable, Denon tape deck and Cloud CXM DJ mixer, with Shure SM58 mics.

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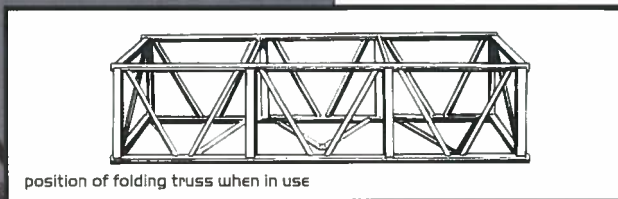
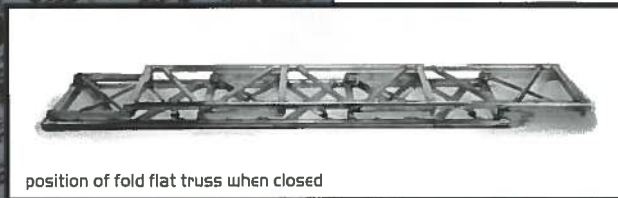
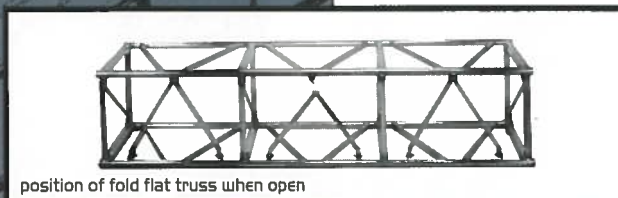
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Martin at Moonglow Festival

The sound of the burners of 22 hot air balloons at the Moonglow Festival, recently held in the War Memorial Park, Basingstoke, was accompanied by a 20 minute DAT tape played through eight stacks of Martin Audio Wavefront 8. The stacks, specified by production company Midas Sound and Lighting of Salisbury, were arrayed in a 180 degree curve on a circular bandstand and the display was followed by a fireworks display on the opposite side of the park, again accompanied by Wavefronts. The system was driven by PSL VP2030 and VP 1216 amplification.



The following evening, the eight stacks were on duty at Bristol's Victoria Rooms with Masque, a 10-piece Pink Floyd tribute band. Other recent dates for Midas and the Martin stacks include the Bournemouth Sinfonietta outdoors at The Larmer Tree grounds, an old Victorian pleasure gardens in Tollard Royal (pictured above).

Dancing With AT

Sensible Music have recently taken delivery of a large quantity of Audio Technica's ATH-M40 professional headphones for use during the new Michael Flatley production, Lord of the Dance (see news, L+SI August 96).

The new show, which is a follow-up to the worldwide success of his Riverdance production, is proving just as popular, with the run of performances being constantly extended due to massive ticket demands.

SSE's Midas Touch

SSE Hire have recently acquired more Midas consoles to add to their expanding stocks. The company now owns seven XL3s, two XL316 extenders and two XL4s, all of which are in constant demand. Over their busy summer period, SSE have been providing systems for tours with AC/DC, Metallica, Tears for Fears and Tori Amos, plus festival systems at the Fleadh, Madstock, Torhout, Tea in the Park, Phoenix, Chelmsford, Warrington and Reading.

Skylights Supply Shopping Complex

Skylights International supplied two four-beam Skyskanners and a single-beam Skyranger searchlight for the opening of the Next Boutique shopping complex in Abu Dhabi recently. Through their local agent, Emirates Laser, they were able to supply the hardware at very short notice, and following further enquiries from Kuwait, Abu Dhabi, Qatar and Duai, they will be increasing their stocks based in the Gulf.

The Skyrangers and Skyskanners have also been used recently at special events for McDonalds, Beefeater, MGM Cinemas and Warner Brothers, as well as for the launch of Vauxhall's new Vectra.

Bandit Award

Tennessee-based Bandit Lites has been named the 1996 Entrepreneurial Company of the Year by the co-sponsors of the Greater Knoxville First & Future 50. The award recognises companies which have enhanced business and created jobs for local people.

See L+SI at PLASA on Stand E6





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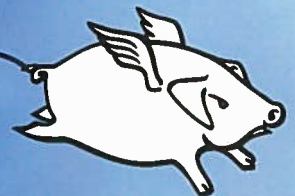
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SCC for SFX

SCC Audio, the Plymouth-based PC audio specialist, has become the UK distributor for Stage Research's SFX. Aimed primarily at theatre, this award-winning automated sound playback software replaces devices such as MiniDisk players and samplers with a PC running Microsoft Windows. The move coincides with the launch of ProDAS SFX, a complete hardware/software package based around SFX.



Mike Palmer with ProDAS on Tolstoy.

ProDAS SFX allows the sound designer to programme the sound playback for a show in a similar manner to plotting lighting. All output levels, fade times and routing can be automated with all sound effects stored digitally on an internal hard drive. Mike Palmer, HOD Sounds at The Plymouth Theatre Royal, was the first to spec ProDAS for a UK tour. After using ProDAS on the in-house production of 'The Dresser', he then applied it to something more demanding - a national tour of 'Tolstoy'.

Martin at Stringfellows

Stringfellows nightclub in London recently underwent a lighting rig upgrade, with Set Lighting & Sound installing a range of Martin Professional Roboscans and Robocolour I & II systems, as well as a number of Martin smoke machines. Control of the lighting is via a Martin 2308 controller in the upstairs area, and a Martin 3032 controller for the dancefloor rig.

Sporting Success

Owl Video Systems has announced a record first half for 1996 with a profits increase of 65 per cent on the previous year, and a record turnover for March in excess of £1 million. Monthly sales, particularly of video projectors and videowalls, have continued to grow throughout the first half of the year, largely due to the increase in demand for large screen viewing facilities during major sporting events of the summer.

Summer Drapes

Blackout, the theatrical drape and rigging specialist, has had a range of orders this summer from a diverse range of clients.

With just 36 hours to go before the Southwark conference on European air pollution began, Steven Malarkey, head of conferencing operations at the Holiday Inn (Nelsons Dock), was asked for the entire projection suite to be blacked out. Blackout were able to supply the necessary drapes with time to spare. Meanwhile, down at Hampton Court, the annual classical festival was in full swing. The fortnight-long festival features musical recitals provided by top artistes and orchestras, including names such as Kiri te Kanawa and Chris de Burgh. Blackout provided drapes for the stage and also to create a walk-way and quick change area.

Other recent Blackout projects include a Krug Champagne party at the Dorchester, the 85th birthday party of Edmund de Rothschild and a perfume launch for Christian Dior.

The Olympic Window

Referred to as the 'window' by the BBC's Des Lynam, Creative Technology's videowall created the illusion of a window overlooking the stadium. The BBC appointed CT to create the 12-cube videowall, which comprised Toshiba P4130VE cubes controlled by a Laserpoint HiWall processor.

Although primarily displaying a high definition camera shot of the stadium, the wall was also used to show graphics in 525 NTSC and to receive the BBC's own camera feeds and any provided by the host broadcaster. The wall ran for more than 600 consecutive hours without a hitch.



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Tina's Wild Wembley Dream



Tina Turner's reputation as the Queen of Rock was given a huge boost when she played two nights at Wembley Stadium in July on her 'Wildest Dreams' world tour. With her 10-piece band, featuring percussionist Timmy Cappello and singer/guitarist John Miles of 'Music' and 'Slow Down' fame, Turner treated the masses to a non-stop set of classics, from 1966's 'River Deep, Mountain High' to her latest single, a cover of John Waite's 'Missing You'.

The show was yet another this summer to highlight the unflagging American expertise of Clair Bros which, after the recent demands in the UK of Masters of Music, the Eagles and Bon Jovi, was still able to rig an awesome 140 S4 cabinet front of house system, engineered by Dave Natale and with monitors mixed by Rory Madden. The set was designed by Mark Fisher and constructed by Charlie Kail's Brilliant Stages.

Lighting was designed and directed by Roy Bennett and Mac Moiser, with Icons and VL6s supplied by LSD. With video production services by San Francisco's Nocturne Video, 'Wildest Dreams' was one of the first tours to feature Screenco's new JTS 17 Sony Jumbotrons - with a 5m x 3.6m screen at each side of the stage and an 8.4m x 5m JTS 35 at the rear of centre stage, all receiving a mixed feed from video director, Christine Short and engineer, Josh Alberts.

Mark Cunningham

'Esmerelda' Emerges

The first Cadac F-Type live production console in the US premiered on the Walt Disney Hunchback of Notre Dame launch spectacular, which took place in mid-June in New Orleans. Coinciding with the film's world premiere, Walt Disney staged a colourful parade from the French Quarter to the Superdome, followed by a stage show by Jody Benson, Peabo Bryson and a host of famous Disney voices, plus the world's largest-ever indoor fireworks display. The 32-dual input F-Type (soon christened 'Esmerelda'), equipped with Super input modules and motor faders, was supplied by ProMix of New York, and used for the orchestral mix by engineer Patrick Baltzell.

Next on the agenda for 'Esmerelda' was a high profile presence at the Atlanta Olympic Games, where it was again used by Patrick Baltzell for both the opening and closing ceremonies. A busy summer followed, with ProMix supplying the desk for the recent Para-Olympics at the Olympic Stadium and the Democratic National Convention at Chicago's United Center.

Concert Industry Raises £150,000

The concert industry joined together with the NEC Arena to celebrate the National Exhibition Centre's 20th Anniversary in mid-June and raised £150,000 for the West Midlands 'Save the Children' appeal. HRH The Princess Royal, president of Save the Children, attended the birthday concert with special guest performers including Chris De Burgh, Beverley Craven, David Essex and Cliff Richard.

In addition to the artistes, many stalwarts of the concert production industry contributed their services, including MCP, SSE Hire, Le Maitre, Concert Production Lighting, Stage Craft and Yamaha.

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Touring Tales

The *Classical Spectacular* at Milton Keynes has now passed and will not be seen in the UK again until November. If you missed LD Durham Marengi's new design, then there are one-off shows being staged worldwide.

Rhythm of the Celts is the Scot's attempt to emulate the fashionable Irish traditional dance sensation, Riverdance. The show is being staged in Edinburgh during the city's festival and several US promoters have already booked flights over to see it. Design is a conventional rig by LD Billie Adie and features 40ft trusses fully loaded with Pars, plus a couple of dozen ellipsoidals and Fresnels, whilst control is provided by an Avolites QM500.

Although *Tina Turner* has completed her stadium shows in the UK, the European leg of the tour carries on until the end of the year. The show moves to indoor venues in September and will be coming through the UK in December.

Eros Ramazzotti may not feature much in the UK, but he is a major touring artiste on the continent. Rehearsals for his current tour started in August with the tour running until November with a final show at the Royal Albert Hall. Italian LD Billy Bigliardi has designed a rig of four concentric truss circles featuring Icons, Washlights, Cyberlights and Colormags. Bigliardi runs the Avo Diamond II, while Mark Payne operates the Icon board.

Kiss are topping the bill at this year's Donington noise fest. Riding a wave of rejuvenation in the US they brought over their complete armoury; tanks, flame-throwers and the full make-up kit. LD Brian Hartley drew up an over-the-top rig with 34 Icons, 54 Washlights and hundreds of conventionals.

And finally details on the *Oasis* mega gigs. LD Mikey Howard went for a 23 ton Digi-wall video screen across the back of the stage with a Jumbotron to each side. The lighting system consisted of three large pods, 100 Icons plus Pars, strobes, Molemags and Colormags, together with eight followspots. In addition, there were 40 Icons out in the audience mounted on the delay towers. Howard also used an Avo Diamond II, while Frank Shields was operating the Icon desk.

Steve Moles

Lighting Design Awards '96



Murrayfield Stadium - highly commended in the leisure category.

The BBC Radio Theatre in London has won a Highly Commended Award in the Lighting Design Awards '96. Feature lighting has been fitted into reproductions of the original light boxes creating a range of special effects including sunbursts, colour changes and highlighting. The stage is lit through a mesh canopy by theatrical lights on barrels, whilst the house lighting includes recessed downlighters in the ceiling, special architectural features, pilasters and organ grille.

The scene setting system allows seven different

arrangements of house and stage lighting accenting. The concept for the lighting effect was produced by Equation Lighting Design, and the architects and electrical engineers in BBC Building Design. The luminaires were provided by Strand Lighting, whilst the control system was supplied by Helvar/Electrosonic.

A Highly Commended Award also went to Murrayfield Stadium in Edinburgh, home of the Scottish Rugby Union, which features a Philips Lighting system.

Martin's Magnum

Alberdi Pro, the Spanish distributors of Martin Audio products, report a spate of recent high-profile installations featuring Wavefront, ICT300 and EM Series speakers. Although the most prestigious has been at Chic Disco at Roses, Gerona, where they fitted a combination of Wavefront W8Ts, WSXs, WS-2s, and the MX-4 system controller, the majority have been in Alberdi's native city, Barcelona.

The company have carried out installations in a number of pubs and bars including Mojito (EM25s and 150s), Irish Winds (ICT300s), Tostadito (ICT300s), Magics (ICT300s), Bla Bla Bar (EM75s), George 2 (EM15s), George 3 (ICT300s) and Star Winds (Wavefront 2). All these venues are situated in the up-and-coming harbour area of the city, known as Maremagnum.

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SOL Wales & West

ENTEX have confirmed the first of their planned series of one-day trade events for the Autumn. SOL Wales & West will be held on Sunday 20th October at the Hilton National Hotel in Gwent.

This will be the fourth time the event has been staged at this venue and will provide one of the first regional opportunities to see just some of the new products released at the PLASA show in September.

The main ENTEX show, the SOL - Autumn Event, which is to be held in Birmingham early in November, promises to be one of the largest 'one-day' events this year, with a wider range of exhibitors than previously, including live PAs and other attractions of interest to the club sector.

For details call the organisers on (0973) 122484.

Tech Dept Join Up

The Technical Department Ltd has been accepted to membership of the National Inspection Council for Electrical Installation Contracting (NIC) and the Electrical Contractors Association (ECA).

Recent projects include the Skyview Exhibition at Gatwick Airport; Experience Building at Legoland, Windsor for Scena; the Croydon Lifetimes Exhibition, also for Scena and designed by Event Communications; the Imperial War Museum's Secret War Exhibition designed by Land Design Studio; the DTI Hazard Dome sited at Eureka, Halifax for Imagination, and the Fantasy Factory, Cadbury World, also for Imagination.

Mark IV Standard



Hans-Peter Richter (left), executive vice-president of marketing and sales Europe, with Wolfgang Horn, head of quality assurance.

Mark IV Audio Germany GmbH has attained the ISO 9001 standard. Within the last few months the company has worked hard to achieve extensive quality management standards, covering all aspects of the operation, from R&D through to manufacturing and sales.

SM24 in the Cast

A Soundcraft SM24 console was recently used on the UK tour of Liverpool's Indie pop group, Cast. The band held most of its concerts at University halls, where the venue sizes ranged between a capacity of 800 and 1500. The sound equipment was supplied by Liverpool-based Adlib Audio.

Electro-Vocalist

One of the most unusual tours currently underway is that of respected Australian operatic tenor Richard Winsborough. He is on a nationwide itinerary which takes in not only outdoor venues such as London's Covent Garden Piazza, but also shopping centres, festivals and theatres.

The tenor is using an Electro-Voice sound reinforcement system of a pair of EV SX200 speakers and EV P1250 amplifier.

B&H Busy

The B & H Sound Services Group have had a busy summer schedule. Working in conjunction with Cane Green, they supplied a Meyer MSL3/MSL4/DS2 system for 'Champions' at Wembley Arena in June. July saw one of their biggest events of the year, with a large orchestral system for Opera North in the ground of Temple Newson in Leeds. The company supplied control, microphones and engineering, coupled with Concert Sound's EAW KF850/853 rig.

In the same month, B&H also supplied a substantial Meyer speaker system for the Princes Trust event at the Royal Albert Hall, which included the opening performance of Phil Collins' European Tour. The system comprised MSL-3/MSL-2 and DS2 enclosures with control and monitors supplied by Dallas-based Showco.



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Philips Floodlight the Bank of England



The Bank of England in London has been floodlit for the first time, bringing this beautiful building to light long after dark. The Philips scheme was installed by contractors Rashleigh Phipps and marked the tercentenary of the famous landmark.

The atrium is lit using Philips HNF003 luminaires with 400W metal halide lamps mounted on the Corn Exchange. The front facade is lit using SNF250 luminaires with 250W lamps, whilst the columns are lit using Philips 100W lamps.

The Nynex Arena in Manchester is also using Philips equipment, and has installed the UK's largest indoor Philips ArenaVision floodlighting system. The installation uses 120 Philips MVF406 ArenaVision luminaires with 1,800W MHD metal halide lamps. In addition to the indoor floodlighting, the stadium has also installed a Philips IFS800 control system providing for various pre-set lighting levels.

Torque Tactics

Edgeworth Electronics, UK manufacturers of Torque amplifiers and speakers, have opened a new 7,000sq.ft production/warehousing facility. The latest retailers to sign up as Torque Professional range dealers include Birds (Bexhill), Craigs Music (Bodmin), The Music Shop (Walsall), Real Time Music (Chesterfield) and Stangers (Salisbury).

Creative Marketing Solutions, event organisers for Proton, used 110 Torque PA systems as part of a launch for Proton Cars in which the audience, in a live ITV Teletext link-up involving dealerships across the entire British Isles from the Channel Islands to the Shetlands, exceeded 50,000. Thorn Business Communications, contracted by CMS, supplied and installed two TV monitors, aerials and Torque PA systems.

Sub Culture

Sound and Video Contracting of Sydney, Australia, have installed a ARX MicroMax system 3km underground in the Snowey Mountains Hydro Electric Scheme's Tumut power station.

The system of four MicroMax 1 ultra compact speakers, two MicroSubs and a MicroPro processor is used for announcements and background music during public tours.

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VL Marks Fifteenth Anniversary



Early workbench tests of dichroic filters and the metal halide light source used to develop the optical configurations of the first Vari-Lite prototype.

September 25th, 1996 marks the fifteenth anniversary of the first ever event using Vari*Lite luminaires. On that evening in 1981, in a bullring in Barcelona, Genesis opened their Abacab tour, with 40 prototype Vari*Lite luminaires included in their lighting rig.

The lighting designer was Alan Owen, who had served as the group's lighting designer since 1974. Vari*Lite programming and operation was by Tom Littrel and the system was maintained by Brooks Taylor, who was a member of the original Vari*Lite development team and provided much of the design elements for the following Vari*Lite consoles. All three were employees of Dallas-based Showco Inc, where the Vari*Lite design was initially developed. Jim Bornhorst, longtime Showco audio engineer and console designer, led the team of four engineers in the development of the Vari*Lite prototype system. In addition to Bornhorst and Taylor, the team included Tom Walsh, digital hardware designer and John Covington, analogue systems designer.

Throughout the late 1970s, Showco engineers had worked unsuccessfully to develop a colour changer for Par 64 fixtures. Finally, in 1980, under the guidance of Rusty Brutsché, then president of Showco, Bornhorst and his team drew upon two emerging technologies and began considering a completely new fixture design rather than an 'add-on' colour changer for existing stage lights. The two new technologies were dichroic coated glass as a colour media and metal halide bulbs as a source. Dichroic filters were permanent and created intense saturated colours not previously seen with gel-type colour media. Metal halide sources provided a tiny point source of light which made compact luminaire design possible and provided far more output per watt than conventional incandescent sources. In addition, Taylor and Walsh had experience in previous lighting control projects at Showco and had the skills to develop a controller for the new light. It was then suggested that the light could be made to move - an idea that was accepted by all involved. An all-out effort ensued and by December of 1980, a prototype and controller existed.

At that point, Brutsché decided that Genesis would be likely candidates to preview the prototype system, now known as Vari-Lite as the 'VL Zero'. By 1980, the use of high tech effects, including image projection and lasers, combined with sophisticated music, made Genesis a 'must-see' for concert goers. Brutsché and Bornhorst flew to London to present it to Genesis who were rehearsing at their studios in the English countryside. Following a brief demonstration in a nearby barn, Vari-Lite's future was assured and the rest, as they say, is history . . .

Spoleto Festival

Spoleto lies to the east of Monti Martani, some 100km north of Rome. Each year it is the focus of a unique arts festival and over a period of 19 days from late June through into July a series of operas, ballets, orchestral concerts, musicals and art exhibitions are staged.

One of the venues this year was the Teatro Nuovo, where five different productions were staged during the festival. In view of the fact that an international array of designers would light the various shows, lighting designer Sergio Rossi chose one of the new generation of 430/530/550 Strand Lighting consoles. All were able to play their show disks without any hint of non-compatibility and use their pre-prepared cues, as well as being able to re-use or re-edit their work on return to their home country.

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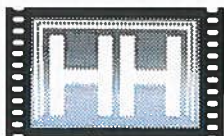
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Ready to Go Racks

C Audio have fulfilled an unusual order for their Egyptian distributors, Nando Music. When the company's Hany Hanna wanted to put together a touring rig his first consideration was to buy British and his second was to request four fully-equipped C Audio amp racks, totalling 22kW of power, to drive the eight Turbosound Floodlight stacks that also formed part of the order.

C Audio international sales manager, Richard Moore, told L+SI: "Nando wanted the four racks all supplied and fitted for use on a variety of functions - from rock concerts to political meetings - cabled up and ready to plug in. While we don't usually do this sort of thing, we were happy to oblige. We had the racks made up and physically wired them in-house."

Each rack contains just over 5kW of power, the amp modules consisting of an XR3801, an SR707, an RA 3001 and a RA1001.



Canford Stake in Lee James Electronics

Jarrow-based Lee James Electronics is to become part of the Canford Group, based in Washington, Tyne and Wear.

Lee James is one of the country's leading manufacturers of cassette recorders and its Neal brand equipment is used extensively by the police and judicial systems. The company has signed an agreement with Canford which has led to the latter taking an equity stake in the business with a management contract to run the company.

Lee James' founder Alan Helliwell is to retire, and his co-founder Duncan Mitchell will continue to be responsible for product development and manufacturing at the Jarrow works which employs 25 people. Whilst the Neal brand is predominantly sold in the UK, Canford intends to mount an export drive for the product range which they feel has yet to reach its full potential in the overseas market place.

ARX Worldwide

ARX Systems, the Melbourne-based pro audio manufacturer, has opened an office in Salvador, Brazil to service the South and Central American market. Joe Campos will head ARX's distributor support and service office. The company has also appointed Narita-based South House Inc as distributor for their range of signal processing products in Japan.

Double Dutch

Stage Electrics and Set Reaction, both Bristol-based companies, were chosen by The Set Connection to undertake a major refurbishment of the Central Plaza within the Center Parcs holiday village at DeEemhof in Holland.

Stage Electrics have supplied and installed a complete lighting rig consisting of a Strand Lighting Premier system and 120 ways of LD90 dimming. Throughout the plaza and restaurant outlets, 450 architectural luminaires are fitted, a high percentage of which utilise coloured glass for longevity. All the fittings chosen for the project conform to the relevant IP standards to withstand the harsh environment, which includes a regular soaking from a hosepipe!

This is the third major refurbishment for Center Parcs undertaken by the two companies, along with lighting designer David Atkinson, and it marks their second project in Holland.

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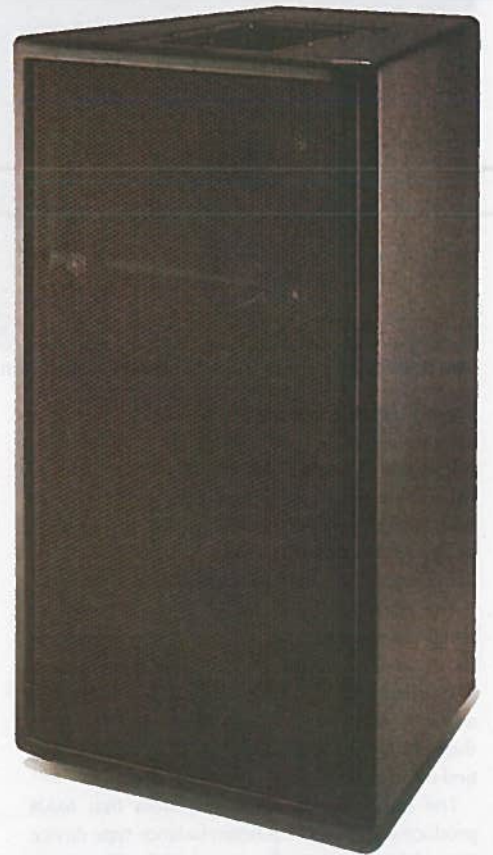
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MAN Flies at the Royal Albert Hall



The new flying system in situ at the RAH for Clannad.

When Clannad played at the Royal Albert Hall, the appearance of Dick Hayes from PA supplier Entec might be expected, as might that of Simon Johnston from d&b audiotechnik (whose hardware Entec were providing), but the addition of Mick Nash de Villiers from MAN who built the flying system, pointed to something different.

The attraction was a new three cabinet wide hanging apparatus from MAN - the barely one year old 'Transformer system'. This system addresses a fundamental question: in such a high-tech environment, why do flown PA clusters still have their direction adjusted in mid-air by bits of string tied off to parts of the stage or lighting rig?

The basis of the hanging system that MAN produce is in essence a beam balance type device that addresses not only control of the PA system beneath it, but one which also gives consideration to the stresses and forces at work in such a system. Looking at the two-wide beam for simplicity, this is a fly bar designed for single hoist pick-up with a floating, ball-joint type device at the point of connection that allows for 15 degrees of tilt in any direction from the beam at horizontal. The position of the ball-joint is adjustable 12cm to the left or right of centre. Beneath are two smaller beams, also fixed by floating joints, that attach by chain and MAN's widely used keyhole plate device, to the two-abreast cabinets.

By means of detents along the length of the upper beam ('detents' are not dissimilar from the notches on beam balance type weighing scales

found in any doctor's surgery), the position of the two lower beams can be adjusted laterally. For example, a column of cabinets three deep, plus a column of two could be hung from the beam, and by means of the detents and adjustment to the single upper point, the inherent imbalance of the load can be relieved.

The adjustment allowed for thereby achieves two things; one is simple, the aesthetic look of the hang, the other more complex. Visualise the above described 3:2 cabinet

hang as a pendulum - without the ability to balance the load it would hang at a slant. If you brail the high side down to restore the flybar to horizontal, the pendulum will transfer the imbalance force into a swing to one side. On a single point pendulum this may be of minor significance because the flown cluster would be four or five centimetres off the original dead hang of the point. If, however, the motor is rigged by a bridle, then the forces exerted on the different legs of the bridle are altered. The load's centre of gravity is no longer directly beneath the convergent point of the bridle.

In the case of bridles where one leg is at a relatively acute angle, this transference of force is potentially catastrophic, as the dynamic effect of the load increases almost exponentially. The German authorities are already examining this. It may well mean that strain gauges will be installed - in-line - on bridled points in the future.

The other feature of the system is directivity. d&b is not alone in producing a PA system with highly accurate projection profiles that allow the sound engineer to cover a venue in much the same way as a lighting man might focus his rig to cover a stage in a uniform way. Each hanging beam that attaches to the cabinets has precisely engineered bottle-screw type devices that allow for angling of the column beneath for precise aiming.

When two or more flying beams are joined together, a rear spreader bar is attached that, by means of an equally precise, though somewhat larger screw jack mechanism, controls the angle

relative between the two main beams. All links for these two adjustment devices are floating which, coupled with the ball joints of the beams themselves, makes for an over-all system that is lively to say the least. Simon Johnston was the first to say: "It's a bit of a brute, but it works."

The system was initially developed as a two-wide configuration in conjunction with d&b in Germany. WigWam in the UK (and more recently Entec) warmed to it as it was effective, precise and easy to use, lifting straight out of its flight case by chain hoist. Wigwam initially wanted something similar in design to the two-wide, but having used the two-wides for just over a year, they contacted Simon Johnston to tell him that they'd done things with the system that they hadn't dreamt possible and now wished to try a three-wide that was totally flexible.

The result lacks the simplicity of its smaller cousin: it has a triangular frame approximately six feet wide and three feet deep, the depth being necessary to allow the centre column to track up and down stage, relative to the two outer columns. This additional movement parameter allows it to be used in conjunction with other beams for wider wraps.

As with the cluster hung at the RAH, the sound crew can calculate the settings for all three of the main beams, so that at the bottom of the six-deep cluster, all the back edges of the cabinets are in close contact, fanning upwards to form a perfect half hemisphere. The number of interacting adjustments make calculation tricky - luckily d&b have a software package that will do it for you. Ironically nick-named 'NightmareCAD' by de Villiers, the package, developed in-house by d&b, will give the format of an array, produce a table of the system settings, an accurate rig plan, and a 3D rendering of what the array will look like.

The truth is, for all its precision, the system is none too friendly to the novice. The setting of the cluster does take a little time, but all the adjustments - detents, bottle screws and spreader bars - have clear markings in degrees or centimetres. Fortunately, d&b recognise this and are in the process of developing a short course for PA crew to familiarise themselves with the system. From the point of view of the end user, the results seem worth the effort. Clannad's engineer Tim Martin was certainly happy, whilst Dick Hayes from Entec was especially pleased: "Many people commented on how good the sound was. The system is worth it even if it is going to take a little time and patience to get used to it."

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Scancommander Workshops



Coral Cooper is seen here (second left) with some of the participants on the M&M/Vari-Lite Europe workshop.

MA Lighting demonstrator Coral Cooper recently ran a series of workshops, arranged by MA Lighting's UK distributor M&M, on the use and programming of the MA Scancommander. Three two-day workshops took place at the offices of M&M and a fourth, three-day workshop was arranged in conjunction with Vari-Lite Europe. The two-day workshops provided the participants with personalised tuition on the Scancommander and an overview of active systems, while the three-day workshop, at Vari-Lite Europe's premises in Greenford, was aimed at people who already had Scancommander experience, but wanted to augment their skills.

Cooper, who was joined at Vari-Lite Europe by Andy Voller, the company's training manager, said that because of the sophisticated technology involved, people using Vari*Lite automated luminaires in conjunction with a DMX system often could not decide whether a particular problem had occurred with the lights or with the desk. She and Andy Voller had planned the course to give participants the technical support and experience needed to understand both systems. Also included as part of the workshops was the Vari*Lite DMX Installers Course, without which users cannot hire a Vari*Lite system.

The two-day workshops, held at M&M's offices at Camden Lock, were dedicated to the use of the Scancommander. This is slightly different to conventional desks and the workshop was designed for lighting designers who want to extend their capabilities. Participants in both the two and three-day workshops included freelancers and lighting designers from theatres and sales and rental companies.

The prize for those who had made the longest journey went to Gunnar Gunnarsson and Freyr Vilhjásson, who had travelled from Iceland, where they work for Exton, Iceland's largest lighting company.

Strand's Kirkcaldy Milestone

Strand Lighting's Kirkcaldy factory recently celebrated a memorable anniversary when the 5,000th LD90 dimmer rack, and the 25,000th Quartet spotlight rolled off the production line.

The latest version of the LD90 rack is a touring version, aimed at the music and theatre markets. Among the many features are hot-patching on 60 channels and grounded outlets for English 15A, French and German plugs.

A multi-language, menu controlled, input terminal handles adjustments including output voltages, dimmer curves and dimmer identity. The LD90 rack has a storage capacity of 99 scenes per cabinet, each can be called up by external keyboard. Control can be standard DMX512 (USITT 1990), SMX, D54 and Analogue from 0-10V (any polarity).

The Quartet range of spotlights continue to provide the lighting option for small theatres and studios, schools and display lighting, and a recent success for Quartet was lighting those famous Oscar winners Wallace & Gromit.

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The System One was followed by the S2 Auto Diversity System.

And, once again, the music industry applauded. But so too did broadcast companies, theatres and council chambers - in fact, praise came from everywhere that microphones are used.

From the economically priced S1000 (over 20,000 sold) to the professional broadcast S2 True Diversity System, BBM Electronics now produces a range of Trantec VHF products for the most demanding, and in some cases, unusual applications.

Recently we added to our range by introducing our first UHF microphone system, the Trantec S5000. The S5000 combines superb audio quality with great looks at a highly competitive price. The S5000 has already made a considerable impact in the conference and theatre industries throughout Great Britain.

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LMC Purchases 200th XL200



To celebrate the sale of their 200th Midas XL200, Mark IV Professional Audio Group invited the purchaser, Dave Wiggins, of UK distributor LMC London to join them in a glass of bubbly at the Kidderminster factory. The desk, introduced just last year has, according to Mark IV, exceeded all sales predictions in the UK.

Albert Square Gets Miked Up

BBC Resources recently purchased 15 Sennheiser MKH RF studio condenser microphones for use on EastEnders. The order, for five figure-of-eight MKH 30s, two cardioid MKH 40s, five hyper-cardioid MKH 50s and three short gun MKH 60s, from Sennheiser UK, is for use on 'the lot' or as it is more commonly known, Albert Square! The microphones will be used for a variety of applications on the set and on 'away' locations during the filming of special episodes.

Future World Festival Cancelled

The Future World Festival originally intended to take place in late July in Hastings, was postponed at the last minute. The organisers, Future World Promotions Ltd, a voluntary group who have been planning the event since last year, have been dogged with problems ever since the local council refused a request for funding earlier in the year.

The original proposals for the event included a Music Technology and Multi Media Exhibition which had attracted the participation of companies such as the BBC, Roland UK, Hohner Guitars and Mindscape International, to display all the latest advances in technology and encourage new business links for the town.

Creature Comforts

Using the Allen & Heath Sys-Link system, Jim Henson's Creature Shop are constructing an animatronic gorilla for their forthcoming picture 'Buddy'. Three A&H GR1s have gone into the making of the cyber-beast.

James O'Connor, electronics supervisor for Hensons, explained to L+SI why there was a need for sophisticated technology: "We need to be able to take several different signal sources, mix them all together and then provide several different output mixes. Using the A&H GR1 means we can link the mixers together using Sys-Link, making it possible for the signal sources to be fed to one mixer with the required amount of other mixers chained from the first."

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Man on the Moon

The refurbishment of the Man on the Moon, Bass Tavern in Birmingham, includes an audio and audio-visual entertainment system which maximises the growing popularity of in-pub discos with live DJs. The system, supplied and installed by Chrysalis Retail Entertainment, includes a permanent DJ booth fitted with sophisticated audio equipment and disco ambient lighting.

To ensure guest DJs provide customers with quality audio and visual entertainment, Chrysalis has installed the latest music decks and speakers. A smoke machine and sophisticated rave, monster moon, hyper moon, wild star and twister lighting have also been included to create abstract visual effects



and a 'dance club' atmosphere. Chrysalis has also installed a large screen projector which is used to show sporting events such as the recent Euro '96 and the Olympics.

Blue Ribbon Award for Peavey

Peavey Electronics has been honoured in the USA with one of EQ Magazine's Blue Ribbon Awards for its MediaMatrix Miniframe. These awards were presented to the most innovative products introduced at the 1995 Audio Engineering Society (AES) Show.

Peavey's Architectural Acoustics division introduced the MediaMatrix Miniframe at AES with the intention of making the technology available to smaller venues. A profile of Peavey's UK operation starts on page 106.

Barco at College

London's Imperial College, one of the UK's leading technical universities, has specified Barco projectors for its lecture theatres. A number of BarcoData units will be installed at the college during a three-year refurbishment programme.

The contract was won by Barco authorised dealer, Metro Anglia. The plan is to put a projector into each of the 42 lecture theatres as renovation is completed.

MTV's Full Force

MTV's television studio complex in north London has recently purchased six Sennheiser UHF multiple channel radio mic systems, from Sennheiser dealer, Marquee Audio.

The system comprises six EM2004 switchable frequency receivers, in a fixed position and four EK4015 miniature, camera mountable, true diversity receivers, along with six 16-channel switchable SK50 UHF belt-pack transmitters. MTV are using the Sennheiser system on a live summertime special called Hanging Summertime. The show involves presenters interacting with the studio audience and viewers at home, as well as live performances from the likes of The Back Street Boys, New Edition, Let Loose, Joan Osbourne, Alice In Chains, Peter Andre and Iggy Pop.

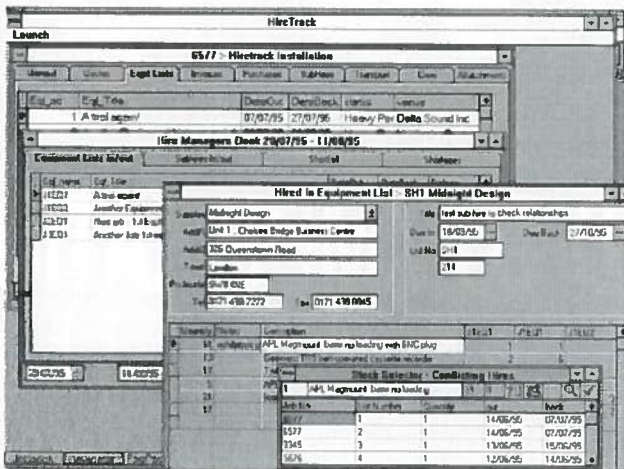
The EM2004 receivers are permanently installed in MTV's Studio A, but by using a combination of antennas, routing, splitters and an RF DA, the radio mics can be used in two locations simultaneously, whilst maintaining true diversity operation.

Golden Scan Purchase

Stage Electrics have recently added 14 Golden Scan HPEs to their hire stock. The Golden Scan High Performance is at the top of the Clay Paky range of moving mirror luminaires and features a 1200W HMI lamp. The unit provides 113 colour combinations with its dichroic and special effects filters, and incorporates five fixed and five variable speed gobos. The new enhanced lens system provides a beam angle of up to 24 degrees

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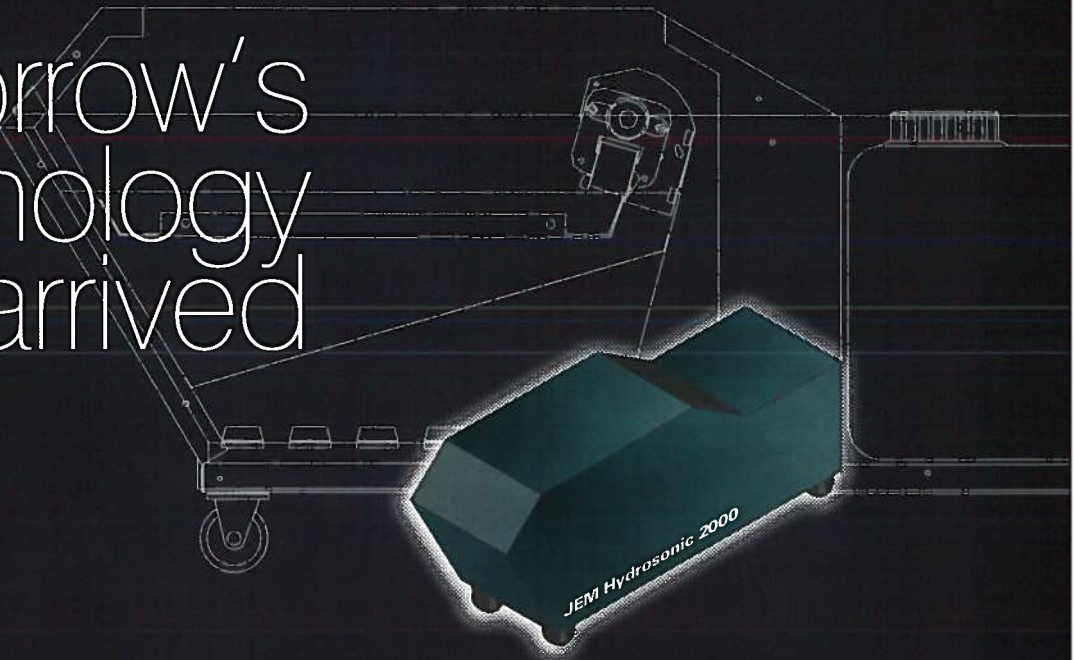
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Specification for JEM Hydrosonic 2000 incorporating 'HOT Technology'.

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Phoenix Rises from the Ashes



In late January this year, a massive fire ravaged the world-famous Gran Teatro La Fenice in Venice. The city's administration acted quickly and a huge tent was erected in the Tronchetto quarter of the city. It covers an area of 3,000sq.m and in addition to offering space for an audience of 1150, houses dressing rooms, a foyer, box office and store rooms. In providing and installing the complete lighting control, Josef Baumann and his team from Transtechnik, Holzkirchen, set up a fully functional control system for the entire lighting in just two days.

On March 22nd, just 53 days after the fire, the new 'Opera House' staged 'Don Giovinia' - unfortunately, the original La Fenice is not expected to reopen until after the year 2000.

Fax Your News to L+SI on (01323) 646905

Technology Wins the Race to the White House

Vari-Lite Chicago supplied the automated lighting for the Democratic Convention which took place in August at the United Center. Lighting designer Bob Dickinson and lighting director John Morgan used a Vari*Lite system comprising 94 VL2Cs, 115 VL4s, 34 VL5s, and 34 VL6s. Eric Hanson, manager of Vari-Lite Chicago, explained the challenges involved in preparing for this convention. "Due to the 1996 Democratic convention's extensive staging and set requirements, the entire stage lighting system had to be set up and flown six weeks prior to the convention and much of the seating on one side of the arena and its respective concrete support sections were removed by crane to make room for the stage sited 'courtside'."

At least there is one thing the Democrats and Republicans have in common. They will both depend on Garwood's PRSII systems. The PRSII in-ear monitoring systems was used for a new application providing high-quality wireless audio communication links for all of the Voice of America's broadcasters during the conventions.

Professional Wireless Systems of Florida supplied the systems to VOA, who broadcast in 43 languages to 1,300 local stations in 119 countries. Over 1,500 separate channels of RF were used at each convention.

The Democratic convention facility seats about 25,000 people in the United Center in Chicago, whilst the Republicans were at the San Diego Convention Center with fewer attendees - however, it was their show that presented the biggest problem. Ceiling heights in the Center

reach only 27 feet in places, increasing the risk of multi-path cancellations. Also the level on the floor was estimated to reach 120dB in the speech range.

Broadcaster Jim Malone anchored for Voice of America. Prior to receiving the Garwood system, Malone used to wear an audio receiver with a remote amplifier on the floor, which he found cumbersome. The Garwood LV1 receiver is the size of a pack of cigarettes and weighs just eight ounces. The freedom of movement offered by the system is a key factor for the media.

NOW ninety6

The NOW ninety6 Festival of Art for Today, will run in Nottingham from the 19th October to the 17th November. The Festival celebrates the best in contemporary theatre, digital imagery and new technology.

One of the key features of the Festival will be a live digital and video link-up between leading UK and European clubs. Known as The Digital Club, the event will see a nightclub in Nottingham linked to the Shamen's The End which will share video conferencing facilities with London's Megatripolis. A performance by Zion Train will be transmitted to each club.

For further details on NOW ninety6 contact Communique on 0171-700 5346.

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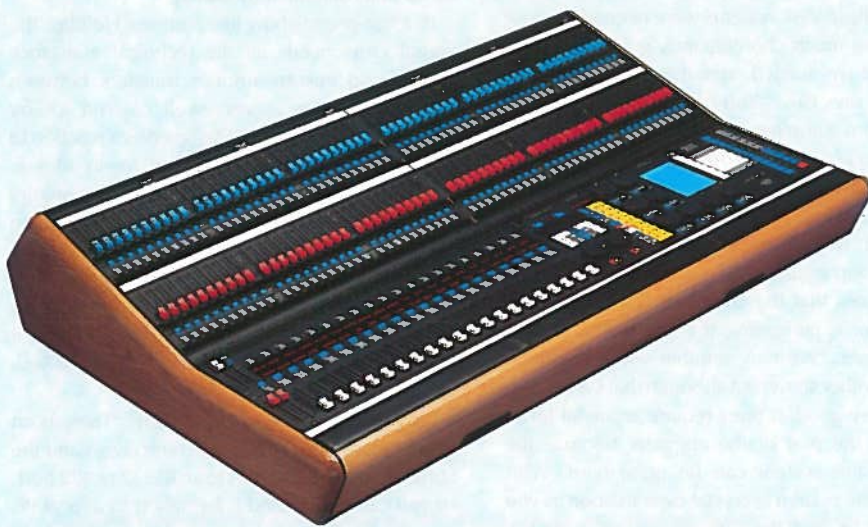
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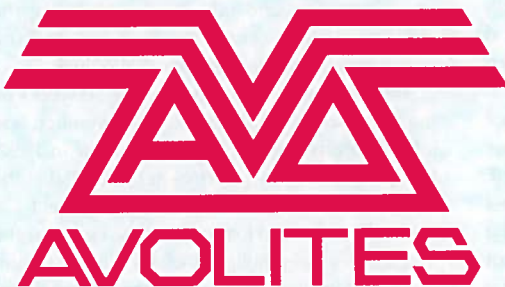
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Trantec on a Summer Holiday



Above: Trantec's mics in action on the stage at Blackpool.
Below: monitor engineer Digby Shaw with the Trantec S5000 rack.

A new stage musical adaptation of Cliff Richard's Summer Holiday movie of the early sixties has seen audiences singing and dancing in the aisles since June at the 3,000-capacity Blackpool Opera House. Named after the movie, the show chronicles the holidaying adventures of Don, played by Cliff lookalike and soundalike, Darren Day, and his chums as they set off for Athens on a London Transport double decker bus. The sort of thing we all used to do as teenagers, really!

The Sound design was by the triumvirate team of Graham Simpson, Peter Cox and Rick Price from Jim Davidson's Effective Productions which supplied the entire PA rig and associated systems. Engineered at front-of-house by Rob Summers using both a 52-channel Yamaha PM3500 and a 24-channel PM3000 console, the proscenium PA system consisted of four Lab Gruppen 2000-powered Nexo PS15 cabinets both in the stalls and the circle, while a pre-rigged truss supported a vocal cluster of eight Nexo PS10s which were driven by Lab 1300 amplifiers.

Placed around the auditorium were 30 JBL Control 1s as delays, with delay times calculated to an on-stage mid point by Summers' experienced ear. Four Apogee A5s were placed in the gallery and more Apogees in the shape of A2s were at the front of the stage. Meanwhile, facing the audience at each side of the stage were two Meyer Sound 650 subs. All of the non-Nexo PA elements were powered by a combination of Crest Audio 4001, 4801, 6001 and 7001 amplifiers.

When Summer Holiday was in its planning stage, Effective Productions spent a considerable time sourcing the optimum wireless microphone system, knowing that a large amount of individual UHF channels would be required for the cast. Effective's Peter Cox says that although Sennheiser was suggested as an industry standard, the timing coincided with that manufacturer's shift to its SK-50 system and his budget would not entertain such an investment.

But it was also at that time when Cox recalled meeting Chris Gilbert of Trantec at last year's



PLASA show where he was treated to a demonstration of the company's new S5000 UHF system with computer interface, which he eventually purchased, bulk-style, for the Blackpool production.

"When we were getting ready to go out with Jim Davidson's Sinderella and needed a radio system, I got in touch with Chris Gilbert and took a 12-way Trantec system which we were very pleased with because it did everything a theatrical radio system should do, and a lot more," explained Cox.

By the time of Summer Holiday's production rehearsals, it was decided that the 12-channel system would be updated with an additional four receivers and transmitters to create a 16-way system for the 16 Sennheiser MKE-2 lavalier mics, customised as headsets by Trantec especially for the show.

Ten hand-held VHF systems were specified

for use on the all-singing and all-dancing medley finale. "These VHF systems were needed because there is so much choreography going on at that point and we needed something that was really kicking," says Cox. "You can get a fairly forceful sound from a lavalier, but in this situation, with a full-on rock and roll sound, and people literally shouting the songs, we found that only the hand-helds would cope. Also, the band were on stage with two guitars, so we needed something that also had a guitar pack package."

Cox states that the choice of Trantec's S5000 came after experiencing the shortcomings of a rival system. "We have another wireless system out on another show, but although that system can sound very good, it does require an awful lot of work on the part of the engineer because the compression system can be quite hard. With Trantec, the system is crystal clear as soon as you switch it on and the little compression that is present is very gentle. There is also a high headroom threshold on the transmitters and receivers, which means that we can easily match capsules without coming unstuck."

Trantec's Chris Gilbert says that the Blackpool crew are currently running the maximum number of individual frequencies legally possible on VHF (173.8MHz through to 216.1MHz) and Channel 69. It is possible to run larger systems by using other UHF channels such as 22, 24, 25 and 35, but the advent of Channel Five television will reduce that availability. "To run 16 channels in one

television band is something that no else seems to have been able to do, 14 being the maximum. We weren't certain it would do 16, we guaranteed 15, but Effective Productions requested 16!" commented Gilbert.

"The VHF units are crystal controlled with 10 specific spot frequencies. All of the UHF units are identical and you can change frequency just by dialling it up. Within each receiver unit, you can have a maximum of 64 different frequencies, but we have to limit them to adhere to UK regulations. In the USA, on the other hand, we have 30-channel systems running. Because this is a fully synthesised system, companies like Effective don't have the problem of having to organise 16 separate rentals for one frequency."

Radio systems and Soundcraft 500 monitor desk engineer, Digby Shaw explained how the 16-channel requirement was arrived at. "As normally happens, we were sent a script and it was up to us to run through it so we could decide on how many characters would need a pack. If you have a script with 30 or 40 cast members in it, and you obviously want to attempt to cover the lines from each one of the cast as you possibly can, if cost and frequency availability allows it, you'll supply a pack to each of them. But we've had to design a kind of pack choreography which allows packs to remain with the 10 main characters at all times, and others are shared. There are 12 pack changes in total during the whole show, although they all have their own mics."

Shaw observes from experience that the back-up protection of the S5000 system leaves little space in which fate can deal a blow. If a transmitter pack fails, the engineer is relieved of the time-consuming task of searching for a pre-tuned replacement. Quite simply, any pack will do. Being digitally-locked, the engineer is able to tune a pack to the corresponding frequency and be up and running immediately.

In a fast-paced show like Summer Holiday, the sound crew needs all the technical assistance possible to ensure smooth transfers between scenes, and this is very well catered for by Trantec's S5000 system. Designed as a reaction to demand after the 1995 Frankfurt Musik Messe, this Windows-based software package monitors and reconfigures show scenes and a performing cast, as well as identifying receiver status. The prototype was first shown at Audio Technology '95 and last September, Trantec was able to demonstrate the whole system for the first time at PLASA, where it was honoured with the Best New Product award.

Chris Gilbert explains the design: "There is an interface unit which links all 16 receivers and the output from that unit goes to an RS232 or 422 port, so you can either send information to a local PC or up to the FOH desk by a multicore. With help from Peter Cox and others who are using the system in real scenarios, we are making improvements to the software all the time.

Summer Holiday will have run for 30 weeks by the time it closes in Blackpool in November, and it looks set to play in London sometime in 1997. Ironically, it might well arrive in the capital at the same time as Cliff Richard's latest project - a musical version of Heathcliff - a far cry from the character of Don. Still, if it keeps him off Centre Court at Wimbledon, it can only be a good thing.

Mark Cunningham

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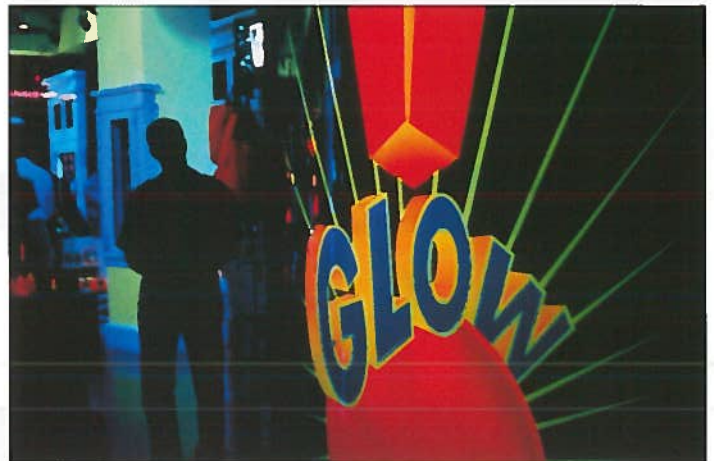
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Universal City Begins to GLOW!



Universal's CityWalk Universal City, California will 'illuminate' its current mix of entertainment with the American unveiling of GLOW! Conceived as an entertaining shopping experience for both residents and tourists, the 1,100sq.ft GLOW! will feature a number of state-of-the-art interactive elements, monumental displays, sleek facades and interiors and a vast selection of entertaining glow-in-the-dark product for adults and children alike.

GLOW! will feature a diverse assortment of merchandise inspired by the quest for glow-in-the-dark product. A darkened environment will allow the products to glow to their hearts content. Much of the 'glow' in GLOW! can be attributed to lighting equipment, special effects materials and design skills of Wildfire Inc. The foundations of the Wildfire effect are their Long-Throw UV-A lighting fixtures. These state-of-the-art projectors throw intense black light over 100 feet and several of these can be seen in action in GLOW!

Canegreen Gets Classical

UK rental company Canegreen's summer projects have ranged from rock and pop tours through to corporate presentations and classical concerts, including the Radley Lakeside Proms in Oxfordshire with engineer Andrew Frengley, and the Bournemouth Sinfonetta at Wilton House. The system is based around the Klark Teknik DN3600, a dual-channel 30-band digital EQ with a 66 programme memory.

"At Radley we had over 140 inputs and used four DN3600s in stereo configuration for a complicated Front of House and delay sound reinforcement system," Frengley told L+SI. The DN3600's ability to store settings is a major plus, and the 0.5dB-accurate increment display and notch filtering are extremely useful."

As well as classical events, the DN3600s have been on FOH and monitor duties for the majority of Canegreen's recent productions, including George Benson, Patti Smith, Van Morrison and Ray Charles. Two DN3600s are also due on the forthcoming Paul Weller tour as EQ for the FOH mix.

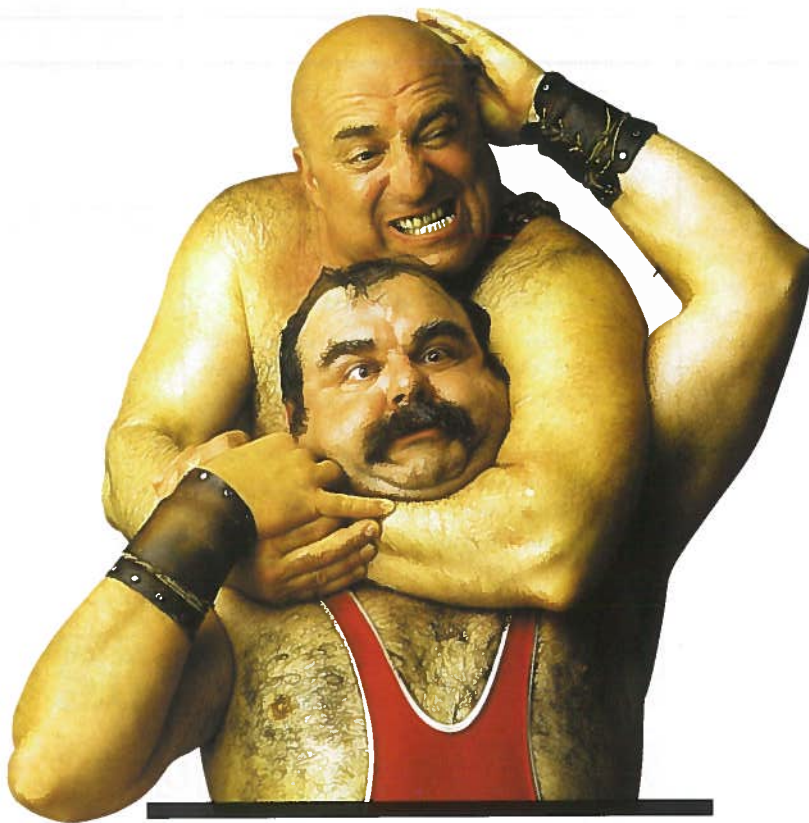
World First for Sysco

Ground-breaking technology has been installed in a Scottish council chamber whose delegate conferencing system allows complete real-time video and audio synchronisation within the chamber.

Considered to be a world first, the system installation at the South Lanarkshire council chamber by MacMillan Video in association with The Systems Company (Sysco), comprises 125 Brähler stations, all synchronised to three video cameras within the chamber, allowing council members to appear simultaneously on two video screens during a speech. Each Brähler station contains a microphone and internal loudspeaker, plus request and talk buttons. Delegates initially request to talk before beginning their speech, at which point, Panasonic Control cameras automatically pan to the delegates and project the image to screens left and right of the Chair.

All audio is controlled by an AMX system, linked to the Panasonic camera control using a custom designed interface and software programme developed by Sysco. Other features include Chair over-ride and real-time two-way audio and video communication with meetings elsewhere.

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Theatre Design '96

The Society of Theatre Consultants has organised an exhibition - Theatre Design '96 - illustrating examples of new and innovative British theatre design and architecture. The intention of the exhibition is to bring together a collection of designs from British architects and consultants featuring projects completed in the past five years alongside those to be completed by the year 2001.

The submissions have come from members of the Society, architects and performing arts organisations and the exhibition not only represents theatre design in Britain, but also demonstrates the contributions British architects and consultants have made to projects abroad. Theatre Design '96 has evolved into one of the most comprehensive and representative exhibitions of theatre design projects for the new millennium. The exhibition features a number of projects currently at different stages of the construction cycle including The Maltings, Berwick; Gran Theatre Del Liceu, Barcelona; Basingstoke Theatre; Cardiff Bay Opera House; the Cerritos Centre for the Performing Arts; Festival Theatre, Edinburgh; Glyndebourne; Royal Court Theatre, London; Sadler's Wells, London; Lowry Centre, Salford and the Wycombe Swan.

The exhibition appeared at the Royal Institute of British Architects in May 1996, and has since appeared at a number of international conferences. *There will be a further opportunity to view the exhibition during PLASA '96 at Earls Court in London.*

UK Light Jockey Final

The Grand Final of the DI UK Light Jockey of the year 1996 is being battled-out at the Ministry of Sound as we go to press. Sponsored by Clay Paky and Pulsar, the competition has been running over the past four months hosting heats all over the country, with support from various Rank Leisure clubs and independent clubs, including London's Limelight and Complex.

The winner will receive the coveted title of 'UK Light Jockey of the Year 1996', a gold Pulsar Masterpiece 108 and a £500 cash prize. For the first time, the winner will also receive a hand sculptured trophy and will be presented with their award at the DI Entertainment and Technology Awards on Sunday 8th September 1996.

For details of next year's competition, call Pulsar on (01223) 366798.



GL3000 at Gasyard

Northern Ireland's REA sound used their 32-channel Allen & Heath GL3000 for all FOH activities during this year's third Gasyard Festival, with another 24-channel version in the monitor role. As many as 11 bands per night played over the four-day festival. REA Sound now have 24 and 32-channel GL3000s, as well as a GL2 and a GL2000 in their inventory.

Lasers at Longford

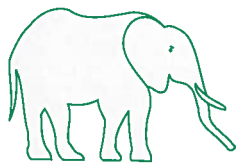
Longford in Ireland was subjected to a unique experience in late July when the Heineken Hysteria Music festival arrived in town. Hertfordshire-based Laser Grafix were commissioned to provide the Pink Floyd's Copper Vapour Laser as part of the finale, alongside Phoenix fireworks of Dublin who finished the display with an awesome Brocade.

Not seen for two years since its debut on Pink Floyd's World tour, the copper Vapour was firing gold and green beams and scanned patterns of light into the Irish night sky, visible for some 10 miles distant.

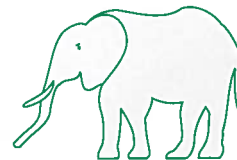
CITC Special Effects

CITC, the USA-based special effects equipment company whose founder is film effects co-ordinator, Gary Crawford (ET, 2010A Space Odyssey, Highway To Heaven), has now begun to manufacture a line of affordable special effects equipment.

Some of CITC's recently manufactured products include Fantasy FX spray smoke, the CFS-2000 Chiller, Hurricane Fans I and II, the Little Blizzard snow machine, the Double-C Swivel Clamp, the Cycle-Timer, and fog, bubble and snow fluids.



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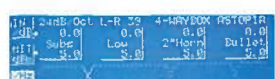
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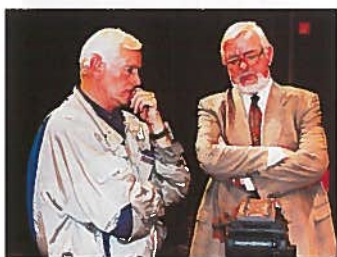
ARRI's Tales of Bavaria - Part 2



ARRI GB (led by Derrick Ross and Nick Shapley), with members of the British Society of Cinematographers (BSC) and Society of Television Lighting Directors (STLD), at the company's headquarters in Munich.

Following our news piece last issue on ARRI's three-day visit to their extensive facilities in Munich, more photographs have come into the offices of Lighting+Sound International. The visit included a tour of the camera manufacturing and rental departments at the Turkenstrasse HQ, together with a look-round the laboratory and on-site studio facilities. The following day the group visited the ARRI rental facility on the outskirts of Munich, were given a privileged look at the vintage car collection of Herr Arnold (son of one of the original founders of ARRI) and a lighting product presentation at the beautiful Kloster Seon, where the group were able to see some of the new products launched in the last 12 months. One of the highlights was the new Compact 4000T (a little brighter than the 400 we printed last month), available in 2.5k and 4k versions, alongside a motorised version of the Studio 2000.

Further new products were promised for launch shortly, including a new Pocket Par single-ended HMI; the ARRISUN 2 - a 200W single-ended HMI; the ARRISUN 5, a 575W single-ended HMI; the Compact 125, a baby brother to the Compact 200 and lastly, a 575/1.2kW Universal Electronic Ballast for flicker-free lighting.



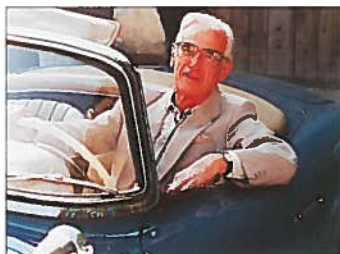
DOP Tony Impey (left) with Derrick Ross, managing director of ARRI GB.



LDs Roger Duncan (left) and Geoffrey Thonger (centre) discuss the new Pocket Par with ARRI's Juergen Matthaues.



DOP Ashley Rowe (left) shares a glass of the famous ARRI distilled lens cleaning fluid with Nick Shapley.



Lighting director Bill Lee looks right at home behind the wheel of one of Herr Arnold's vintage cars.



Lighting gaffer Ted Read (left) with Derrick Ross, Barrie Guy of ARRI and the ARRISUN 5.



DOP Lawrence Jones (centre) enjoys the ARRI hospitality from Derrick Ross, Juergen Matthaues and Bob Williams.



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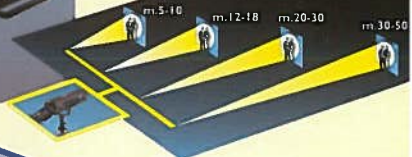


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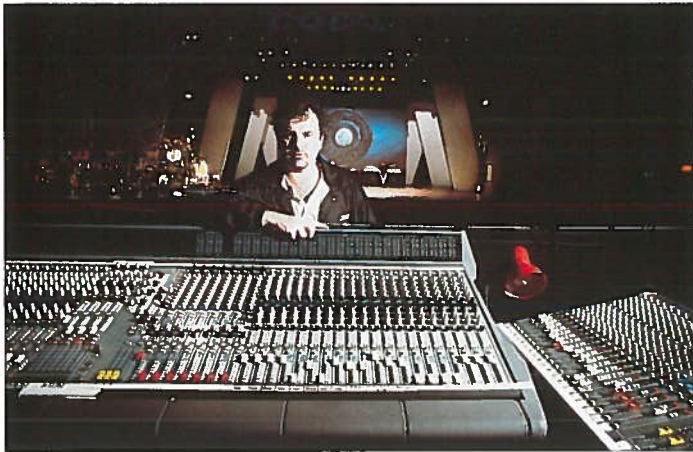
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New Sound System for Riverdance



Not one to rest on his laurels, sound designer Mick O'Gorman has specified a complete upgrade to the sound system for Riverdance: The show, including the purchase of 40-channel DDA QII and 32-channel DDA CS3 mixing consoles. Using the desks in left-centre-right mode, the show's sound engineers can assign featured items, such as solo instruments, to the centre speaker cluster, giving them vastly enhanced presence in the mix.

The system, sourced by contractors The Mikam Sound from UK distributor PAG Direct, employs EV DeltaMax speakers for front-of-house and EV Sx200s driven by EV Precision amps for foldback. The stage front fill-in and surround system speakers are Electro-Voice S40s, again driven by Precision amplifiers.

Although the sound system had already received favourable press coverage O'Gorman is committed to improving and extending the audio for the award-winning show. "The audience has a right to expect top quality, so I have to be in tune with the latest development in audio. If that means a redesign, so be it - I just want my systems to be state-of-the-art," he told L+SI.

Riverdance, a firm favourite around the world with its combination of traditional Irish choreography and music, is back in London for a projected nine month residency at the Hammersmith Apollo.

Moscow's Music Show 96

From 16th-21st September 1996, Moscow's Expocentr will be the setting for Music Show Equipment 96 - the second international exhibition of show, performance and musical instrument technology and equipment to be held in Russia.

The previous show was a great success, with around 80 exhibitors, including a number from Western countries, keen to explore the possibilities of the Russian market, which is valued by experts at around US\$150m. Last year the show attracted over 50,000 visitors, 10,000 of which were professionals and specialists in the industry. This year, 120 exhibitors from 10 different countries are expected to participate - a significant increase on last year's show.

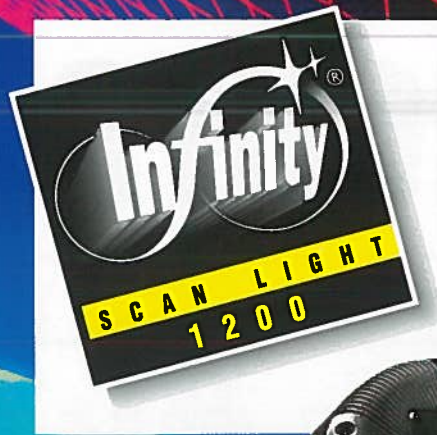
For further information, contact the organisers, GREET, in Moscow, telephone (7812) 271 4147.

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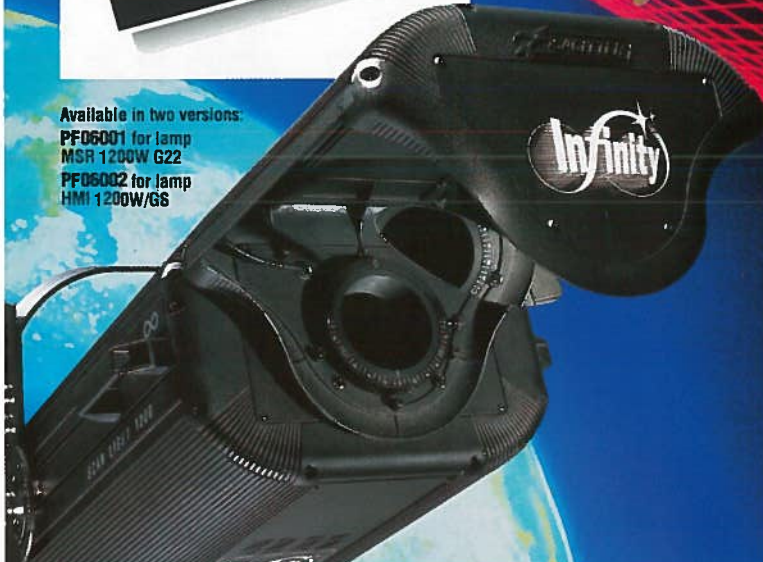
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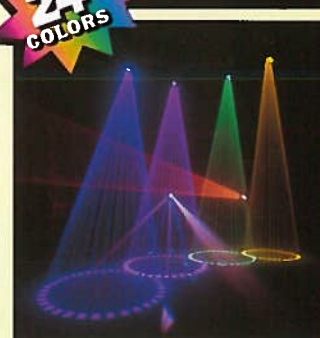


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Life on Earth

An EAW loudspeaker system has been installed at the American Museum of Natural History in New York. Bradley Stuart Berlin, acoustical consultant for the museum, chose EAW speakers to satisfy the requirements of the new Hall of Vertebrate Origins and the associated Miriam and Ira D. Wallach Orientation Centre. To accommodate the requirements of these two different rooms, custom speaker enclosure designs had to be employed, so EAW modified their JF-60 two-way, full-range speaker system to create the JF-63 NHM - a 40 degree, down-firing unit - to minimise the reflections in what is a highly reverberant environment.



Pictured above is the Hall of Vertebrate Origins where Berlin used the customised JF63 speakers for the 10 vertical walls.

Vari-Lite On Tour

Vari-Lite Inc is currently busy on tour with Celine Dion, ZZ Top, Tears for Fears, Ozzy Osbourne, Joan Osborne and the Foo Fighters. Westsun International has VL equipment out with Bare Naked Ladies, and The Obie Company is supplying Neil Diamond's current tour.

Concert Production Lighting (CPL) US are supplying Vari-Lite equipment for a range of tours: Scorpions, Dwight Yoakam, Bob Seger, Vince Gill, Lorrie Morgan and Kenny Rogers, while CPL in the UK, in conjunction with Vari-Lite Europe, currently has equipment out with The Cure, kd Lang and Status Quo.

Vari-Lites are also in use in a number of television programmes, including Late Night with David Letterman, The Tonight Show in Chicago and the 1996 Miss Universe Pageant.

Skane Chooses Chevin

Skane PA is re-equipping its entire rig with Chevin amplification. After extensive testing on the bench and on the road, the company has come down in favour of the Chevin A3000 and Q900 models to drive both its FOH Turbosound Floodlight systems and its monitor systems. Skane currently has the Chevin units out in the UK with TransGlobal Underground, Dreadzone, Ozric Tentacles and the Royal Philharmonic Orchestra.

Restoration of Royal Hall Canopy

A grant of £60,000 awarded by the Foundation for Sport and the Arts, will fund the restoration and replication of Harrogate's Royal Hall canopy constructed in 1903 and designed by architect Frank Matcham.

The existing canopy, modernised in the early seventies, was demolished in August with the new structure being constructed in October this year. Dr David Wilmore, head of Harrogate International Centre's technical division, has already had experience in restoring Frank Matcham's original canopy at the Gaiety Theatre, Douglas, Isle of Man, and many of the techniques employed for that scheme will be incorporated in the Royal Hall canopy. The frontage will be lit by authentic period light fittings.

Soundcraft in Portugal

Portuguese sound specialist, Caius Audio Professional, has been enjoying success with Soundcraft's DC2000 and DC202/S digitally controlled audio consoles. To date, Caius has supplied 10 consoles to a number of television studios, recording studios and one of Portugal's largest entertainment foundations. CCA studios recently installed both the 32-channel DC2000 and DC202 to record, mix and monitor several Portuguese TV programmes.

The Edipim studio has also acquired a Soundcraft DC2000 and uses the console to mix and monitor one of Portugal's oldest television programme 'Barabens'. A further DC2020 Surround has been bought by the Fundacao Calouste Gulbenkian which will be used to mix and record theatrical and musical productions in the Auditorium, and the desk will shortly be in action for the first time on an American ballet.

XTA Xtra

Wigwam Acoustics, the UK-based sound hire company, have recently purchased a further 15 XTA Electronics GQ600 graphic equalisers bringing their inventory to 25 in total. In addition to their busy schedule in the UK, Wigwam's Chris Hill has used the GQ600 on both the East 17 and Björk world tours.

Other recent purchases of XTA products include a DP100 delay processor for the British Film and Television Archive and RT1 spectrum analysers for Showtec, SSE Hire and Northern Light.

MTV Music Awards

MTV, the music and youth entertainment channel, has recently confirmed that it will be staging the 1996 MTV Europe Music Awards in London for the first time. This major ceremony, one of the largest music celebrations in the world, will take place at Alexandra Palace on 14th November 1996.

Televised live to millions of viewers around the world, the Awards will be an enormous technical and organisational feat with arena-style raked seating for 4,000 guests and 500 crew rigging at any one time.

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As the countdown begins in earnest to the largest show in the exhibition calendar, L+SI details more of the major product launches taking place at Earls Court

Allen & Heath will be launching the GL4000, the latest in a line of consoles that includes the GL3000 and GL2000. The eight group GL4000 is designed for flexibility, with dual functionality giving it the ability to operate as FOH console, dedicated monitor, or both. Allen & Heath's SYS-Link option provides easy expandability, with console linkage across all GL series products.

The GL4000 will be available in up to 48-channels, all feature left, right and mono master outputs, with second LR outputs, eight sub-groups, four matrix outputs, 10 aux sends, comprehensive mute groups and 128 stage scenes with full MIDI interface. The console's four band EQ is fully swept and includes 'Q' switching.

The console's four matrix outputs and 10 aux sends are also a key feature which can be set pre or post fader, whilst matrix to aux switches facilitate rapid creation of effects and monitor mixes from the groups and LR. The console's four stereo inputs merit closer inspection. As with the mono channels, these have a mic pre-amp, with swept filter and insert, plus the option of serving as dual mic inputs, when combined with the mic pre-amp of the adjacent channel.

Other Allen & Heath products on display at PLASA will be the four group GL2000 and the eight group GL3000, the GL2 and GL2S multi-application rack mount consoles and the GR1, a compact multi-input zone mixer.

■ **Allen & Heath - stand E32**

Lamba are the sole UK distributor for KAM, Stanton and Cerwin-Vega!

KAM will show the new GMX800 scratch mixer with bass, mid and treble on each channel and the KCD 950 professional twin CD player will make its UK debut. The entire range of pro speakers from KAM will be demonstrated as will the KAM Apollo 256 digital DMX lighting controller and the KAM LD8, a 16-channel DMX controller.

Stanton will display the latest additions to their range of cartridges and stylus, alongside ST-PRO, an updated version of the ST-2 headphone and, making its international debut, Vibemaster, a new transducer for the DJ.

From Cerwin-Vega! the range of ProStax MKII speakers are on show as are the Intense full range series of speaker enclosures.

■ **Lamba - stand F54**

Sagitter of Italy, who will be on stand with their new exclusive UK distributor **Multiform Technology**, will be showing their Tracer 1200, a 1200W discharge lamp followspot with in-built eight colour changer, plus three colour correctors to give 24 colours, electronic iris, electronic focus, mechanical dimmer, shutter and strobe. Believed to be unique is the Tracer Function which allows the followspot to be aligned to the target.

Making its UK exhibition debut is Sagitter's Infinity Scan Light 1200, a fully featured 'touring ready' professional 'articulate' scanner.

■ **Sagitter/Multiform - stand G11**

E\T\C Audiovisuel have produced a single scroller that will fit onto almost all makes of large format high power xenon and HMI projectors. The Universal Scroller will be available with a gate size of 155mm x 155mm or 155mm x 180mm and is built on the same principles of the double scrollers that E\T\C Audiovisuel in Paris have manufactured for the last three years. The film scroll will allow the use of up to 30 metres of film and can be piloted in either direction at any speed, being positioned within 1/100th of a millimetre. The availability of only one film in the gate of the projector will limit the type of effects that can be generated, but the unit is lighter and more compact as a result and will be much easier to fly in a rig.

The 25 metres of film on the scroll can hold up to 125 single images and the accuracy of the scroller positioning will ensure that each slide is in register when called for from the computer. Because the films are motor driven and do not rely on gravity to drop the slides into the gate, the scroller will work at any angle.

The Universal Single Scroller is controlled by the same PIGI software that controls the PIGI Double Scrollers allowing different types of projectors and/or scrollers to be used on the same rig. Up to 20 single and/or double scrollers can be controlled from one PC, which will control up to 20 devices via RS422 protocol and will accept time code in EBU or SMPTE formats.

■ **E\T\C - stand H12**

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PAGING MICROPHONES

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The impact of the purchase of **JEM Smoke Machine Co** by Danish lighting giants **Martin Professional** will be clearly evident at this year's PLASA show. In the three months since the takeover, JEM technicians have been working intensively in Denmark to produce the new Hydrosonic (HOT) Effects Generators and also to create the production facilities in Frederikshavn to mass produce the new machines.

The new Hydrosonic 2000, incorporating HOT technology, will become fully available in September, offering improved performance and increased capabilities over previous models. According to JEM, it produces a virtually invisible haze which maximises and enhances the beam and hues of projected lights, without creating clouds of distracting smoke.

This is achieved by producing large quantities of minute airborne water-based particles. The machine then pulses these, with extreme precision via in-built transducers, to create cavitation of the fluid as small bubbles are formed on the surface. These bubbles burst and the resulting matter is blown from the machine. The Hydrosonic 2000 uses this technology to create effects without the need of heat, temperature controls, jets, nozzles or compressed air.

The restyled 2000 is compact and sturdy, making it suitable for both touring and installation applications, and control via DMX512 for output level control is available. Alongside the Hydrosonic will be the full range of JEM smoke machines.

■ **JEM - stand F8**

Pursuing its policy of constant product development, **Selecon** is introducing an amazing number of new products at PLASA this year.

Additions to the Acclaim range will be the new 500W cyclorama/groundrow and symmetrical flood. These will be available in triple and quadruple assemblies, but the single versions may be easily assembled by using simple conversion kits.

Also new for PLASA 96 is the Aurora range of 1kW/1.2kW cyclorama floods and groundrow. Options include pole operation, linear and square cyc configurations, linear and hinged groundrow assemblies. The TV studio user will also be pleased to see the arrival of pole-operated versions of the 1200W and 2/2.5kW 250mm lens fresnels.

The entirely new Astral architectural range of Wall-washers and Floods in tungsten halogen, fluorescent and metal halide forms will be on display. These offer optional colour filter holders or coloured glass. The new Astral metal halide versions of the Acclaim spotlight range, now with integral ballasts as an extra option, will also be shown for the first time.

■ **Selecon - stand F10**

Columbus McKinnon Corporation will once again be at PLASA with their CM Lodestar motor. Designed specifically for the entertainment industry, CM inverted Lodestar motors adapt to countless staging environments for lifting sets, backdrops, flying light grids and sound equipment.

■ **CM - stand E2**

AKG is launching the WMS 51, a new low-cost radio microphone system, at PLASA. Offering hand-held and body-pack options on four different UK frequencies, WMS 51 systems provide wireless solutions for musicians needing a system for vocal, guitar, and sax/brass instruments as well as for sound contractors and venues needing wireless systems for conferencing.

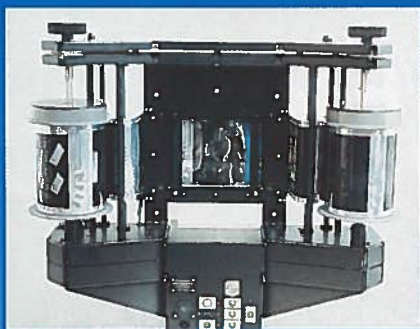
The SR51 receiver unit is a true diversity design optimising the performance of the radio link. Balanced XLR and unbalanced 1/4" jack outputs are on the rear of the unit. The hand-held version (HT51) uses the proven D3700 capsule from AKG's popular Tri-Power vocal mic range and is a rugged unit with a tight, hypercardioid polar pattern allowing high on-stage sound levels without feedback. The HT51 will run for up to eight hours continuously on one 9V battery.

The PT51 body-pack transmitter has switchable input impedance and will accept dynamic or condenser tie-clip microphones as well as electric guitars and brass instruments.

■ **AKG - stand E32**

OptiMusic Ltd will demonstrate the latest advances in interactive light technology. The OptiMusic system now incorporates the OM-1, a light to MIDI controller that can process up to 32 beams at 16 notes per beam, with many MIDI capabilities on board. OptiMusic is activated by interacting with ordinary light. Coloured lights beam downwards, producing visual reference points for the operator.

■ **OptiMusic - stand J38**



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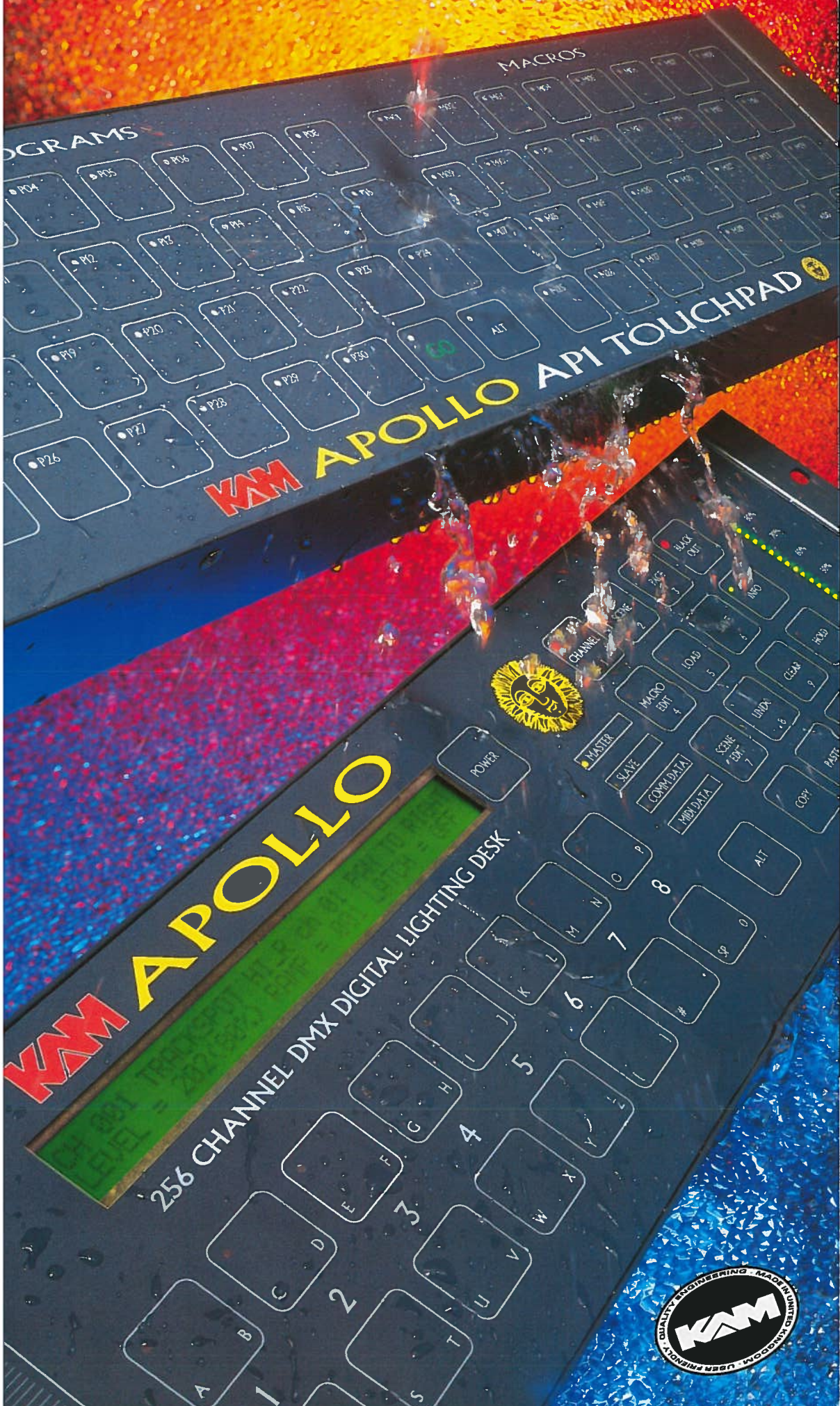
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ADB
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Cloud Electronics will be exhibiting their award-winning CXM Mixer, along with their signal processing equipment, and successful zone mixing products. New at PLASA will be the CX242 and CX132 zone mixers, and the CX-A4 multi-channel amplifier.

The CX242 features two mic inputs, four music inputs and two output zones. One of its key features is the option to have remote music select and level on any of the zones, if required. The CX132 features a single mic input, three music inputs and two output zones. The front panel offers straightforward control of music select, music volume and mic volume for each zone and remote control of the music level of each is an optional facility.

The CX-44 is a four channel amplifier. Each amplifier has an output capability of 120W RMS into a 4ohm load and each incorporates multi-level protection circuits. Remote VCA modules and 100v line transformer modules are also available as an option.

■ **Cloud Electronics - stand E18**

For Italian lighting manufacturer **Griven** (on the stand of new UK distributor **Multiform Technology**), the new, top-of-the-range Imperial sky tracker will be a prominent feature.

Imperial is a single beam projector utilising a Xenon 4000 lamp and a patented moving reflector/optical system to produce a narrow angle beam of light which moves in an oval arc for pan, tilt and controllable speed. The movement is via on-board control or from external analog or DMX control. Six inbuilt movement sequences can be replayed automatically, and movement is also controllable for pan, tilt and speed, again via on-board control or from external DMX or analogue control.

Other Griven units on stand receiving their UK launch include the new Scanvision 2 and Midscan 2 intelligent scanners, and the 'Splendid' 16-mirror pre-programmed centrepiece.

■ **Griven/Multiform - stand F56**

Mad Lighting looks set to throw down the gauntlet to the rest of the industry at PLASA this year. The company is undergoing final product testing on a new range aimed at the touring market. The design brief was to identify new materials and production techniques to provide the end user with some major benefits: stronger castings, no light leakage and higher safety compliance in readiness for the new regulations in 1997. Though Mad are keeping quiet about exactly what will be launched, the results of the year-long R&D programme, which has seen substantial investment, will be unveiled for the first time at 4pm on the first day of the show.

■ **Mad Lighting - stand D38**

Out Board Electronics will be launching three new products at PLASA. Starting with Timax, an audio matrix system based on DSP technology which offers control of level and time delay at each input/output cross point. Aimed at theatre productions, Timax takes advantage of the 'Haas' effect by dynamically altering the time delays from any input to any output, for effective control of spatial sound images.

Designed for the rigging, lighting, and sound rental companies, the VCM6, is a chain hoist motor controller compatible with both Verlinde and CM Lodestar motors and has individual switches to select the mode of operation on each of its six channels.

Finally, the MPD is a 19" rack mounting range of power distributing modules providing off-the-shelf solutions to all power distribution requirements. With everything from three-phase in at 400 amps to single phase 13A outlets, and every other option in between, the MPD range includes RCD circuit breakers and MCB protected outlets.

Out Board will also show the Octopus 'stand alone' automated sound control system for theatre sound effects and the QP4 manual quadrophonic joystick panner.

■ **Out Board Electronics - stand SQ14**

Fane Acoustics will be demonstrating their recently launched co-axial models, featuring 10" to 15" chassis, recommended for use in all sound reinforcement and monitor systems rated from 200 - 300W.

The company will also show its complete range of components including the awesome 1200W Colossus bass drivers as well as mid-range and high frequency drivers, horns and tweeters.

On the same stand, sister company Wharfedale will offer the complete range of Force products including the new Force 1080, 2180 and 3180 models. Other Wharfedale products will include the Link 600 powered loudspeaker, the Force 9 and Force 10SB sub-bass enclosure.

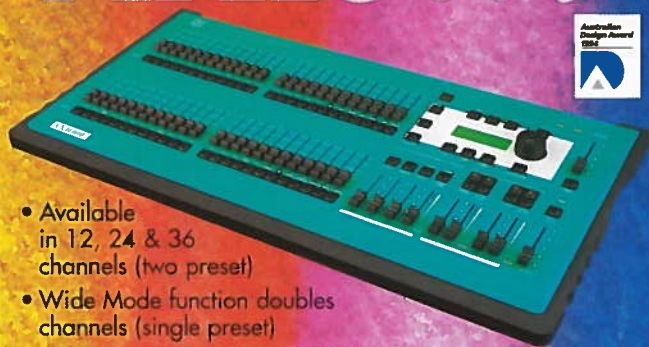
■ **Fane Acoustics - stand F44**

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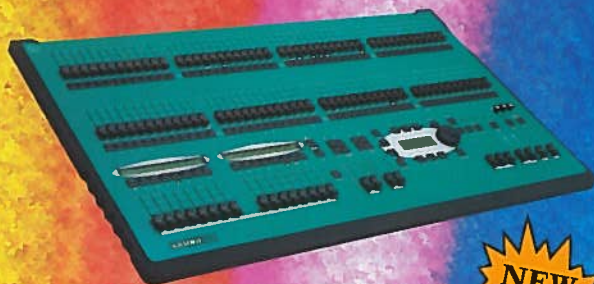


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Martin Professional UK are exhibiting Mach speakers as an integrated part of the new Martin World Tour 2000 exhibition concept. Mach is a range of professional speakers covering all professional installations, from the very small to the very large. This year, the new Road Series is on show in the UK for the first time. The Mach Road and Installation Series will be demonstrated in three different types of set-up.

The main stage is covered by six MI82R subwoofers and four MI56R top-boxes from the new Road Series while the speech reproduction at the information stations will be taken care of by the compact M128R. In the disco associated with the Martin ProShop exhibition area, a M182/M156 combination from the installation series will be on demo.

■ **Martin Professional UK - stand E62**

Adam Hall, now UK distributors for 3G, will be showing several new products from the company on Stand F44 at PLASA. These include the Meteor live front-of-house console, the professional DJ console, the Titan Pro and the Imp, an installation zone mixer. 3G, meanwhile, will take their own stand in the specialist sound sector, on Stand SQ50, where they will be providing the UK debut of the live modular automated console, the Fireball.

■ **Adam Hall - stand F44**

The main emphasis on this year's **Lite Structures** stand is being placed on their new Lite Deck aluminium staging system. This is designed to fill a gap in the market between the many light duty stages available and major concert type structures. Using an all-aluminium frame with the familiar Lite Structures lacing, Lite Deck combines light weight and ease of portability with immense strength. The decks offer long life expectancy with protection against delamination, making the system ideal for touring companies and permanent installations.

Also on show are the well-established ranges. The most popular Midi series, Astralite, Bilite and Quatralite, will be on display alongside Lite Structures' Mini series. As in previous years, Lite Structures are proud to have built the PLASA Pavilion.

■ **Lite Structures - stand E16**

This year Shuttlesound, distributors of Electro-Voice and Rane products in the UK and Eire, will have more than 40 new products on their stand. Visit their booth to find out more.

■ **Shuttlesound - stand H48**

Following the success of its Ominidrive loudspeaker management system in the touring sound reinforcement market, BSS Audio has produced a dedicated installation version which will be on display at PLASA.

The new FDS-380 performs the same functions as the standard FDS-388 Ominidrive but has no front panel controls. Access can thus only be obtained by the system designer or contractor. The FDS-380 can be configured as a two-channel, four-way crossover, with delays, EQ and limiters on each output and as each crossover band-edge is fully adjustable, systems may be configured as three-way plus a full-range output.

■ **BSS - stand SQ64**

The extensive Jamo commercial product range has been increased with the addition of two new sound reinforcement products which will be on show. The U100T is a 100V line or low impedance, full-range background music/PA loudspeaker incorporating a built-in 10W transformer which has tapings set at 10W, 5W and 2.5W respectively. The U110T is a 100V line full-tone speech projector also incorporating a built-in 10W transformer which has tapings set at 10W, 5W and 2.5W respectively.

■ **Jamo - stand K24**

PSL will be exhibiting the latest edition to their VE range - the VE1200. Also on display will be the VE500 and VE800 professional power amplifiers.

■ **PSL - stand B26**

Garwood, exhibiting on the stand of Autograph Sales, are launching a new mid-price in-ear monitoring system aimed at the professional performer or sound installation seeking a cost-effective solution to monitoring problems.

The new System 3 is a high-quality wireless in-ear system, which presents advanced UHF technology in a fully-featured rack-mounting package. The system is comprised of a 1U transmitter unit, a belt-pack receiver and Garwood IEMII earpiece. It offers full stereo transmission on a single UHF frequency, set according to the territory.

The belt-pack receiver is a high sensitivity unit, with an on-board noise reduction system to ensure wide dynamic range and a compressor/limiter for safety. Output volume can be controlled from the receiver by the artist. A 9V battery offers up to six hour operation, and reception range is 300ft.

The transmitter unit features input level control and volume indicators, a stereo/mono switch and front-mounting aerial: balanced connections can be made via XLR or 1/4" jack inputs.

■ **Garwood - stand F36**

Altman's new 'Travel Lite' lighting kits are being shown in full production models. These compact lighting kits are designed for safe, easy storage and transportation. Five different standard models are available and custom models can be assembled. Kits include sturdy telescopic stands, heavy duty 2.5ft extension cord, barndoors, scrim sets, and a lightweight, high impact moulded 'Easy Roll' travel/storage case. All units are U.L. and C.U.L listed and carry the famous Altman guarantee.

Also on show will be the final production model of Altman's newest member of the blacklight family, the UV-704. This unique product is manufactured with the ballast mounted inside the fixture's sealed housing. Due to the heavy duty construction of the housing the unit does not require a fan, so operation is very quiet. The UV-704 can be operated with any one of three different beam spreads (narrow, medium and wide).

The entire series of Shakespeare ellipsoidals have recently received the European standard CE marking. The Shakespeare series will be on display from the fixed focus 5, 10, 20, 30, 40 and 50 degrees to the 1535-Zoom and the 3055-Zoom.

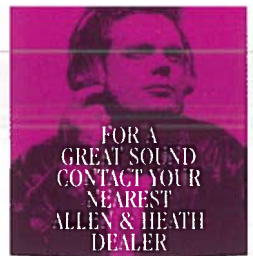
Altman are also introducing in a full production model, the redesigned 1200W HMI Explorer. New designs include a heavy duty colour boom, a new optics system, which allows for a smooth, more even field for theatre application, and a new slide focus mechanism.

■ **Altman - stand EP12**

Autograph Sales are launching several sound reinforcement products. Among the new entries is the Lab Gruppen LAB 3000 power amplifier - a 2U design which features one of the highest power-to-weight ratios available, packing 2000W per channel into a compact unit weighing just 10kg. Also on display from the Lab Gruppen range will be the two and four-channel amplifier range together with loudspeaker processor and crossover units.

New additions to Meyer Sound's range of self-powered loudspeaker systems are the Constant Q CQ-1 and CQ-2 accompanied at PLASA by other units in the range including the MSL-4. Autograph will also be displaying ATM Fly-Ware loudspeaker rigging hardware and is introducing the new MEGS 3 x 4 series modular system.

■ **Autograph Sales - stand F36**



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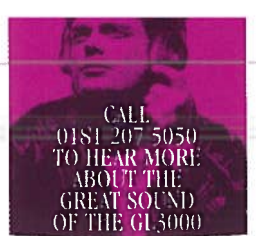
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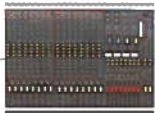
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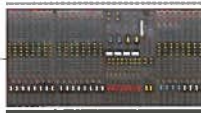
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*Except on the 16 channel GL3000



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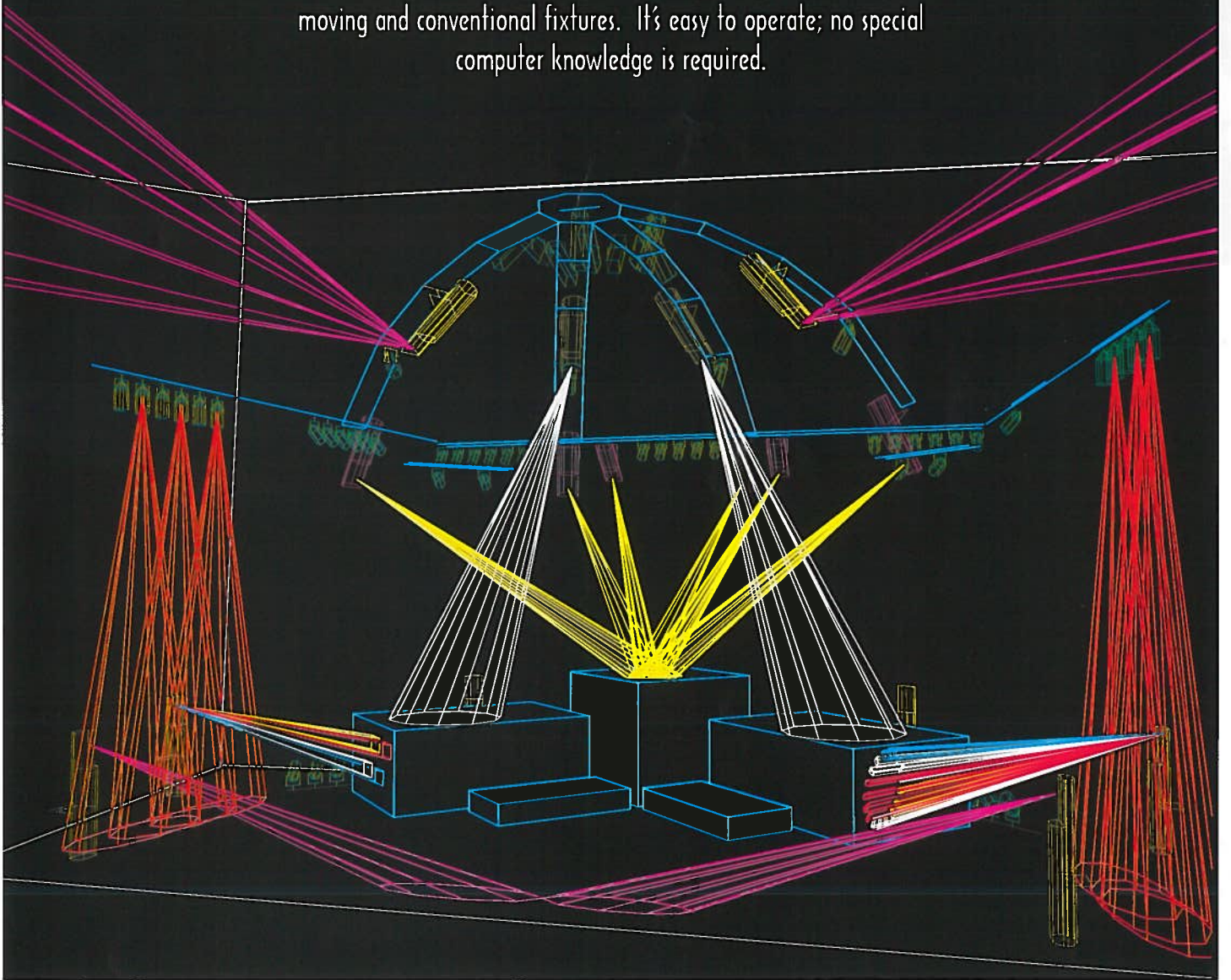
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PLASA SHOW HIGHLIGHTS

Pioneer are aiming to steal the show at this year's exhibition. The company, who developed the CDJ-500 and DJM-500, are set to launch the DJM-300 mixer. This unit has additional functions that will set a new standard of quality within the two-channel mixer market, according to Pioneer, who will provide top DJs from around the world to perform on the stand, and have confirmed that Roger Sanchez will be making a guest appearance.

■ Pioneer - stand A32

JYG are displaying and demonstrating the full range of SGM lighting products. On a new front, JYG now manufacture turntable tops which transform turntables from ordinary to designer status by simply changing their colour - a must for any turntable manufacturer or supplier.

■ JYG - stand K20

Blackout are sharing a stand with Triple E and will be exhibiting new staging equipment available for hire for the first time in the UK. The stand features a new, flexible, remote motorised kabuki system. Designed by Brilliant Stages, its relatively simple design makes it extremely reliable, especially when compared to the alternatives available. Blackout are also showing a new motorised Austrian drape system designed and produced by Triple E, believed to be the first mechanical modular system available for hire in the UK.

■ Blackout - stand D14

New from German manufacturer **Transtech** is the Alex system, a family of modules which the company claim can be combined to produce any kind of dimmer system. The 19" plug-ins are designed to be as suitable for rough, mobile use in all conditions as they are for fixed installations. The modules allow a separate dimmer curve to be selected for each channel, and open-design auxiliary groups ensure that the light will not go out even if control signals go astray.

Also new, Focus is a professional lighting console for medium-sized theatres, concert, musical and municipal halls. Features include up to 21 crossfade systems or 20 preset masters, pre-stored curves of a number of popular fixtures and remote control through external terminals such as PC, laptop or hand-held controller.

■ Transtech - stand C16

Nikkodo Uk are once again exhibiting their full range of professional karaoke systems and software. New products include a 50 disc video CD autochange system in a compact, portable cabinet with full remote control. This product is the latest addition to the video CD range spearheaded by the successful VCD-800 single VCD player launched at PLASA last year. Both systems are unique in their ability to read video CD and graphic CD formats, making them ideal for existing CDG users wanting to upgrade.

Also new is the CD graphic player to cater for the entry level market which continues to exhibit strong demand. This product is fully rack mountable, making it ideal for the mobile DJ. The Frogflips Interactive Music Station from Tune 1000 is making its first appearance on the Nikkodo stand. Its unique Virtual Harmony system and MIDI file technology puts it at the forefront of innovation in the karaoke market.

All formats are fully supported by the widest range of software available in English and many other languages.

■ Nikkodo - stand B24

Compulite will be launching two new support products for their Photon and Spark budget control systems. The first is a back-up console for Photon which incorporates 10 submasters and a crossfade playback with built-in LCD display and 3.5" disc drive. The unit can be used as a stand-alone console, but also has the ability to be able to load and run a show programmed on Photon.

Spark SP19 is essentially a 19", 1U high rack-mounting version of the Spark moving light console with an LCD display, 3.5" disc drive and front panel controls. The SP19 may be utilised as a back-up unit to Spark but was designed to provide a low-cost control option for museums and exhibitions where the show can be programmed on a Spark and left running on the SP19.

Also to be launched on the Stagetec/Compulite stand will be totally new versions of Compulite's popular Animator and Ovation control systems.

■ Compulite - stand B8

In addition to their standard black, powder coat finish, **Bretford Manufacturing** will be introducing a new selection of 15 colours available in the wide range of TV and VCR mounting brackets that will be on show.

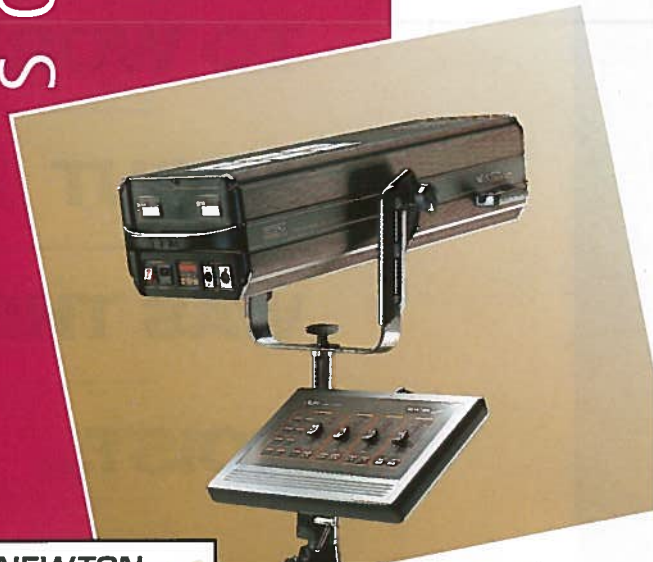
Also on display will be Bretford's Series 400 electric screens which are ideal for low-cost installation and now come in a wide range of sizes, from 60" to 8ft, with low voltage operation.

■ Bretford Manufacturing - stand D18

CONCEPT



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ON TOUR

by STEVE MOLES

AND PRODUCTION NEWS

Morrison/Charles

Newcastle Arena

LDs: Chard/Lambourne

SDs: Williams/Enda

The posters held out the possibility of something truly magical: Van Morrison and Ray Charles on the same bill. Two musicians with a common heritage, steeped in the roots of blues, jazz, swing and soul, sharing the same stage.

Sadly, it was not to be. Despite the undoubted potential of such a pairing, this was nothing more than a two-act package featuring artistes of similar calibre - not a deliberate deception, as there was nothing in the publicity material to indicate an actual pairing, it just seemed a natural assumption to make and was certainly a common hope among the 6,000 people in the audience.

Having adjusted to the reality of the show, it was then somewhat incongruous to see Van Morrison appear on stage at 7.30pm as the opening act. Hardly his time of day, and being the rockier of the two acts, surely inappropriate in terms of pacing. As it transpired, the Geordies are nothing if not deeply sentimental: having enthusiastically received Van the Man, they then roared and took to their feet *en masse* when the frail old piano man was led out onto the stage for the second half.

LIGHTING

This is not high-tech - a rig of 200 hundred Pars, peppered with ACLs spread across a 40ft x 30ft box and a straight front truss all supplied by Neg Earth. Van is well known for not liking lights; for him, followspots are out of the question, and Ray Charles might be blind, but he has an acute ear and will not tolerate the noise of a cooling fan or whirling mirror motors above his band.

For Andy Chard (Van's regular LD) and Chris Lambourne (drafted in for Ray Charles) the show places demands upon them in other ways. With a rigging call at 7.30am (Andy doubles as tour rigger) and lighting in shortly thereafter, the whole system is up and flashed out in two hours. As Chris Lambourne said: "With no data feeds and other fiddly bits and pieces to deal with, we're done by 9.30am, so dealing with spare time is a problem."

A problem I'm sure plenty of other lighting teams would be happy to help with. In truth, the mornings might be a bit empty, but the afternoons are busy enough. Ray Charles has a full-blown 18-piece orchestra and the lion's share of the lamps are focused across them. Once that focus is complete, the two LDs then break yet again, while Charles' stage set is rolled behind a back tab and the stage is re-set for Van and a second focus can commence.

During the show, both performers allow their bands to free-range a fair bit; the fast and loose style of musicianship means there's no certainty on any given night as to which instrument is going to take a solo. Lambourne can use two followspots for Charles' band, and thus spends his evening quietly teasing band washes up and down a few



Ray Charles on a double bill with Van the Man - sadly not the magical event it could have been.

percent to mirror tempo whilst keeping the spot operators awake with old tour anecdotes.

Andy Chard, meanwhile, lacking access to followspots, uses ellipsoidal (16 of them), mostly spread across the front truss to catch the musical flourishes, which is fine until the saxophone player gets over-excited and decides to imitate a whirling dervish. This all might sound straightforward enough, until you discover that Van Morrison has a 12-piece band, most of whom do solos. It's not a difficult show for either man - they could just put up a wash for each number and leave it at that - but they don't. Both work hard to catch each musical nuance. And it doesn't go unnoticed. Several members of the audience all commented upon the lights - unprompted by me.

SOUND

CaneGreen are supplying a mixed system of Meyer, both older MSL3s, DS2s and 650s, together with the newer self-powered system recently purchased by the company. Mick Williams is out there looking after the system and, with his broad experience, was also intended to look after Ray Charles' sound. As it transpired, Morrison's long-time sound man 'Enda' took on the job by mutual agreement.

For Enda, Morrison's big band wasn't an issue. After four-and-a-half years with 'The Man', it was a pleasure to hear each solo come and go like phantoms in the night, each perfectly captured in the mix. The tighter bottom end of the Meyer 4s was noticeable through the separation of the two kick drums, especially at the back corners of the Arena where the cabinets were targeted. A quick stroll to the middle of the room, where the 3s were prevalent, confirmed this.

One thing Enda was keen to draw attention to was the failure of an amp in an MSL4 at the previous show in Manchester. "Losing an amp wasn't such a problem, we only lost one cabinet,

but because it was in a flown cluster the potential for disaster was greater. With a multicore feeding the whole array and a breakout mains to each cabinet, there was no way we could isolate signal or switch off a single cabinet from the ground." Obviously something that demands rapid attention.

Mixing for Ray Charles was the more contentious issue. Both bands are big - Charles' alone comprises six saxophones, five trombones, four trumpets, bass, drums, guitar and Hammond, plus Charles himself on piano, and yet Enda easily fits both on his Yamaha PM4000! How? There are barely six mics on stage for Charles, three for brass, two for the six girl singers: most of what comes out of the PA is ambient pick-up from his vocal mic. "He's brought over a Sennheiser 504 for himself, and he sings all over the place, swaying to the side or suddenly right on it. He wants to hear a real fifties sound.

"Luckily, I saw him on stage a couple of years ago and heard him tear a strip off the engineer for over-doing it, so I knew he was serious. I try to mix as little as possible. If I can, I just take what's coming through his channel and don't use the brass mics at all." This would work really well if it weren't for the fact that Charles uses a rinky dink combo to play his electric piano through and it blasts straight across his mic. Fortunately, he's usually restrained in his playing, but on occasions Enda is left helpless.

The band are tight: the horn section especially, blowing hot and cold in easy measure and with little in the way of direction. If you like this sort of sound, the band are just a pleasure. Although Ray Charles' voice has lost its strength (he is 80-something) and he can't hold a note for long, it's still distinctive, and his characteristic phrasing is faultless. For a guy who'd just had his own piano ripped off in Manchester 24 hours earlier, he was remarkably laid back and self-assured. Must have had Georgia on his mind.



Chris de Burgh performs in the genteel surroundings of Castle Howard.

Chris de Burgh

Castle Howard

LD: Tim Dunn

SD: Jeff Hooper

The setting of Castle Howard is a complete contrast to Chris de Burgh's tour 18 months ago. Then, playing venues on the mainstream arena circuit, he had with him a state-of-the-art show, full stage set production, sophisticated light show and real-time video mixing for on-stage projection. For this batch of shows around some of the larger stately homes of England (Blenheim and Hampton Court, for example), he has re-invented himself in a much more genteel presentation, as befits the surroundings.

The venues are pastoral: For Castle Howard, the stage sits at the foot of a gentle slope running down from the front of the building and has, for a backdrop, a quite exquisite landscaped vista of man-made lakes and verdant pastures rolling off into the sunset. C de B, as he is affectionately known, has split his show into two distinct halves. For the first 75 minutes he plays alone, with just either a guitar or piano, and this informal, almost impromptu format (he takes frequent requests from the crowd) works well in the twilight.

For the second half, he brings on a small, electric ensemble and a 30-piece orchestra, joined for the closing numbers by a 12-piece choir. The show starts at 8.30pm prompt and doesn't end until 11.30pm, covering a colossal range of songs drawn from his own and other repertoires. Whatever your personal predilections, there's no arguing with the fact that he gives his audiences good value for money with a varied and interesting programme.

SOUND

"The biggest challenge for me is wind," admitted FOH engineer Jeff Hooper, and he wasn't referring to Eat to the Beat's catering. He was fortunate on this occasion - despite gusty conditions during sound check in the afternoon, as the sun sank into the West, the wind died with it. Only those late comers obliged to stand near the crest of the rise

suffered the misfortune of hearing the mix ebb and flow in the breeze. It's a battle that can't be won: two weeks earlier musicians for Raymond Gubbay's presentation of the Four Seasons at the same venue had suffered acutely at the hands of the wind, with howling gusts invading microphones at the most poignant moments, despite the fully enclosed stage.

However, there were a couple of nice touches to the sound that merit note. Firstly, the show was staged beneath the familiar half-dome of an Orbit roof: rather than stack PA on scaffold wings and compromise the softer look of the stage, Concert Sound preferred to fly the system. Two tripod towers from Serious Structures did the job and, although they might be nothing more than glorified oil derricks, their appearance was far more in keeping with the presentation. The tower's height also allowed the EAW PA to be hung in the fashion that Concert Sound prefer, with a greater horizontal separation between the rows (10 to 11 inches approximately), which Hooper noted gives fewer problems with the system, something confirmed by on tour boffin Tim Boyle.

The second touch was at the front-of-house position. Having opted for a simple ground level mix position, Hooper then took a chance and removed the canopy and walls of his enclosure prior to the performance. This may have been a balmy late summer evening, and no doubt a better way to mix from the point of view of the more natural sound he'd hear in the open, but the skies held some very large black clouds. Undoubtedly, it would have been easy just to say 'sod it' and not bother - instead, the result of his calculated risk was arguably a better mix and certainly a greater area of unimpaired sightlines to the stage.

The flown system featured four rows, six wide of mainly KF850 with a mix - four of each type - of the longer throw 853 cabinets. Even from the top of the spot tower 280 feet away, and beyond to the crest of the rise these carried well. The only appreciable difference was during the first set when, closer to the stage, the level coming off de Burgh's guitar set-up dictated a more recessive position for that instrument in the mix, which in turn meant that from a distance it sounded slightly hidden in the mix compared to the vocals.

To cope with the large number of musicians on stage, Tim Boyle mixes down the orchestra from

a Midas Pro40 on-stage and then feeds Hooper's PM4000 out front and the XL3 for monitors. Hooper is using the new Sennheiser KM5000 for de Burgh's vocal mic.

As is the fashion these days, EQ for main components like de Burgh's vocal is done outboard - Hooper uses a Varicurve and a pair of Summits. To keep control nice and tight - an investment that certainly pays dividends - all 12 members of the choir are close mic'd with SM58s and all the orchestra have Barcus Berry bugs.

LIGHTING

Normally, Andy Doig would be lighting designer for this show, but for the first time in many years he was double-booked. Fortunately, a happy combination of events - the fact that the tour started in South Africa, and that both men have worked on C de B tours before - led to Johannesburg resident Tim Dunn taking on the mantle. LSD are supplying the equipment, a seven-sided arc of pre-rig truss follows the inner curve of the roof, while out-hung at an angle from below each facet is a six-lamp bar that follows the widening contour of the canopy. To complete the wrap of the stage, three broad legs of white cyc-cloth are striped by narrow six foot bands of black drape.

It's a lamp-heavy rig for a quasi-orchestral show, but the way the system hugs the roof makes it appear less so. Almost 100 Pars, including five sets of ACLs, light the stage, while another 36 Pars, gelled as a rainbow, are dedicated to lighting the audience. Another two six-lamp bars and half a dozen Molefays used in open white are also trained on the crowd. A total of 22 Intellabeams are split between floor and roof with the floor lamps doing a lot of beam work above the musicians (the smoke machine thankfully able to make an impact), while the aerial lamps played gobos on the white cyc strips.

Although the first half of the show was to all intents and purposes in daylight, with just the two Super Troupers on Chris and a few kW of tight wash on him and the piano area, Dunn did venture some gobo patterns on the cyc's when appropriate. Daringly, he chose to put these up in some fairly dark saturated colours, but in the cave-like interior of the Orbit roof, they read remarkably well, in spite of the ambient light.

Dunn used a Jands Hog 600 for control, a desk he'd not encountered before but warmed to immediately. For the second half of the show he really gets to use the board, but shows suitable restraint for what is really a mood show, setting just a simple back-drop look, plus wash, with key on Chris de Burgh, and only inserting bump cue for emphasis when really warranted.

The best moment of the show for me came at the intermission. I was standing at the mix position chatting to a member of the Concert Sound crew when a tall middle-aged man in pale blue and white stripped shirt and casual grey slacks approached. "How's it all going?" he enquired, conspiratorially. "Do I know you?" replied the Concert Sound tech? "Yes. We met earlier today. My name's Simon Howard."

The unwitting tech looked blank and then courteously, but firmly, ushered the poor man away as "people with drinks in their hand were not permitted". Mr Howard stood for a moment, regained his composure, and then quietly walked off, back up the hill, to return to his beautiful mansion at the top.

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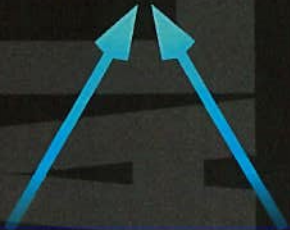
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OPRYLAND USA

Nashville's Opryland Hotel is the seventh largest in the USA, and the largest outside of Las Vegas. L+SI looks at the mammoth installations undertaken during its recent \$175m expansion project



The vast Delta, a 4.5 acre development fully landscaped housed beneath a soaring 15-storey high glass dome weighing 650 tons. A river, waterfall, eight retail shops, six restaurants and ante-bellum mansion make this themed space a 'destination' in itself.

It's not unusual these days for stadiums and sports arenas, new and under construction, to be fitted with computer-controlled sound systems - but not many hotels are.

It seems that performance-oriented facilities in the entertainment centres of Las Vegas and Atlantic City - where music and audio quality are of prime importance - are leading the way when it comes to cutting-edge technologies to control audio for hotel/convention spaces. Now we can add to that short list, the Opryland Convention Centre in Nashville.

Opryland is one of the very few hotel/convention centres in the country to have implemented a computer-controlled sound system, and it's quite probable that none exceeds the scope and scale of what Opryland has put together for its vastly expanded facilities. Audio for every public area - exhibit spaces, ballrooms, meeting rooms, restaurants - of the new phase four expansion of the hotel and convention centre, is under sophisticated computer control. To give some notion of scale, snaking their way behind the walls and above the ceilings throughout the new complex are

over 100 miles of mic lines and 30 miles of speaker wire. Opryland was a *big* project.

More than three years ago, a team comprising Opryland upper management put together a prospectus for the phase four expansion project. This prospectus was given over to the Gaylord Entertainment Company as developers of the project. Nashville architectural firm, Earl Swensson Associates (ESA) started on the project in June 1993 with little more than a dozen sketches outlining project basics which, three years later, would culminate with the opening of the Delta - a \$175 million expansion project, adding 988 guest rooms, 300,000sq.ft of new exhibition and meeting space and a new 5,500-seat ballroom to the Opryland Hotel. The hotel is now the seventh largest in the country, and the largest outside of Las Vegas, with 2,883 guest rooms. With a total of 600,000sq.ft of exhibition and meeting space - 15 restaurants, 10 lounges, 85 meeting rooms, and four ballrooms - the Opryland Hotel is now the largest hotel/convention centre under one roof in the world.

The 4.5 acre Delta, a landscaped interior space under a soaring 15-storey glass dome, is the centre of the new expansion. A river, a waterfall, eight retail shops, six restaurants, and ante-bellum mansion make this themed space a 'destination' in itself (as they say in the hotel/travel trade) and not merely a place to drop by if you happen to be passing. It's an undertaking of enormous proportions. But even so, the construction of the new hotel wing and convention centre spaces represents only a part of the total effort involved in the project.

"Before we even began serious construction of the expansion," said project co-ordinator, ESA's Randy Nale, "we had to construct replacements for those facilities on the expansion site that were slated for removal." A power plant, a laundry, and a wardrobe building all had to be built and operational before the old structures they replaced could be torn down to make way for the Delta.

In addition, a 30,000sq.ft commissary was constructed just to handle bulk food preparation for the hotel's yet-to-be-built kitchens serving the new ballroom dining areas.

But perhaps the greatest challenge of all connected with the project was trying to add on to a hotel while it remained in full operation.

THE AV SYSTEM

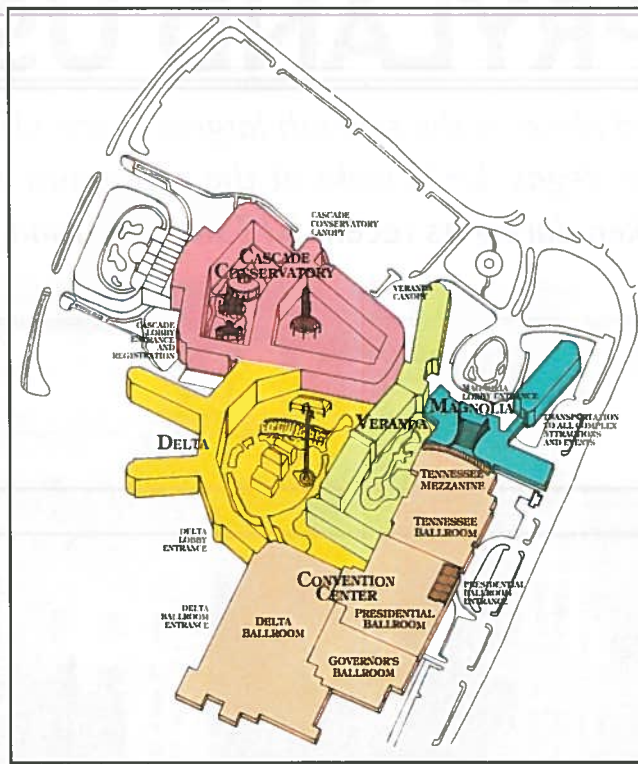
"This is a re-definition of how a convention centre is used," said Opryland Hotel manager of AV services, Jerry Turner. It may sound like an extravagant claim, but Turner's statement is not hype. It represents the excitement that the project, particularly the computer-controlled A/V system, has generated among all involved.

Behind the excitement is an organisational commitment to leading-edge technology that, Turner asserts, grows out of the fact that the hotel operates its own AV department - not usual in an industry where it's more common to find facilities sub-contracting out AV work. "Because we have our own AV department," he said, "Opryland Hotel is more invested in the technology needed to facilitate events. Backbone cabling is not an afterthought here. It's a wired facility, from the start, made for moving large events in and out, every day."

Originally, the thinking was that the phase four AV system would match the scope of the phase three expansion completed in 1988. But it quickly became clear that phase four was much more ambitious in scope, and the largely analogue approach to the phase three AV system would not be good enough.

"Originally we wanted to duplicate what we had in our existing hotel," said Gaylord's electronics co-ordinator for the phase four expansion project, Trent Mullins. "But we eventually opted for computer control." The savings, centred around the elimination of racks, processing gear and cabling, were significant. The choice, however, was approached with caution: "We needed to ensure that we had adequate patch points," said Turner, "so that if the computer control system did fail, we could patch around it in the analogue domain."

Months of research went into choosing the system. "We had demos of the equipment, checked references, and called other organisations," said Mullins. "We asked questions about the supplier's equipment, and



about the level and quality of support. We certainly did our homework."

Examining system proposals involved balancing the scope of the project - its sheer size and the multitude of functions it needed to perform - with the expectation for system performance that Opryland's own high standards had established. Jerry Turner commented: "I have to say that Ray Waters (hotel manager) supported our department in striking the proper balance between what we needed ideally to fulfil all our needs for the future, and what we needed to get the job done. My attitude was 'if you say no now, at least punch a hole in the concrete and run a conduit for it.' If I didn't get all that I wanted - and nobody ever gets everything they want in a project of this nature - Ray Waters at least made sure that I could add it later."

And, of course, a constant theme running throughout the project was flexibility - the flexibility to automate processes that would match the facility's quick-change needs.

SOUND SYSTEM BASICS

Two autonomous systems supply sound control for the convention centre and the Delta

respectively. All the audio for the entire convention centre is handled by the systems in the AV control room, physically located on the same level as the Bayou meeting rooms in the Convention Centre. 16 Crest CKV2400s amplifiers for the Ryman Exhibit Hall background music/paging system occupy two equipment racks in a room at the rear of new exhibit space. However, these amps are controlled via the NexSys system in the AV control room. Similarly, all signal processing for the exhibit space is handled by the Peavey MediaMatrix system, also located in the AV control room.

Audio controls for the Delta space - including all the retail areas, a food court, the Delta Court meeting rooms, and service areas - is handled by the smaller of the two computer systems in the Delta control room, physically located beneath a large terrace in the Delta atrium, in a room affectionately known as 'The Cave'.

Both the convention centre and the Delta control systems are based around separate Crest NexSys 3.0 systems, and Peavey MediaMatrix systems (plus control panels from Crestron in the hotel ballrooms, meeting rooms and pre-function areas). NexSys' Windows-based software/hardware systems control Crest's new CKS and CKV Series amplifiers: 62 in the Convention Center system, and 17 in the Delta system.

Sharing rack space in both control rooms with the amps are two MediaMatrix systems from Peavey Electronics. This is a Windows-based hardware/software system for creating, modifying, and controlling a complete signal processing system. The system consists of a computer containing DSP cards with controlling software connected to rack units called break-out boxes (known as 'BoBs'), each with balanced inputs, using an 18-bit A-to-D converter, and eight balanced outputs, using 18-bit D-to-A converters.

The hotel A/V control room houses a MediaMatrix system of 24 BoBs and nine DSP boards, while the Delta control room houses another MediaMatrix system with 13 BoBs and four DSP boards. Other major components of the MediaMatrix system include microphone preamp units.

In the convention ballrooms, the convention



Opryland has something for everyone: the Delta Room (above left) is the largest of the hotel's four ballrooms and can seat 5,500 for dinner. It also has an 80ft x 30ft stage. Alternatively, you can take a pleasure cruise along the quarter of a mile long river that flows through the lobby.

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The main control room, with Peavey's MediaMatrix and the NexSys control systems side by side.

centre and Delta meeting rooms, the pre-function areas - in all the areas where you'd want control of sound system basics - custom-built wall panels from Crestron (Cresskill, NJ) allow qualified personnel access to basic audio functions such as control of speaker levels (by room or zone) and input source selection.

The Crestron control panels talk to the MediaMatrix computer via an RS232 serial communications link. Control panels are located in the convention centre meeting rooms, ballrooms, the exhibit hall, the two ballroom pre-function areas and the exhibit hall pre-function area. Control panel locations in the Delta include the seven meeting rooms.

The number of loudspeakers for background music and paging is staggering. Over 550 Tannoy ceiling speakers (plus a small number of single-point SourceArena speakers) provide sound coverage for all the public areas of the new installation, while 200 Atlas ceiling speakers provide paging for the service and back-of-house areas. A separate performance system of EAW loudspeakers, supported by Frazier Cat40s for delays, provides sound for 5,500-seat Delta Ballroom A.

THE DELTA

The 4.5 acre Delta is the centre-piece of the hotel. Surrounded by nearly 1,000 new rooms, the Delta is bigger than both of the hotel's other indoor gardens (the Cascades and Conservatory) combined. With several waterfalls and a fountain that shoots 85ft into the air, The Delta's most spectacular feature is probably the quarter-of-a-mile long river, complete with flatboats, that carry passengers on a 10-minute pleasure cruise, which winds its way through the landscape, among numerous shops, a jazz bar, a food court, and the mansion.

Most of the Delta plantings - its smaller trees, foliage, and flowers - come from nursery stock, but the "odd-ball stuff, you get out of yards," said the hotel's director of horticulture, Hollis Malone. A 40ft tall West Indian Mahogany tree, he points out, came from a yard in Boynton Beach, Florida and the 70 black olive trees (20-38 feet high and about 20 years old) came

"To give you an idea of how big the room is, my house and all the property it sits on can fit in the ballroom - it's an acre-and-a-quarter."

from a property in Lake Worth, that was slated to become a residential development. More than 370 trees and palms have been used to create the sub-tropical world of the Mississippi River Delta under a 650-ton dome of glass.

SOUND FOR THE DELTA

The Delta Control room system provides audio control for the six restaurants of the food court, eight retail shops, and seven meeting rooms (all on the Delta 'island', surrounded by the lush Delta garden), a 20,000sq.ft two-storey ante-bellum mansion at the north end of the garden plus its Beaugard's restaurant, the Wedding Pavilion and the back-of-house service areas.



Early evening shopping on the 'Island'.

The control and processing equipment consists of a MediaMatrix system with 13 BoBs, and a Crest NexSys 3.0 system controlling four Crest CKS800 amplifiers, two CKV1600s, eight CKV200s, and three CKV400s. Each of the seven meeting rooms has a wall panel to facilitate patching, plus a Crestron control panel that communicates with the MediaMatrix system. Meeting room patch panels are configured with six mic line inputs, two line level inputs, and four tie line connections. The 400-seat Beaugard's restaurant has 12 separate audio zones, including the patio areas, which are covered by Tannoy Arena speakers.

The Wedding Pavilion is covered by three EAW UB-82s concealed in the facing at the top of the structure. No control panel was provided for the pavilion, but the area is wired for two monitor mixes via panels partly hidden in the foliage, so that an auxiliary system can be brought in easily.

A late addition to the Delta control system was the area surrounding the fountain, officially opened to the public in ceremonies held in late July. Like the Wedding Pavilion, it was assigned to its own zone in the Crest NexSys and MediaMatrix systems, controlling six permanent Renkus-Heinz SR-5/6 weather treated speakers, but with two monitor mix panels for an auxiliary audio system.

THE RYMAN EXHIBIT HALL

An expansion of the Ryman Exhibit Hall adds almost 150,000sq.ft to the hotel's existing convention space. The Ryman, itself divisible into two sections, adjoins the existing configurable exhibit hall space to give the hotel a total of 289,000sq.ft of continuous space - enough to accommodate, according to Opryland, 90% of the conventions held in the United States.

Sound for the Ryman Exhibit Hall is handled by the larger of the two control systems in the Convention Centre AV room. The exhibit hall area is divisible into two spaces, each with 26 zones of 16 speakers. A total of 416 of Tannoy's CMS 6TDC ceiling speakers provide coverage.

The music/paging system for the exhibition hall is served by 16 Crest CKV2400s located in the machine room at the rear of the hall. Again, these amps are connected to the NexSys system in the AV control room. Paging is assignable via Crestron control panels.

THE DELTA BALLROOM

The Delta Ballroom, the largest of the hotel's four ballrooms, is a 55,000sq.ft flexible space. This space is usually partitioned into Ballroom A, containing a 30ft x 80ft performance stage and occupying half the entire square footage, plus the Sewanee, Pearl, and Mississippi rooms, sharing equally the other half of the full ballroom space. In this configuration, a temporary service corridor divides Ballroom A from the other ballrooms.

But the Delta Ballroom can be opened to its full, open capacity. Randy Nale illustrates with a comparison: "To give you an idea of how big the room is, my house and all the property it sits on can fit in the ballroom - it's an acre-and-a-quarter."

The Delta Ballroom can accommodate 5,500 banquet guests or 8,000 for a concert. Double ceilings span the ballroom: a ceiling grid 24ft in height, and a domed ceiling 32ft in height above that, covered with a painted sky trailing luminous clouds. The lower ceiling houses the

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HV/AC distribution system and a computer-controlled lighting system that shines up on the dome, as well as the down-light for general illumination of the ballroom and the distributed loudspeaker speaker system.

The painted sky, visible through the lattice-work of the ceiling grid, changes hues during the programmed 'day', going from a warm yellow in the early morning, gradually transforming into a blue afternoon sky, dimming towards the latter part of the afternoon, reddening at sunset, and turning darker blue at early evening. The sky eventually goes to black. But illuminated by black light, the clouds and stars - painted with iridescent paint - glow against the night sky.

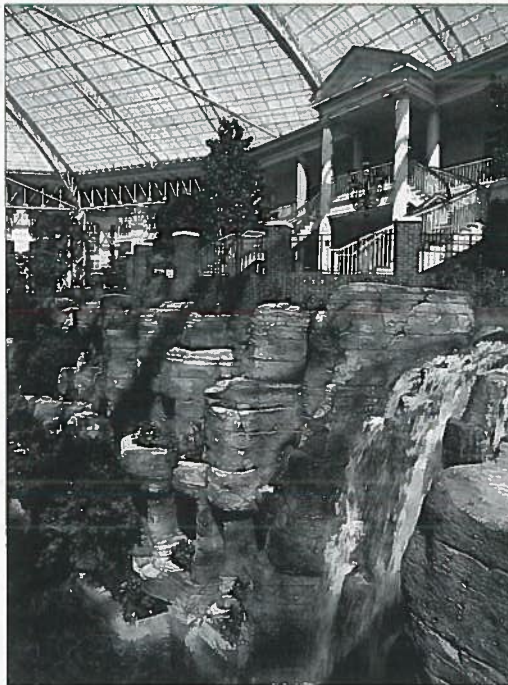
"The idea," said Nale, "is that you might sit down at a banquet with your appetiser in the morning, and by the time you finish your dessert, it's midnight."

SOUND FOR THE DELTA

Early in the project, ESa contacted Acoustic Dimensions to provide a proposal for room acoustics, sound isolation and noise control design services for the Delta Ballroom and meeting rooms. After working on the project for some time, it became apparent that a sound system design team were required. Acoustic Dimensions' capabilities in this area led ESa to enlist their help planning the sound reinforcement system for the Delta Ballroom, and later for the entire phase four expansion project.

"The design team and the hotel felt that it was important to co-ordinate the design of the room acoustics with the sound system design," said Craig Janssen of Acoustic Dimensions. "The Delta Ballroom in particular, with its huge dimensions, posed considerable design challenges. Since we were not able to modify the room shaping, the only tools in our bag were to apply acoustical absorption and control where sound was directed."

Acoustics work in the space included applying considerable absorption on the wall surfaces to reduce the level of audible reflections from the stage system. "What looks like wallpaper," said ESa's Nale "is, in fact, custom-designed, marbled fabric which is wrapped over a two-inch thick absorbent material." Special floor carpeting and padding also play an important part in the acoustic design of the room. Further acoustic work was done to ensure that the ballroom spaces could be used concurrently, without interfering with each other.



The Beaugregard mansion and restaurant, the Delta.

Designing loudspeakers systems for a divisible, multi-use space also presented considerable challenges, as Janssen explained: "These demands required sound levels, delay settings, mutes and signal routing to be configurable instantly to accommodate the diverse uses of the space. We spent substantial effort investigating the available options to ensure a flexible system to meet the needs of the entire complex. Of considerable concern was that while we wanted to be aggressive in using new technologies, it was essential that we did not lose sight of the need to implement solutions that would be very reliable."

Ballroom A (where the stage is located) has 15 zones of three speakers, with the side sections zoned diagonally. Ballrooms B, C, and D each have five zones of three speakers, whilst the temporary service hallway has three zones of three speakers. There are a total of 99 Frazier Cat40 loudspeakers in the Delta Ballroom distributed sound system, each of these has an eight-inch woofer in a conic horn-loaded bass reflex enclosure and a one-inch dome mounted to a high frequency horn coaxially mounted. These speakers, used for overhead distributed speech reinforcement, can be reconfigured with separate delay settings for each zone to provide delay fill for the performance system.

Ballroom A has two mix panels, four input panels on stage with a monitor mix panel, a truck panel at the loading dock for broadcast feeds, and three-way splitting transformers for all 72 performance input lines. There are three Crestron Control panels in Ballroom A, and three wall panels each in Ballrooms B and D. Ballroom C has two wall and two floor panels, all of which can combine when the relays are closed via 24 tie lines. The pre-function areas outside the ballroom and meeting room spaces have at least two wall panels, each with four mic inputs, four line inputs, four tie lines and eight local mic tie lines.

Each meeting room on the Galleria and Mezzanine levels also has wall panels, each with six mic inputs, two line inputs, and four tie lines.

THE BALLROOM PERFORMANCE SYSTEM

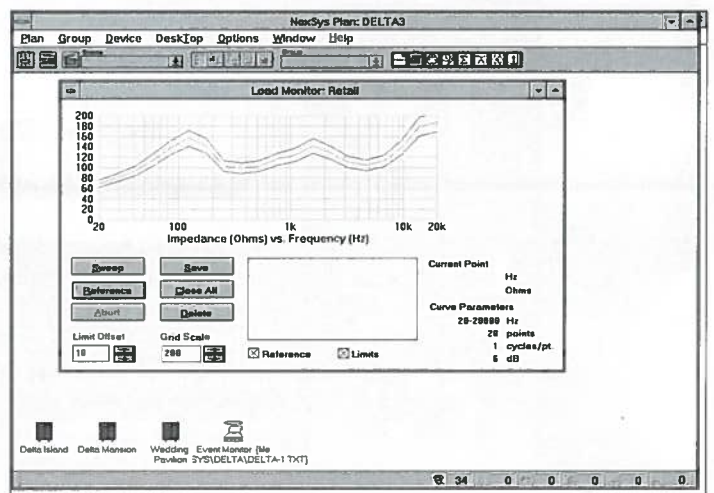
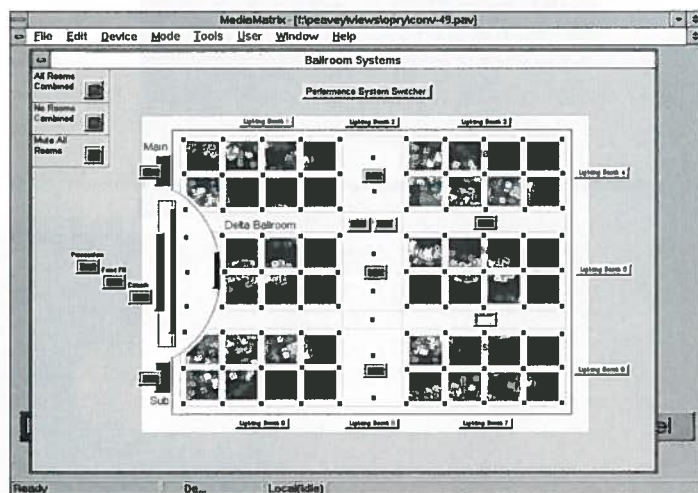
The performance system for the Delta ballroom's 30ft x 80ft stage and acre-plus of floor space, consists of four EAW MX662Exs, three AS300s for short throw, two AS300s for centre delays, two TD415

low frequency speakers, and four SB250 double 15" subs on either side. All the EAW speakers are powered by Crest amps under NexSys control from the main A/V system.

Designed as an 'intermediate' performance system, the Delta Ballroom rig, concealed at either side of the stage, is intended to handle the vast majority of shows playing at the venue. On rare occasions, depending on the act or artiste, the system can be supplemented.

The selection of EAW loudspeakers made good sense, said Turner, in a town where many of the professional sound companies doing touring acts have EAW rigs. The availability of EAW product in Nashville makes it easier to put together a matching system.

According to lead system designer, Vance Breshears (formerly of Acoustic Dimensions, now of Sound Technology Consultants, San Diego), the overhead distributed sound system is an integral part of the performance system: "Through the use of signal routers, delays, and sub-presets in MediaMatrix, one button reconfigures the entire ballroom system, making level adjustments, inserting appropriate delays into each overhead zone and selecting the appropriate audio source. Another single button (sub-preset recall) completely reconfigures the system to an



Above left, the MediaMatrix screen showing controls for the Delta Ballroom, in all its configurations. Above right is the Crest NexSys 3.0 load monitor screen for the retail shops and the Delta Island Courtyard.



Photograph by Jack Bradley, Peoria Journal-Star, Peoria, Illinois, 1953.

ME! THIS IS HAROLD WHITTLES. HE WAS BORN DEAF. HE'S JUST BEEN GIVEN A HEARING AID. AT THIS INSTANT HE IS HEARING A RECORDING OF HIS OWN VOICE. IT'S THE FIRST SOUND HE HAS EVER HEARD. AND IT FEELS LIKE A MIRACLE. THE MOST REMARKABLE SOUND REPRODUCTION THE REST OF US WILL EVER HEAR IS BY TANNOY.

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overhead system with the head table speakers attenuated by 6dB.

"We could have built a system into the walls that would require rows and rows of delays," said Turner, "but with the proper quality speaker, and the flexibility of the MediaMatrix system, we were able to achieve the seamless, front-to-back sound that we wanted."

Part of the system sound comes from the way it's wired. "Instead of 12 speakers on a 70v line per amp channel," said Turner, "we've got no more than three speakers on every amp channel, tagged into the Crest NexSys system, and from there into the MediaMatrix - which can give us as many digital delays as we need in that configuration."

The two EAW AS300s for centre on the back side of the lighting catwalk are delayed as well (eight Rane ME30Bs for the performance monitor system are in the main control room rack, but are easily removable to stage wings, left or right). The result? "A blanket of sound that just wraps you," Turner added. "You don't even know where it's coming from, it's so smooth."

It's not hard to imagine what adding components to any part of this system would involve, were it functioning strictly in the analogue domain. "I can't think how many components you would need to add delays to the Delta Ballroom performance system . . . it just wouldn't work."

All of which leads back to that basic notion: flexibility. And here's a story to illustrate just how important this can be: the first event in the Delta Ballroom was a silent auction. The full front half of the room (Ballroom A) was open and configured for a banquet/concert, and the centre back section was open, used as the grand entrance to the overall space. Michael MacDonald was performing on stage.

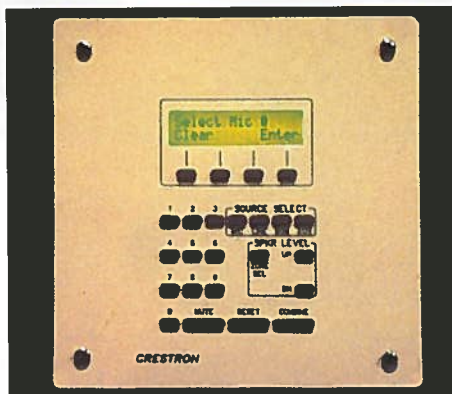
"Acoustic Dimensions just didn't think we'd ever use the ballroom in that configuration," said Turner, "so they didn't programme it into the MediaMatrix system. Well, first time out, there it was! Of course, they entered the set-up into the system, and we went from there."

SUCCESS . . . ?

At the time of writing, barely 60 days after the commissioning of the system, it's really too



System designer Vance Breashears of Sound Technology Consultants (in blue shirt, second left) at the NexSys workstation in the Main Control Room, with members of the team from the Opryland audio video crew.



The Crestron control panel in the Convention Center meeting room.

soon to tell the degree to which it is a success. With the exception of a few bugs - which everyone expects on a project of this scale - initial reports from both hotel patrons and

system operators are proving favourable.

Which is not to say that there is no learning curve or period of adjustment for all system users: "Some of the more advanced operational functions have been a little more difficult to learn," said Breshears. "Getting around the MediaMatrix control screens to follow signal flow and make adjustments took some time, but much less time than it would have taken to learn racks of separate processors, which couldn't provide the flexibility of this system."

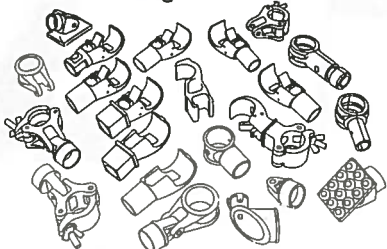
During training, the AV crew picked up very quickly on the operation of the control panels and used them immediately. In fact, some asked if the existing hotel convention spaces could be retrofitted with the same system.

If that sort of reaction from the people who use the Opryland system every day is not exactly an all-out endorsement, it is certainly indicative of a satisfied customer.

photos: Vance Breashears, Donny Beauchamp

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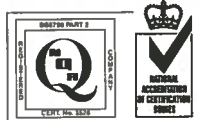
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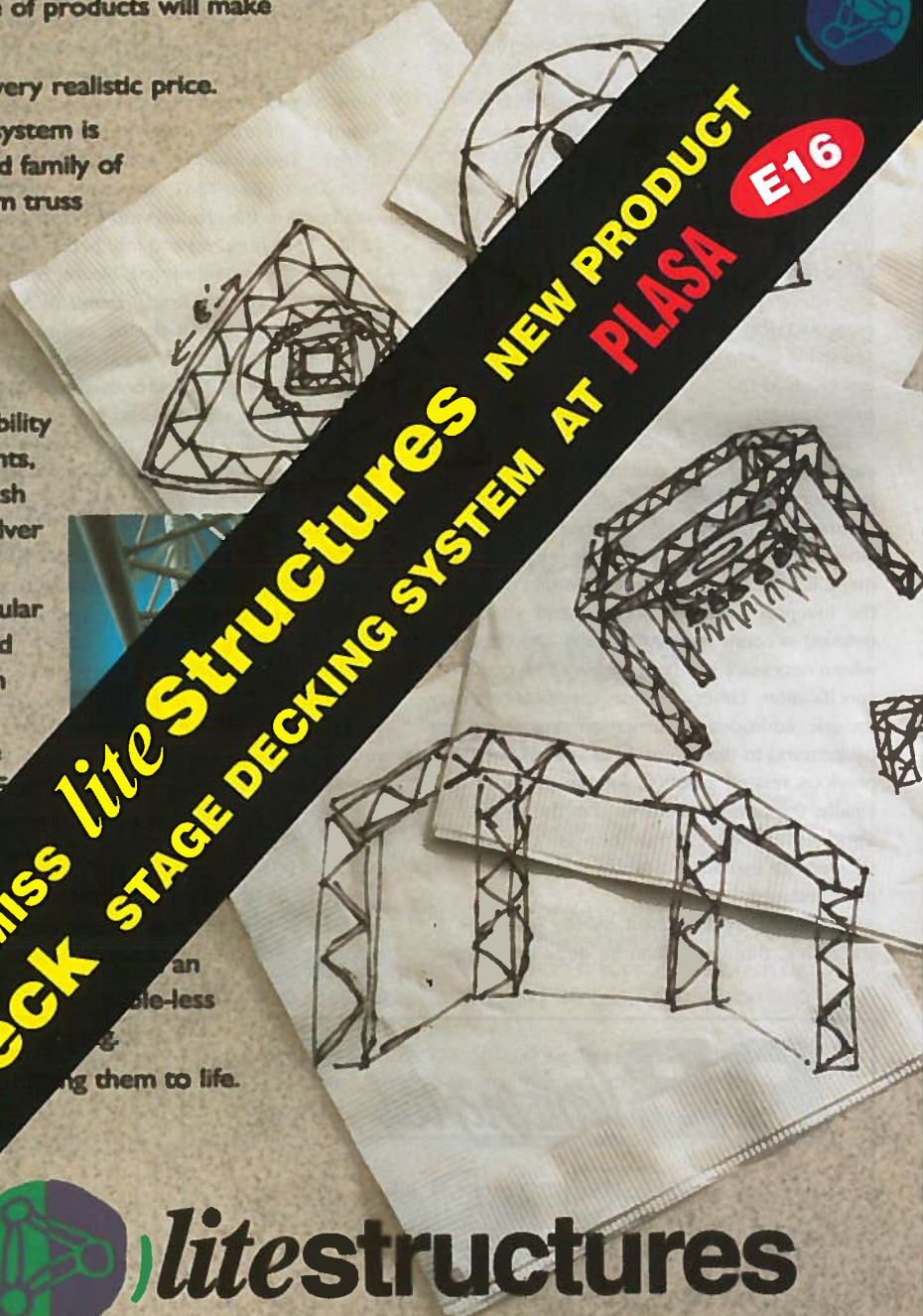
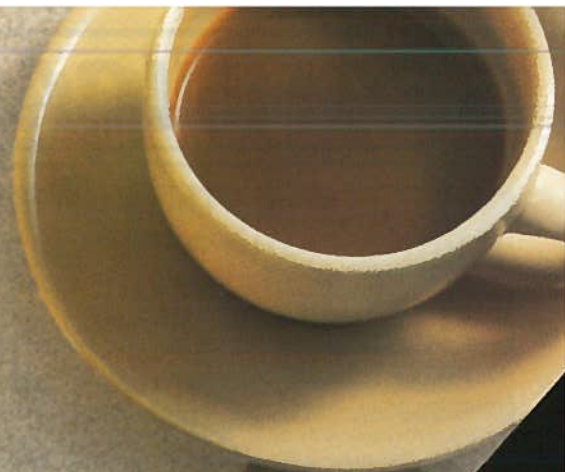
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EASY PEAVEY

In the run-up to the PLASA Show, L+SI talked to Peavey Electronics about their considerable achievements to date and their plans for the future

A four-mile move across Corby last October has given Ken Achard's Peavey team a perfect location from which to run the European headquarters of the Mississippi-based guitar-amps-into-contractor-sound company. With office, warehouse and assembly space amounting to 60,000sq.ft, they are occupying half as much space again as they had at Hatton House. And with a massive eight-and-a-half acre site at their disposal, offering plenty of green field opportunities, the development of their own production is still only gathering steam.

In truth, the move was a long time coming. But having converted the wide open spaces vacated by glass giants Pilkington, the previous incumbents, managing director Ken Achard reckons they are now 98% of the way towards their goal: "We looked at a number of plots and even considered building our own facility," he said. "Then we saw this place which Pilkington Glass built 10 years ago. It couldn't have been better for us because it was one big empty area - all we had to do was adapt it to our needs."

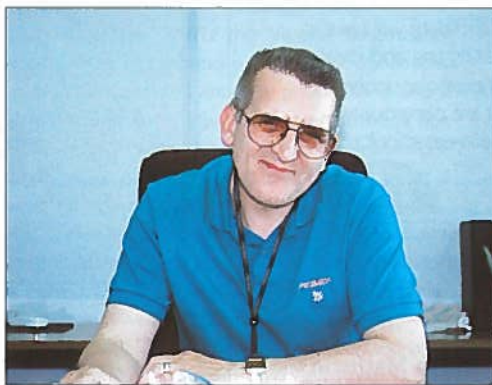
The laconic Achard makes light of such tasks. Much later in the day, during a visit upstairs to the newly-created mezzanine we discovered a superbly-fitted lecture theatre with adjacent demo room off the side. It's a facility that most companies would kill for; yet Ken Achard goes about his escorting duties in a dry, matter-of-fact manner that can obscure the enormous passion he clearly feels for the company's new home.

Attached to the back of the building it's hard not to be impressed by the equally hi-tech, two-pronged loading dock to transit goods to the two 40ft containers that take Peavey products daily around the UK and into mainland Europe. Gone are the days of loading up in the yard.

By the time the first phase of development is complete the investment will have reached the £3 million mark. The next phase in Peavey's UK surge has already been clearly mapped out. With Corby production of their own restyled HiSys cabinets moving apace, they need to create their own dedicated woodshop - an area which presently forms part of their general production and assembly area. "And once we get the woodshop separated," added Ken, "we'll be able to implement some of the electronics plans we've got." In preparation for this, they have already made a huge investment in dust extraction.

That aside, he continues, the operation is pretty much as it was at Hatton House. *Er . . . not quite.* That somewhat dismissive statement makes a mockery of the new Europeanisation of the firm. Although it's unlikely that Ken Achard will ever yield his hands-on, finger-on-the-button style of management, he is surrounded these days by sales staff, technical support and even an in-house press and marketing representative in Louise Wojnicki, who are fluent in several languages. But more of that later.

Fired by winning the Making Music Best Loudspeaker award for the HiSys 2, the new



Peavey's Ken Achard at his desk in the 60,000sq.ft complex in Corby, Northamptonshire (above), which the company moved into last year.

trapezoidal upgrade of an already successful range, and the first to come out of Corby, Peavey are stepping up the production of enclosures. Microphones too - since the economic rationale in shipping Neutrik connectors from Austria to the Mississippi, only to have them re-exported as finished goods to the UK, is a little perverse, to say the least.

In addition to turning HiSys over to the fashionable and arrayable geometric of the trapezium, they have incorporated an ingenious new driver protection circuit in Sound Guard, in which the driver never shuts down. The Sound Guard circuit is not just a light bulb, but a hi-tech switching mechanism that doesn't affect the original signal until excessive power is introduced into the system. Only then does the signal see the protection circuit. Based on a semi-conductor poly-switch, when the power is turned up it reaches a threshold and goes open circuit from its original cold, short-circuit state. The power is shunted through the resistor and bulb network and two levels of damping are provided. Other protection devices are literally either on or off, but with Sound Guard the operator will experience a drop in level first, alerting him to the fact that something is amiss. Assuming he then turns down the power, it will cool off and reset itself.

Peavey will soon be able to retro-fit Sound Guard to an original version HiSys, which will

be of great significance for touring DJs and musicians - as well as installers who own the system. Keeping the Corby end firmly in the ascendancy, Peavey have simultaneously enhanced the cosmetics and roadworthiness of the EuroSys series, providing larger steel corners and a new heavy-duty metal grille. Ken Achard explains: "EuroSys gets used by Saturday night bands and takes a lot of hammering - hence the reason for putting a steel grille on it."

At Frankfurt, Peavey also showed they were not afraid to enter the moulded enclosure market (though this did not originate in Corby). The high-performance Impulse 200 (available in powered and unpowered versions) emanates from Meridian; a relatively lightweight box for the power available, it is designed to meet yet another requirement in the pan-global sound reinforcement market.

Every application has a specific requirement and the only way you can address them all is with a product that suits each eventuality," explains Achard. "The kind of investment involved in generating a product like this is so large that you have to go for a targeted market. With timber enclosures you have the advantage of acoustic tuning - but Impulse is easily transportable and cosmetically appealing."

Hartley and Melia Peavey, of course, are used to making huge long-term investments away from their traditional core business of guitar and bass amplifiers. In fact, over the past 30 years, their range has included public address and power amplifier utilities - such as the renowned CS-800. But rarely have they dived so headlong into the future as they have with MediaMatrix, first revealed to unbridled critical enthusiasm at the 1993 AES Convention in New York. The MediaMatrix computer-based sound system planted Peavey in the forefront of 'virtual' DSP technology, and now that it has been trimmed in size and price, the new architecture will form an explosive centre-piece of Peavey's PLASA Show exhibit this year.

"It will be our main focus," confirms Ken Achard, "especially the Miniframe, which is a cut-down version of MediaMatrix. Whereas the 700 and 900 Series are appropriate for the large

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MA LIGHTING

American installations, venues in Europe are so much smaller, for which the Miniframe is a far more viable solution."

At the recent NSCA Show, Peavey took the concept a generation further by showing the diminutive X Frame, operated from a PC, though this is unlikely to see British shores until next year. So what is the role of MediaMatrix? It simply replaces everything in the audio chain, between input signal and the power amplifier, with software. "We are using a Windows-type environment so it's easy to manage," explains Achard. "The software allows you to design a very simple or very complex system."

Like others, it was designed to meet a specific need; at the US Senate, each senator's audio station, and the gain structure, EQ and mic, are all managed through MediaMatrix. What MediaMatrix does is to enable the consultant to build up his own inventory of signal processing devices. He can cut and paste a standard inventory or create his own, the mouse effectively substituting for the conventional wiring - all carried out on a 486 PC.

"When you set out to compile the system," says Achard, "it will tell you what hardware configuration you will need and allow you to constantly modify, adding an EQ here, a delay line there, tweak the system in real time and have it configured in as many different ways as you want. It's ideal for a multi-purpose building hosting a variety of different events - plus, of course, the installation costs are greatly reduced."

MediaMatrix was first shown to UK visitors in its original form back at the SCIF Show over two years ago and it's only recently, with endorsement from serious audio consultants, that the product has come of age. Ken Achard senses that now is the time to actively start selling it - and the Miniframe is the key.

One high-profile UK installation of MediaMatrix is at the new Hallé Concert Hall in Manchester, via Roger Vinton's company, DRV. The specifier and audio consultant on this, and the year's other major project, the ongoing equipping of the Liverpool Institute for Performing Arts, was the eminent Sam Wise. He was accompanied on the MediaMatrix training programme in the States by another pro-audio specialist, Andy Baker, who heads up Marquee Audio's Special Projects Division in Sheffield, and it was the latter who has fitted a MediaMatrix 700 into the vast sound inventory.

"MediaMatrix was specified because LIPA has always wanted state-of-the-art technology, and for its flexibility in both a teaching and performance environment MediaMatrix was ideal," expands Baker. "It enables you to teach students different configurations, allowing them to construct a system however they like. It may be used to make four graphic equalisers one day, and a complete, complex system with delays, compressors, crossovers, parametrics



Original Peavey UK man, design engineer Mike Lee demonstrates the Sound Guard driver protection unit.

and distribution amps the next. MediaMatrix is linked to the auditorium, it's easily remote-controllable and has been used on every performance that's gone through the main hall."

Andy Baker maintains that anyone who understands the Windows principle will have no problem getting on with it, describing it as "a pretty intuitive tool". Further afield, MediaMatrix's remote control capabilities have already been shown at the Astrodome in Atlanta where, according to Ken Achard: "They can have a guy with a laptop, a Modem and a mobile phone, with the system running in LA, listening to the set-up through a modem link. You can password-access to any part of the system and if you want a 500-channel mixer you can have it - it's an exciting product."

"Why would a significant manufacturer of hardware be so interested in investing in a system which will replace hardware? The answer is that if in 10 years' time you don't have it, you will be dead!"

And so, with one eye cocked firmly on the adjacent BMF show, where they will also have a presence, Ken Achard will be arriving at Earls Court in September with undoubtedly higher expectations than at any other trade expo he has attended. The PLASA Show, thinks Achard, has grown to become just about the perfect launch-pad for MediaMatrix. "The assimilation of SCIF was an inevitability," he believes. "All these black and white boundaries just aren't there anymore - it's now a technology-driven show aimed as equally at musicians as audio consultants."

Peavey will man stands in both the PLASA and BMF halls, split by the escalators and actively encouraging a two-way traffic between each zone. A product like their HiSys enclosures, for example, will feature on both

stands. Yet whatever success PLASA has in store for MediaMatrix (and the principles of scale suggest that they will come from outside the UK), setting off down the empirical path to establish an effective European HQ could yet be Ken Achard's greatest triumph. Three years since Peavey, in common with many other firms, started looking at the ramifications of the single market, the company's achievements have been such that he is now being invited to speak formally about them.

He explained how the idea of establishing a single pan-European set-up was instigated by Melia Peavey: "At the time we had a stand-alone operation in the UK and a hotch-potch of people distributing our products throughout Europe. What then happened was a combination of circumstances. From our point of view there was an opportunity to gain control over many issues - quality not least."

"It basically meant a restructuring of our European distribution and we tried to set up in a way which would give us the economic advantage of a centralised operation, while respecting the national cultures across the continent. Though we are a single market, we are composed of so many different peoples. Yet most of the major products are global, and we're typically dealing with the same customers, whether musicians or contractors, the only major difference being the cultural environment in which they find themselves. It's no secret that this is a US company with a central European distribution based in England - but that shouldn't be a problem."

Recognising the need to provide the maximum transparency they could for their customers, they set up an international sales operation in France two-and-a-half years ago. "We had conducted a third party arrangement there for a number of years and when our agreement came to an end, we decided to do it ourselves," says Ken. "We have French sales people and have installed an 0800 direct line which is programmed to ring here via the Numero Vert (freephone). Everything we do is designed to input transparency. When we transact in Germany, we deal in Deutschmarks and they pay the Deutsche Bank."

Peavey's colonisation of France has been a "phenomenal" success, according to Achard, who can relax in the satisfaction of having achieved a remarkably decentralised, non-xenophobic policy. "It was great to come up with the idea - but then some silly sod had to make it work! You don't start out to learn about employment and banking law and national insurance in foreign countries - but that's what happens!"

Just how difficult had it been? "In retrospect the answer is that it was amazingly simple, but at the time it was one drama after another. The Swiss and Spanish banks, for example, are very different in the way they set up their accounts."



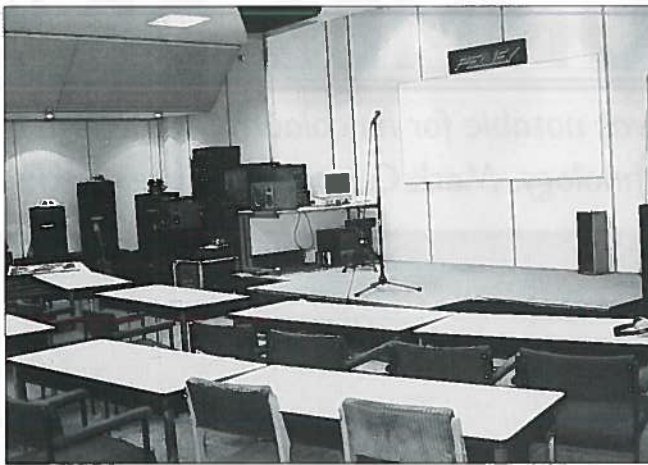
Peavey's high performance Impulse 2652 (left), MediaMatrix computer-based sound system (centre) and the CS 3000 contractor amplifier (right).

And that's where the language proficiency has come to his aid, for Peavey now have capability - or at least coverage - in French, German, Dutch, Spanish and English. "There are so many who now speak several languages," says Ken, with obvious satisfaction, as the multi-lingual cacophony of sales personnel, babbling to customers in their native tongue, bore witness. Why, the dual linguistics even extends to credit control! But not for the first time today, modesty intervenes.

"I think all we've done really is take a concept that is so obvious, and been promoted so heavily, and made it work."

Ken Achard is genuinely "flattered and honoured" by the invitation to talk formally about the experience by the American Chamber of Commerce. Through it all, Corby has gone through its own process of self-seeking with the trials of attaining ISO 9002 (BS 5750) certification. Achard explained the rationale: "People now want audited control of quality and we felt that having ISO 9002 not only stood for quality, but that there would be commercial advantages for us in demonstrating the excellence of our procedures. Going for the certification forces you to question everything you do, although I'm not sure we have yet made as much commercial use of it as we might."

Nevertheless, it is a colossal landmark to have attained. Remember, it is only 10 years since four men - accountant John Moore, design engineer Mike Lee, sales rep Bob Pickwood and Ken Achard himself - arrived in Corby to set up a UK manufacturing facility for the Meridian, Mississippi company. All four remain with the company to this day; but now they share their headquarters with another 65 or so colleagues. In terms of financial turnover, they have witnessed something like a 20-fold increase. Steadily Peavey are improving their self-sufficiency and increasing production. For example, they have set up a new silk screen



The demonstration facility and seminar room.

printing system and are now building their own crossovers at the Corby plant. In addition, they have embarked on the production of a range of audio cables and have their own mic assembly.

It's a far cry from the days when Ken Achard had been a music dealer, "discovering" Peavey while in the States buying vintage instruments. He was a director of the prominent musical instrument wholesalers, Top Gear, in Denmark Street, during the late sixties and early seventies, remembering: "When I first went to Meridian in 1973, I became one of the company's first export customers. In those days there were fewer than 100 employees, now there are 2,500 employees based in 30 different factories in the States."

Frankfurt had a certain poignancy this year for Achard. For the first time, he had his new UK PR assistant, whose fluency in three languages sums up the new spirit of adventure at Corby. Secondly, Peavey won that coveted award with a Corby design - Mike Lee's HiSys speaker range. He is the first to acknowledge that it's been the contractor market that has led the company's growth, stating vehemently that "we have long ceased to be only a guitar amplifier company. It's contributed to the diversity in our product range and has undoubtedly given us the strength that some of our competitors don't have right now."

Peavey could probably have grown more quickly but the partnerships they are forming

with some of the more recognised contractors are relatively new ones, in turn leading to sales in which they are not directly involved. "We are just pleased to be working with companies of the calibre of The Music Company, Wigwam and Willow Communications, that put out fine installations, using more and more of our products," summarises Ken.

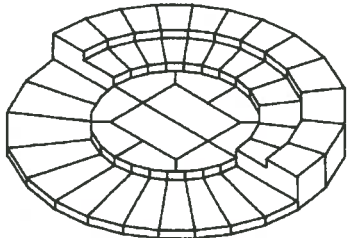
But it would be wrong to think that Peavey's entire PLASA Show exposition revolves around MediaMatrix. The contractor product range is expanding with the introduction of the new CS 1800 and CS 3000 amplifiers - the latter a 3000W concert power engine - followed by a number of new Architectural Acoustics amplifiers. The interesting feature of these is that, following the example of TVs being built 'NICAM-ready', these amplifiers are 'future-proofed' by virtue of having the MediaMatrix control already built-in - which is likely to be a big issue in public building safety.

Peavey are also launching their new range of equalisers incorporating a feedback location system. As such, the Q215F, Q231F and Q431F are seen as being ideal for mobile disc jockeys. Then, of course, there is the popular HiSys 2. It was at one of their annual development meetings involving major European sales agents and dealers, that a trapezoidal design for HiSys was suggested as being easy to array and essentially better. "There's an element of fashion to it all as well," appraises Achard.

A lot of effort has also gone into producing a range of compact subs - always a key issue where the containment of essentially large magnets and transducers is concerned. And so Peavey's European manager admits to being viced up about September - all he would like to see now is a single show. "It'll probably never happen because the politics won't allow it. The BMF and PLASA are the only two shows I do in the UK - PLASA alone is worth it for the European connections, but because the differentiation of the sound requirements between theatre, installation, live and studios is now fuzzy, it makes sense to have a single show."

Meanwhile, Ken Achard is in training for four days of running up and down the Earls Court escalator between the two halls - at least for one more year.

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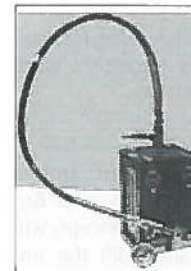
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THE SUMMER OF '96

Bryan Adams European tour was notable for its colourful set design and extensive use of lightweight amplification technology. Mark Cunningham goes backstage at Wembley

It may well have been the effect of global warming on my brain, but for some inexplicable reason I chose to spend most of my weekends in July and August at Wembley Stadium. Now, the negotiation of the famous Brakeyard Tunnel and familiar security team has become second nature to me, as has the shelling out of mortgage-sized amounts of cash for the disgustingly over-priced snacks. Undeterred, like the glutton for punishment I seem to be, I visited the twin towers yet again in late July to see Bryan Adams complete the European leg of his '18 Til I Die' tour, with support acts Ricky Ross (ex-Deacon Blue), Melissa Etheridge and the brilliant Del Amitri.

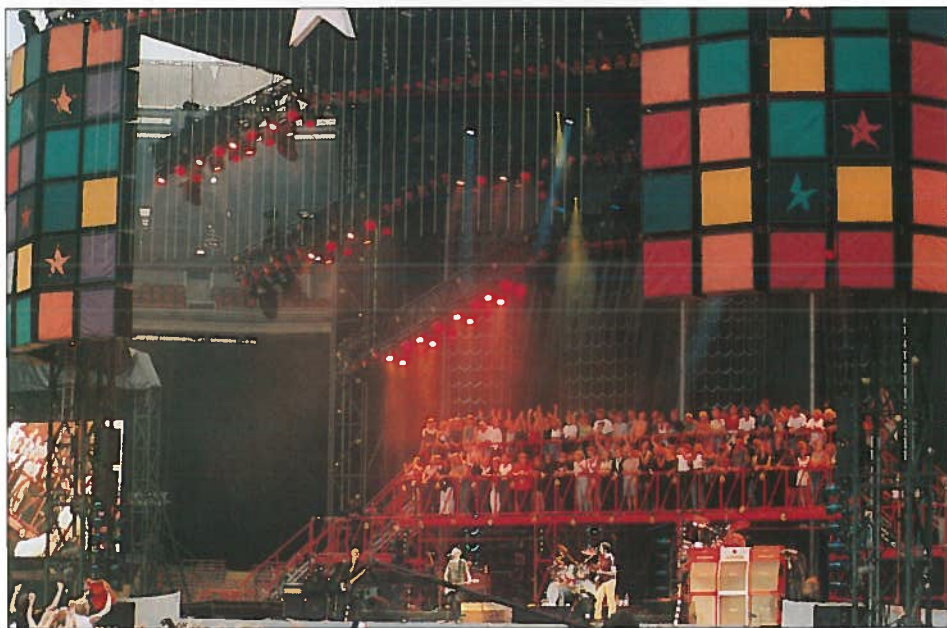
With most of the afternoon spent among a mountain of flight-cases as I grilled the crew about the production, I missed Ross and Etheridge, but the Dels were on fine form and, unlike the last time I caught them, they managed to slip in my old favourite 'Kiss This Thing Goodbye'. By 7.30pm, the crowd was hot for Adams as he entered the stage and launched into an uncompromising slew of hits, including 'Run To You', 'Somebody', 'Cuts Like A Knife', 'Have You Ever Loved A Woman?', a truly electrifying version of the duet 'It's Only Love', with Etheridge returning to take the part of Tina Turner, and the unmentionable, painfully familiar ballad which occupied the Number One slot for most of 1991.

There were two parts of the show which were particularly entertaining: the first, when Adams invited a bare-chested male reveller on to the stage to sing 'Summer of '69' (an instant star!); the second, when Adams and his band rushed through the crowd and leapt on to a central B stage to perform a pure, in-the-round rock and roll set, enhanced by an enormous pair of underwear-clad, inflatable dancing torsos, courtesy of Air Artists. It was that kind of a show.

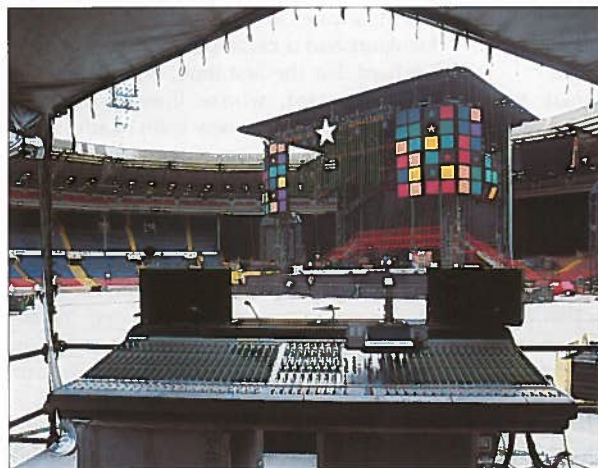
Back on the main stage, on which a rear catwalk provided a memorable vantage point for a crowd of specially invited fans, Adams climaxed with his soft rock anthem 'Heaven'. Never his biggest fan, I had grossly underestimated Adams' appeal among the masses and across such a wide span of ages. His relentless, Springsteen-defying three-hour set gave the crowd immense value for money while increasing his status among the world's most energetic rock performers.

THE VISUALS

The staging for this latest Adams' trek was co-designed by Willie Williams and Bruce Ramus, who came up with the concept, whilst Edwin Shirley designed and built the tower system, in addition to handling all the trucking. Video close-ups were directed by Paul Becher and displayed on two Panasonic modular screens, which were developed for and supplied by Astravision. Like most of the crew, lighting director Mark Cunniffe is a freelancer who took over from Williams when he began working on plans for U2's forthcoming international touring monster. For an al fresco



The colourful stage, with members of the specially-invited audience on the platform to the rear adding an unusual but effective substance to the stage design.



A Soundcraft 48-channel Europa, front of house.

performance, this LSD-supplied lighting rig was more than substantial, as Cunniffe explained: "We have around 600 Par cans and 290 Uni-Pars. These latter are a clear plastic can that will take the heat of a 1000W Par, and you can have the plastic in any colour desired. There are 96 LSD Washlights and 30 LSD Icons, as well as a considerable amount of floor equipment. For the conventional rig, we are using an Avolites Diamond console and the Icon desk is running everything else, including strobes.

"The idea is to get away from the huge metal monstrosities that you get on a lot of rock and roll shows these days, and concentrate on delivering a lot of colour. With the Uni-Pars and the Washlights combined, there is a really good sense of colour, which blends in well with the PA. We've been doing some outdoor shows in southern Europe where it has been getting dark earlier and it's so effective as an outdoor rig. The catwalk at the back of the stage was a result of Willie's idea to get the total involvement of the crowd without playing a conventional in-the-round show. That works because it

forms a really good backdrop with lots of light-coloured summer clothing to pick up the lights."

THE SOUND OF JASON

Vancouver's greatest musical export, Bryan Adams, signed with A&M Records in 1979 and providing the sound system and expertise on his first nightclub date in his hometown in 1980 was Jason Sound Industries (JSI), now arguably Canada's most successful audio rental company. Also from Vancouver, JSI was founded in the mid-1970s and has worked alongside Adams on all his headlining tours since 1983. The JSI rig on tour with Adams in 1996 is a JBL-component custom system by the company's head designer, Jeff Berryman.

JSI president, Jeff Lilly, said of the system: "We have 120 of our J60 boxes which are our full-size boxes, and it's a three-box system. 36 of them are used as under-stage subs and 84 are flown. We also have 24 J30 half-size boxes that are used for side, near and front fills as a two-box system. We believe in horn-loaded technology and think that the proprietary nature is in the horn throats, and the component count and general layout of the box is not something we try to hide."

In February, JSI was acquired by the concert and theatre lighting specialist organisation, Westsun International. A result of this merging of two normally opposed entertainment disciplines was the rather garish-looking flown speaker arrays. Lilly explained: "Lighting and sound have never really got along too well in the concert situation, and there are some major sound companies which are hostile to lighting and set design. They hate anyone touching their

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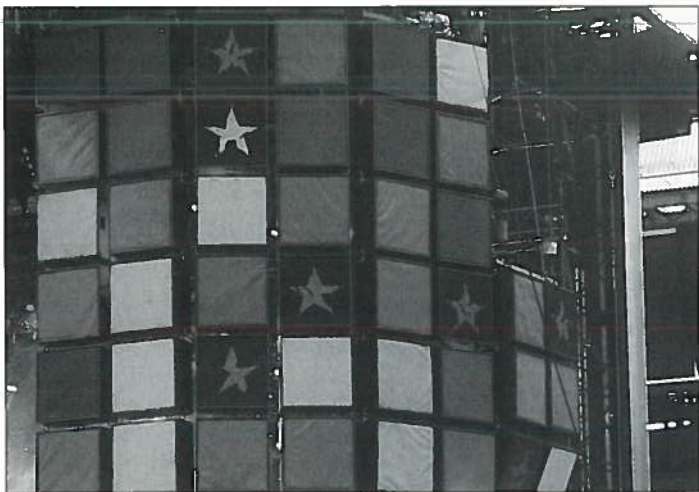


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Willie Williams' strikingly decorated PA wings.

boxes or even lighting them! So this purchase was quite radical, and we thought that this integration of sound and lighting may even give us a competitive edge.

"We actively solicited set designers and told them that if they had ever thought of ideas that were rejected by a sound company they should let us know because we would be more receptive. We offered designers the opportunity to use multi-coloured grilles on the PA speakers to get rid of the traditional black cloud at each side of the stage. Little did we realise that this germ of an idea would lead to what Willie Williams designed, and whilst some of the crew felt that it was a little cartoonish, it's a move in the right direction."

45 DEGREE MIXING

The front-of-house mixing platform was unusually positioned at 45 degrees, stage left, which meant that the engineers were effectively mixing from one stack. Adams' man Jody Perpick engineered a 48-channel Soundcraft Europa console (40 mono, plus four stereo channels) while a Midas XL3 was shared by the three support bands' engineers, including Del Amitri's Andy Dockerty of Liverpool-based rental company, Ad Lib Audio.

Mixing the Dels under festival-type conditions clearly had Dockerty working by the seat of his pants. "By the time I get to the desk for the Dels, I am using whatever Melissa Etheridge's engineer has set up in the way of EQ as my starting point and from there on I am estimating our own EQ and gain structures. It simply means winging it for the first couple of numbers. There have been no soundchecks for the supports, just a quick line check and then we're on! If you're in a situation where the support is touring for three or four weeks, you can chart up your desk so that you know where you are. But we're only doing two shows on this, so there's been no point. The last time I worked on a Bryan Adams tour was with Texas and they insisted on carrying their own board, which gave me a little more of a head start."

The XL3 ran via the Europa and at a previous date at the Alfred McAlpine Stadium in Huddersfield, Dockerty noticed a suspicious amount of compression in the system whenever he attempted to wind the volume



Andy Dockerty, FOH engineer for Del Amitri.

up. This, he believed, had more than a little to do with the decibel limits set for each venue. "There is a ridiculous dB limit set for Wembley. It's 100dB at the desk, but it can't be more than 65dB outside the stadium. For it to average at 100dB over the course of the day, the support bands have to run at 95dB to allow Bryan to play at 105dB for that extra presence. But it's very difficult to mix at 95dB in a stadium this large."

A staggering amount of BSS Audio processing equipment was to be seen in the outboard racks, including the Omnidrive loudspeaker management system, DPR-504 quad gates, DPR-404 quad compressor/de-essers, FCS-916 parametric EQ/pre-amps and DPR-901 II dynamic equalisers. Jody Perpick became an instant convert to BSS when he used the FCS-926 Varicurve dual equaliser analyser's wireless remote for the first time four years ago, and on this tour he also used the portable FPC-900 Varicurve Remote to EQ the rig on a stadium walkabout. The analyser source on the Remote can be switched to a phantom powered mic, giving Perpick the opportunity to individually tune and mute the main stereo (left/right), sides stereo (left/right reversed), the



JSI crew chief Dean Roney (left) and company president Jeff Lilly.



The 'Groover from Vancouver' appears on the big screen courtesy of Astravision, who supplied the two modular Panasonic units.

long throw and understage speaker systems.

It was strange to note a complete absence of delay towers in the field, but Adams' sound crew chief, JSI's Dean Roney commented that the singer harbours a built-in opposition to them. "We don't normally use delays because we feel that our speaker configuration produces enough energy of its own. Bryan Adams is very involved in not having any large structures in the way of audience sight lines, which is why there is no roof over the mixing platform."

He was also showing signs of extreme frustration with the venue's management. "Wembley Stadium is probably the most difficult venue we have ever played and Valdis Dauksts, our production manager, spends all day long dealing with inspectors."

Dockerty, meanwhile, felt it appropriate to air his views on the whole concept of stadium shows. "I'm not a fan of stadium sound, although from a technical perspective it's probably improving. The sound quality in a stadium, in comparison to an NEC style show, is extremely inferior, and the people who really suffer at the end of the day are the punters. I don't believe that they appreciate just how much they are missing out on, which is why so many promoters have got away with cramming audiences of 50,000 upwards into stadia for so long."

The Shure name permeated all conversations on the microphone theme. The vocal mic selection consisted exclusively of Beta 58As, of which Roney said: "It's Bryan's favourite, and although it may not be the most hi-fi mic in the world, it remains the most used." Other mics included Beta and regular 57s, 98s and 91s, plus a variety of Sennheisers, Neumanns and AKGs. "We try to use as many Shure mics as possible," commented Dockerty. "HW (HW International, Shure's UK distributor) look after us very well, and I've always been a great fan of the 98s and 91s. Jason Sound have also served us very well and I simply told them that I'd go with whatever was easiest for them. You can get too precious about these things - by the time we're getting the sound just right it's time to come off!"

IN-EAR MONITORING

An additional six AKG 3000 mics were required to pick up the 'vibe' from the audience and deliver it to Adams and his band through their Garwood Radio Station in-ear monitors (IEM). A total of seven wireless systems were in use, including a spare set for monitor engineer, Glen Collett, who was running two Soundcraft SM24



Bryan Adams' lighting director, Mark Cuniffe (left) and the monitor men, Glen Collett for Bryan Adams (centre) and Dave Kay for Del Amitri (right).

consoles. In a similar approach to that of Rod Stewart's David Palmer, Adams' drummer Mickey Curry added weight to his in-ear mix by having a 'bass thumper' attached to the underside of his stool to simulate some low frequency. Although a great believer in the IEM cause, Collett finds that, in the rock genre at least, he needs to reinforce the IEM sound.

"If you're working with guys who are used to getting a feel for what they're doing from wedges, they definitely miss them if they're not there," he said. "The drummer will be used to feeling some air move around him, so we have to adopt some unusual methods. I'm only using side fills for some vibe, plus a pair of wedges for the keyboard player and they are at low level."

Collett prefers not to add too much EQ character to the IEM mixes but adds that he needs to work hard on 'enlarging' the sound. "The first comment people make when they begin to use IEM is that it sounds 'small', so my job is getting it to sound as big as possible without saturating the little Radio Station. It's a balancing act, but the benefits are enormous."

He also adds that as a direct result of the IEM approach, his input count has risen "beyond belief" to 68 which, for a six-piece band, does seem rather excessive. "Now, they all want cymbals, ambience and all kinds of things you'd never put through wedges. I also end up splitting inputs and having duplicates, because people want different EQs. Before, everyone would hear the guitarist coming from his big stack. But now that I'm supplying it to them, the bass player doesn't want it as bright as the guitarist, so I have to split the input for that. But that's just the beginning. The drums that come out of the side fills sound big and fat, but I can't replicate that on the in-ears otherwise it'll cover up the rest of the mix for something else. So I split the kick, snare and tom inputs for someone else... it goes on and on! I'm listening on in-ears as well and I have a spare IEM wireless system that I hook up to the cue buss, so that it's always running and I can listen to what they're hearing. If one goes down, I can quickly swap the mix into the spare."

Theoretically, IEM does deliver an enormously improved, hi-fi quality sound to the artiste. But, Collett says, the hardest-working IEM engineers will always be the ones in the rock music field because of the constant desire

to push the boundaries of the system's dynamic range. "For artistes who work at low levels, the benefits lie in the nice, big spacious sound. Our on-stage levels are a lot quieter than they ever were before, so the musicians don't get the ear fatigue that was commonplace."

IEM has probably come along at just the right time to prevent 37-year-old Adams from doing irreparable damage to his vocal chords, as Roney observed: "It may be too early to tell, but my belief is that IEM can prolong an artiste's career, because by having monitors in his ears, he doesn't have to exert himself as hard vocally, so his throat may last a few more years than it might with wedges, where he is fighting against loud on-stage volumes."

Adams and his band were not the only artistes at Wembley to use IEM. For years, Del Amitri lead singer and bassist, Justin Currie, repeatedly asked for his vocals to be loud on-stage, but this often led to impractical ambient stage levels. The problem was solved by him being the sole band member to use IEM. The Dels' monitor engineer and Ad Lib Audio man, Dave Kay commented: "All he has in his mix is his vocal, plus the drum overheads which also pick up some of the surrounding backline. He also gets some wedge back-up for the bass and drums, and a tiny bit of the guitars on larger stages where the band members are wider apart. As a gesture to the support acts, Jason Sound brought with them a bunch of 2 x 12" and 2" loaded wedges, although at the Huddersfield gig, the Dels were complaining bitterly about the lack of them."

Kay believes that the Soundcraft SM24 provides such distinct benefits for IEM that it could easily have been designed for it. "The SM24 has eight stereo outputs. The first eight outputs are mono for wedges and you can use the stereo buss for running side fills. You can easily configure 16 mono outputs or eight stereo outputs, so it is ideal for sending eight channels of IEM."

LIGHT AMPLIFICATION

Driving the whole JSI rig was a massive pile of QSC Powerlight amplifiers, with 109 1.8s and 42 of the newer, larger-powered version, the 4.0. JSI's embracing of QSC began 18 months ago after the company had spent its previous 10 years as an exclusive Carver amplification customer. It was at the October 1994 AES Convention in San Francisco that Lilly caught his first sight of QSC's Powerlight products and he was immediately impressed. The news that Gordon Irwin, Carver's primary engineering specialist, had joined QSC was a further incentive in Lilly's eyes. "Although the Powerlight technology is QSC's all the way, it could be argued that this was the next generation of lightweight technology that we had been looking for and there was some continuity in the engineering that we appreciated. QSC needed to make an impression in concert touring and so was looking at appropriate ways to do this."

JSI finally made the unreserved switch to Powerlights at the beginning of 1995 and has never looked back.



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ON THE ROCKS

*Ruth Rossington travels to the wilds of Cornwall to see *Wind in the Willows* at the open air Minack Theatre in Porthcurno*

The Minack Theatre, perched just a stone's throw from Land's End on England's most craggy peninsula, is as much a part of Cornwall's history as Daphne du Maurier, Poldark and the famous Pasty. The story of how it came to be is one of the most interesting theatrical narratives of this century, and all the more remarkable for charting the story of one woman's determination to breathe life into the open-air theatre, despite the Second World War's attempts to unravel her efforts time and again.

The Minack owes everything to Rowena Cade; she literally built the modern 'amphitheatre' out of the cliff face, on no sturdier a premise than to create a suitable setting for a local amateur production of Shakespeare's *The Tempest*. The group had already staged *A Midsummer Night's Dream* in a tree-lined meadow at nearby Creen, but the rugged coastline of Porthcurno offered a far more appropriate backdrop than Creen's secluded valley and over six months, Cade and two Cornish craftsmen built a simple stage and rough seating. Granite was cut by hand from a pile of tumbled boulders, stones were inched into place and the terraces were in-filled with earth and small stones shovelled down from the higher edges.

With the somewhat primitive theatre taking shape, *The Tempest* opened at The Minack in 1932, lit by batteries, car headlights and a feeble power supply brought down from nearby Minack House. Over the next seven years, each winter was dedicated to maintaining and upgrading the spartan facilities with continuing improvements and extensions.

Despite the growing popularity of the theatre, setbacks were to follow all too swiftly: at the close of World War II, the army and prisoners of war were sent in to clear the coastal defences, reducing the theatre to its original 1932 state. Undeterred, Rowena Cade set about the task of rebuilding the venue, painstakingly restoring it to its pre-war condition and ultimately continuing to work on it until well in her eighties. When she died, just short of her ninetieth birthday in 1983, she was



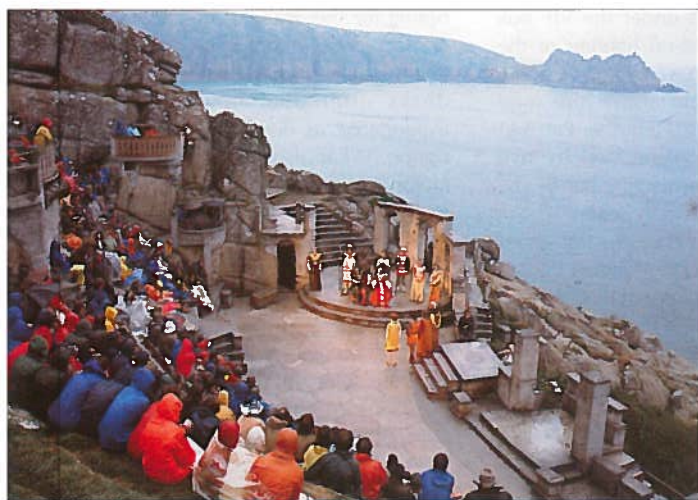
Above and below, just some of the many productions that have been staged at The Minack. The works of Shakespeare have provided a central focus to every season.

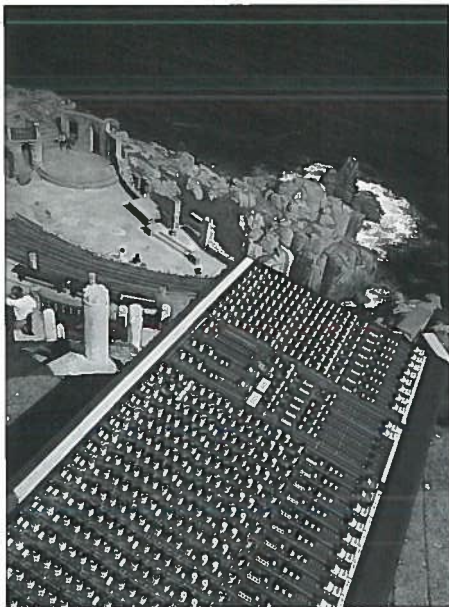
still thinking of the future. She left elaborate sketches suggesting how the theatre might be covered on the days when it rained. As yet no one has had the temerity or the finance to implement those plans, as we were to discover on the night we visited mid-way through the theatre's 18-week summer season . . .

Just occasionally in life, one has what can only be described as a 'surreal' experience: mine came on this sheer Cornish cliff face, with the wind spiralling dementedly and the rain lashing in from the sea, frozen and soaked to the skin, whilst watching the dying embers of a performance of *Wind in the Willows*. Resisting the inclination to flee, it occurred to me that nobody in their right mind would subject themselves to such abuse in the name of art. And yet, there we all were, 800 strong, clinging to sanity and sleeping bags, in a desperate attempt to preserve not only our dignity, but

also our weakening grasp of reality.

Such matters were not helped by the idiosyncrasies of the adaptation of Kenneth Grahame's novel: the whole thing looked in danger of boiling over (and taking the audience with it) when a rabid colony of tartan-clad weasels swarmed onto stage and, heavily bathed in a deep red wash, launched into the Madness classic 'Welcome to the House of Fun'. Few amongst the audience had guessed that they would be seeing a contemporary reworking of the original, highlighting themes in Grahame's book that we had all somehow missed. The Woodlands Theatre Company at the helm of this production are to be commended for keeping their heads when all about were losing theirs. Whilst the audience was coming apart at the seams under the strain of onslaught after onslaught of rain, nothing God could throw at the cast was going to prevent them from seeing it through to the

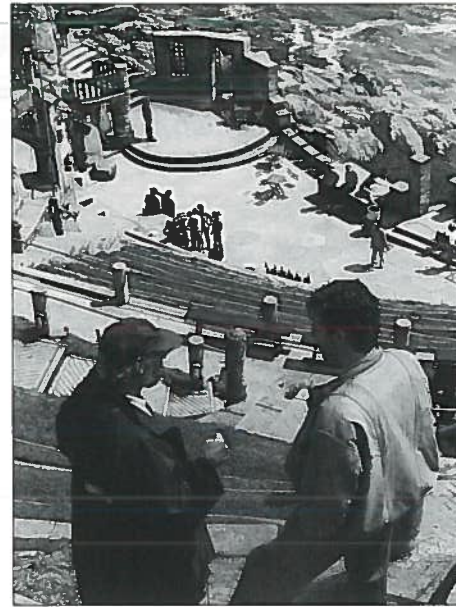




Allen & Heath's GL2000 perched above The Minack (not its usual resting place!).



One of the Bose speakers rigged for action. All the speaker and lighting cable runs are armoured and all equipment is RCD'd.



Phil Jackson (left) and Dave King of Allen & Heath discuss the technicals.

"As the theatre has no ceiling and the nearest side wall is somewhere in New York state, there is a no natural reverberation, which also has to be compensated for . . ."

bitter end. The audience was thus dutifully obliged to see it through with them.

Despite its many eccentricities, and the unique conditions of the setting, this particular staging did throw up some unexpected pleasures. Quite apart from the joy of watching the cast struggle manfully against the elements, there were the added impromptu performances of a chorus of plastic bags as they pirouetted skywards once a litany of sausage rolls and sandwiches had been released from cover, bettered only by that of a courageous red umbrella which clattered across stage mid-performance (destined either for glory or the sea), and in so doing stole the show.

This was not theatre for the faint-hearted and most of the audience had sensibly made a dash for it during the interval, hastily brought forward as yet another rank of rain marched inland. Still, there was consolation near to hand in a glass of red wine and a limp looking sausage and pickled onion two-piece, clinging grimly to a cocktail stick. Seizing its opportunity as the stage emptied, the wind hurtled round the arena for an encore, and the cocktail stick, complete with contents, was whipped off into the night. Presumably, it found a new home with the red umbrella at the bottom of the sea.

For those too numb or too drunk to move (I'm not sure which category we fell into), a heavily curtailed second-half was delivered up, which neatly side-stepped some of the main plot developments, and raced to a much-welcome, if somewhat confusing, finale. By the time we came to the curtain-call, the cast, who by now outnumbered the audience, featured characters we'd never actually seen on stage, and we clapped them all the more heartily because of it.

On reflection, that we should have taken our seats on possibly the most cheerless night this summer, for the one and only performance of The Minack season to be rained off, was to be expected. What was not anticipated, was that, far from being a complete wash-out, it provided the best amusement of the year. We laughed all the way to the Anadin.

Returning the next day in brilliant sunshine, it was hard to believe that this had been the arena of so much mayhem the previous evening. The theatre was calm, almost idyllic,

and for the first time, we actually understood what the magic of The Minack was all about. A painted backdrop could never be a match for the beauty of the sheer cliff-face and the sweeping headland beyond.

In keeping with the credo of The Minack, the technical inventory is similarly under-stated, though by no means unsophisticated. Under the guiding hand of Phil Jackson, who has worked for the Minack Trust for the past six years, the technology has been carefully nurtured striking an appropriate balance between necessity and invention. A mixture of mainly Strand lanterns (there are a small number of ADB fixtures) are permanently in residence, amongst them several ancient models, so old, in fact, that even the people at Strand don't recall when they were last manufactured. Given the severity of the conditions in which they've earned their crust, this has to say something about the robustness of these lights.

Five Patt 543s are sited under the VIP box performing the main front-on lighting of the stage, with four Cantata PCs, a Patt 543 and a single Parcan on a frame above the mini dressing room, whilst there is a further Patt 543 to the east of stage supplemented by two Cantata PCs, one on the projecting bar by the VIP box and one above the gully seats.

Elsewhere around the theatre are seven Parcans and three Cantata PCs. Visiting theatre companies are free to supplement this basic rig with specials, but, in truth, there is little point in bringing in anything too sophisticated as the elements will almost certainly just grind their moving parts to a halt. In the tiny (and I do mean 'tiny') control room perched above the VIP box, six Strand Act 6 dimmer racks are run through corresponding channels on either the two

preset manual Strand Tempus or the 48-channel LBX memory desk.

Although lighting clearly has a part to play in the productions at The Minack, its value is often underwritten by the fact that so many performances take place (or at least start) in daylight. It is therefore with the audio system that much of the success of a performance depends.

Although the steep rake of the seating and the surrounding outcrops of cliff create their own natural bowl in which to mix the sound around, the acoustics of the venue couldn't be less ideal. Like the Olympics, performances are often wind-assisted and control over the clarity of audio has to be kept on a very tight rein. By coincidence, the Minack is not a million miles away from one of the leading sound control system manufacturers in the UK, and so it was only natural that Phil Jackson should seek the expertise of Penryn-based Allen & Heath. Accessibility may have been a small factor, but his choice of A&H's GL2000, a four group live mixer as the heart of the system is undoubtedly product-led.

Given the tight squeeze in the control room, it was rather surprising to come across not only a GL2000-424, but a 16-channel GL2 (OK, so it was vertically rack-mounted) and a GR1 three zone mixer. These three are connected by Sys-Link, the company's proprietary buss interconnect system, which effectively allows The Minack to provide more audio inputs. In opting for this set-up, Phil Jackson has wisely chosen a system that will serve the theatre well in the years to come. All the Allen & Heath desks offer dual functionality and are expandable, as demonstrated by the Sys-Link option. What also proved to be a motivating factor was the GL2000's line up of features which include six auxiliary sends, two stereo effects returns with EQ, two stereo input channels and four band equalisation.

In effect, what The Minack has is three audio mixers feeding the 12 audience speakers, as well as the cue speakers backstage. Three different delay settings are provided for discrete positions in the 'amphitheatre' which are constantly monitored during performances as the wind changes direction and the environmental characteristics lurch from one

extreme to the other. As the theatre has no ceiling and the nearest side wall is somewhere in New York state, there is a no natural reverberation, which also has to be compensated for by the sound system.

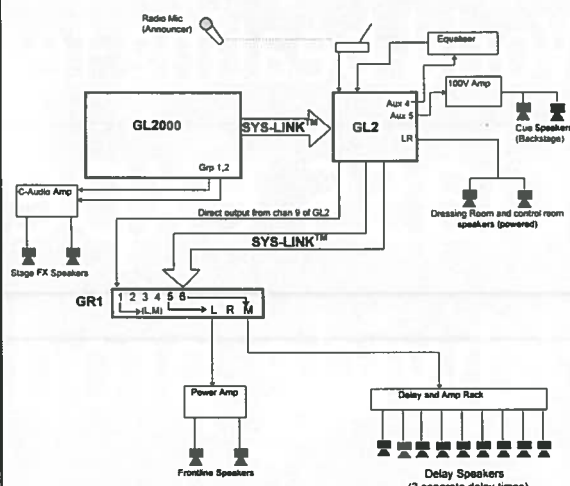
Alongside the Allen & Heath trio is a rack of C-Audio amplification, together with a Sony DTC60 DAT machine, Yamaha twin deck stereo cassette and Denon CD player. A radio microphone and radio mic signal amplifier and distribution unit are also available.

The loudspeaker system (which is rigged and de-rigged after every performance) consists entirely of Bose products and features a pair of 802s, located stage left and right, for sound effects, with a further 10 402s and four 101s for sound reinforcement dotted around the terraces (when we actually saw them, they were drying out in the control room). Remarkably, there are no monitor wedges providing feedback for the cast who must literally project to the Gods and pray that the message is getting through.

Thanks to five phased Coherent cardioid microphones placed in the alcoves front of stage, it certainly does, and despite the poor conditions of the previous evening, there was not a hiccup, hiss or howlround to be heard all night. In fact, the sound, by dint of the sound levels being held as low as possible, was remarkably clear, and sharing the soggy sleeping bag with the genial Allen & Heath team of Dave King, Bryan Waters

The Minack Theatre
Porthcurno, Cornwall

Audio System Specification



Configuration Notes:

- The GR1 has Phantom Power disabled on every input.
- The connection for the announcers mic from the GL2 to the GR1 uses the GR1 mic input with pad and a ducking depth of 18dB on the outputs.
- The connection from the GL2 to the GR1 takes Groups 1 and 2 from the GL2 and connects them to input channels 5 and 6 respectively on the GR1.
- Output level controls on the GR1 are set to max and -10dBv operating level.

and David Kirk, it was tempting to believe that they had engineered the conditions to prove what the system could cope with.

For Allen & Heath, the endorsement of The Minack is just part of a growing trend in favour of their products. In the last year, sales have

leapt 44% and the growth in exports now accounts for 92% of turnover. The company has not only picked up a coveted Queens Award for Export, but has also expanded both its factory and workforce. And their presence in the area is set to receive a further boost when Harman International Industries, of which A&H is a division, open their £3million factory in nearby Redruth for the manufacture of speaker systems. No doubt, The Minack may well be gently pressed to consider further upgrades to the sound system.

Phil Jackson will, however, choose his own timing. Whilst there continues to be a steady programme of ongoing improvement, there is, rightly, a determination that The Minack should not stray too far from its roots. Nearby, there are lessons to be learned: Land's End, once a beautiful tourist spot, is now all but a theme park, and visitors have to pay for the privilege of standing on England's westernmost point.

Commercial temptations will almost certainly come The Minack's way. Its profile has risen dramatically in the last two to three years (it recently provided the backdrop for an episode of Wycliffe) and performances are often sold out

within hours of going on sale. It would be easy to take advantage of this, but fortunately The Minack Trust and the dedicated technical and administration team on site are committed to honouring the vision of Rowena Cade.

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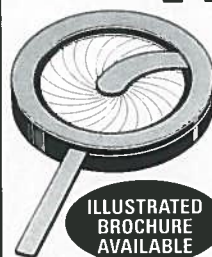
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WEEKEND HIGHLIGHTS

Steve Moles looks at the lighting designs behind two very popular weekend television shows - TFI Friday and Saturday Live

TFI FRIDAY

'Frantic' is probably the best way to characterise this show, in which a manic and compelling host drives the production along like some demented coachman from an old Dracula movie. Conventions are frequently broken: decisions are made not on the basis of what's practical, but on how to distance the show from the run of the mill, and that usually involves doing something bloody awkward. Unconventionality is a hard task master, but the proof is in the pudding. TFI Friday is yet another successful vehicle for the mercurially talented Chris Evans, and is, in its own right, a remarkably popular show.

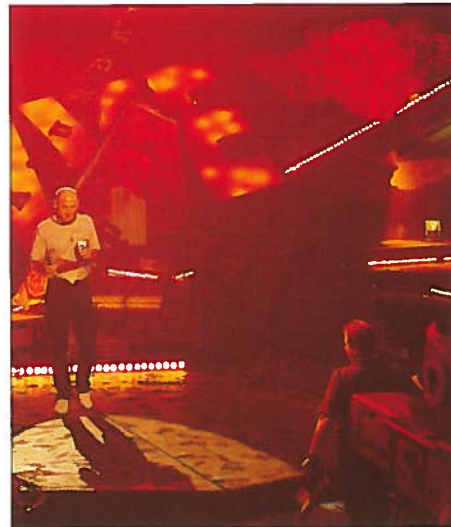
This success stems from its universal appeal. It is a popular culture show, but that does not mean a pop show just for teenagers. Part of Chris Evans' talent is to blend just the right mix of cultural interest to make the content traverse most age groups, up to and possibly including the odd senior citizen. The format of the show is simple enough: a main studio from where a live audience is treated to performances from a range of bands, intercut by oddball stunts from the man himself, but mainly bridged by apparently informal chats with celebrities of all dimensions. For example, on the show I attended, Scotland footballer Allie McCoist rubbed shoulders with television chef Keith Floyd and Britain's prettiest WPC!

The engaging of the live audience fully into the proceedings is now a tried and tested formula, married to an unswerving aim at 'interests of the moment'. It's not all talent though - as Keith Floyd said to Chris Evans: "You are a consummate professional," and his presence does loom large over the whole production. As a visual medium, it is the lighting and creative use of the camera that determines the show's flavour. The lighting design is by Alex Gurdon, but through force of work the role of lighting director has been passed on, most recently to Martin Kissner, who has been sub-contracted in from the BBC.

"The design still very much belongs to Alex," Kissner was quick to point out. Although he (and also Robin Thorburn, the second draftee to the LD role) has been able to effect small alterations, the rig is largely unchanged. The main studio at Riverside, where the bands perform, has a central stage divided into three playing areas, each separated from the others by large suspended set pieces that resemble fractured parts of concrete shuttering. A small truss grid (10ft x 10ft) hangs just off-centre and enables a concentrated cluster of VL6s to be used as backlight across all three platforms. The rest of the roof space is dotted with VL6s and the occasional profile spot, with Minuettes hooked in here and there to wash out the inevitable shadows cast by such an angular set. The perimeter of the stage is ringed from above by several six-lamp bars of Par 64s, used solely to wash the live audience, whilst on the floor are a host of four and single-cell 1kW cyc lights to up-wash the set pieces.



For the latest series of TFI (above), greater emphasis has been placed on a rich, almost garish, combination of colours, whilst for Saturday Live (below), a more subtle approach has been taken.



The surprise is how modest the lighting system actually is - just 30 VL6s, 72 Pars, eight Mole lights and a floating number of cyc lights. The interview room (a wacky combination of office and bar) is also sparsely lit, with a mere 14 ARRI 300W Fresnels and a clutch of MR16s all clinging nervously to an extremely low ceiling. Entec provide the entire lighting system (with subs from VL, obviously) even down to the birdies, ARRIs and the odd redhead here and there.

Despite the system staying in and being rigged for the duration of the series, there are six crew members for the taping of each show, two to operate a pair of Pani HMI spots slung beneath the roof, one to run a Sil 15 as a followspot on each band's lead singer, two board operators, and one to rove during change-overs. Richard Hutton runs the conventional equipment using two Celco

desks, a 30-channel and a 60-channel. It's a happy compromise, forced by considerations of space in the studio mix position, that in turn enables Hutton to split the system control-wise, running the office/bar from the 30-way, whilst reserving the 60 for the three band stages. Andy Watson operated the Artisan console, but like Martin Kissner is one of several operators who have come in to run the show.

The constants are few at TFI Friday, Richard Hutton being one of them, and not surprisingly much depends upon him: "I usually get a tape of what the bands are going to play on Wednesday night, and both myself and the VL operator (for this series Andy Watson has shared honours with Sparky and Oz) will listen to it and work on ideas that night. A production meeting Thursday morning sees us deciding on colours and general looks. The looks rely a lot on the VL operator - they know best what they can do with the lamps - and between us we have used a fair number of colours you would not usually see on TV. For example, Martin [Kissner] was looking for some new backwash on the set for the Manic Street Preachers - three 8-Lites immediately behind the band gelled in 124 might seem a bit garish - but in the event it worked very well."

Colours and colour temperature are determining factors here, where the on-screen look is paramount. The small office and bar area is balanced for tungsten and works well except for one major headache, a window behind Chris Evans' desk. The first series was shot in winter and it was dark by the time shooting took place, but for the second series, each week the outside light is getting brighter and brighter. The show I attended was on Midsummer's Day

and the windows were coated by a 0.9 ND filter plus a 0.6 with an orange added. This was to no avail, as Chris Evans insists on having the window open, forcing the steady cam' operator into some unusual contortions to avoid flare.

For the main studio, Kissner balances for HMI: "We line up the cameras off one of the Pani followspots. It's a similar light to that from a VL6 and it means that the colours we actually see in the studio are what we see on screen - well, as near as dammit."

The studio is the more controlled environment, its most noticeable advantage being the ability to use darkness to contrast against the rich colours used. The set has been repainted for this series - originally brown, it is now pale grey. Whereas the brown could be lost into darkness, the new grey is too pale to avoid and thus Kissner gets the Vari*Lites to work much harder bringing in light on the set, especially the rolling gobo look. Thus, despite using the same set for two series, the look for each is markedly different. For this series, the result is a combination of garish colours, made darker by the HMI balancing which also produces an artificial orange tinge to skin tones. As a complete composition, the show is something of a cartoon: the links tend to be biff, baff, boff - fast and snappy, the lighting is all bold coloration, and the leading man is straight out of a modern comic strip.

SATURDAY LIVE

On preliminary examination, Saturday Live bears some comparison to TFI Friday. A frantic show combining popular music, zany links, an oddball presenter and varied guest appearances. But the production values and the way control is exerted are completely different. The location is London Weekend Television on the South Bank, next to the National. The studio is a purpose-built part of the television centre and although not much bigger than the home of TFI, is certainly much higher and better equipped.

For lighting, a full grid with accessible dimmer outlets all over the roof and at low level around the walls, makes for a simple rig, the downside being that Studio One is in constant use and thus the rig is pulled in and out each week. Where Entec were sole suppliers for TFI and thus fielded a crew of six each week, Light & Sound Design, who service this show, supply just two technicians, with the board operators coming from production, and spot operators



The set for Saturday Live comprises fractured pieces broken up by metal gratings to allow light to intrude through.

and electricians being available in-house. The set is designed by Christopher George, who was also responsible for the TFI set.

There are five performance areas, in this instance spread around the studio floor, with all either face on or asance to the seated studio audience. This convention seems more for the convenience of cameras working in an arc from the centre of the studio floor, than out of any consideration for the live audience, and this is borne out by the fact that like TFI, a crowd of some 250 is actively part of the show down on the studio floor. This set too comprises fractured pieces of what appear to be concrete (in truth, a quick look next door at the National seems to be the inspiration), but the texture here is more pronounced: a rough finish resembling the wooden imprint of construction shuttering.

The platforms and suspended set pieces are almost all broken up by metal gratings to allow light from above, below and behind to pass through. The set also differs in that lighting is allowed to intrude physically, with large sections of pre-rig truss hung around the bigger set pieces and visually providing the dividing lines between the different playing areas. There are also abstract cloud-like structures that fill voids in the roof, so that up shots don't look too industrial.

The lighting design is once again by Alex Gurdon (hence his absence from TFI Friday), and his touch is immediately obvious. It's not so much the use of tools, indeed the lighting specification differs greatly, especially on the automated side, but in the placings. Alex uses the whole space available and positions lamps to work two or perhaps three locations. LSD are supplying a fair amount of kit, but mainly due to the summer glut of work, no Icons. There are 50 single Pars dotted about, 30 four-cell ground rows, 26 six-lamp bars (12 supplied in-house by LWT), 12 Molemag and 34 bars of ACLS

(Phil Rowe controls all conventionals from a Galaxy Nova).

The automated lighting consists of 24 Cyberlights and six Golden Scan HPEs, supplied by Richard Martin and run from a Compulite Animator by Bill Peachment. In an ideal world, Gurdon would have liked a mixture of both moving mirror and automated yoke lamps, but budget and availability did not permit. There are a fair number of 5kW and Pups dotted about the grid for a touch of key and kicker here and there, "but I use these as little as possible," adds Gurdon, "there's lots of up shots by the cameras and the last thing I want to see is a big open white lamp with barndoors."

The Pars and Cyberlights, however, feature frequently in shot, but as beams of light or as circles of colour in a gel frame, they are much more a part of the set than an obviously intrusive 5kW Fresnel. Gurdon also places the Groundrows and the occasional Howie batten very close into the set pieces, casting sharp up light, making beams across the set's surface and highlighting its relief texturing. The major departure for him is in the subtly different demands of this show: "With the band area separate in TFI you can basically do what you want.

"Here, you have to make the lights work harder covering both a band and perhaps a sketch or just a single comedian in the same area. Many of the comedians don't like the audience to be lit when they are performing - for obvious reasons - and although I like to put the scans out in the crowd, I also have to use them to light the set and to put something visual in and around a single performer."

Gurdon was concerned about the restrictions of moving mirror lamps when he first drew up the design, especially the limited tilt, but with the full grid facilities of the studio, he has been able to alleviate this by hanging eight of the Cyberlights from mono-poles, thus making them easy to reposition for the odd awkward angle. The fact that the system loads in and out each week also has a bonus: Gurdon frequently changes the truss configuration (a particularly helpful feature when expanding one performance area to accommodate Ray Charles and an 18-piece band) and likes to change the colours in the Pars, especially those devoted to audience lighting.

Both shows have an engaging style that can easily be analysed and copied, but it's important to note that one thing sets the two apart. Saturday Live is formulaic, not that this is necessarily a bad thing, just fundamentally different. One show is driven by the ambitious personality of an extremely talented individual, the other by experience and the ability to recognise, analyse and imitate something that is successful.



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EQUIPMENT NEWS

ETC Europeanisation

Following on from the announcement earlier this year covering ETC's investment programme across a range of products designed specifically for the European market, updated European lighting fixtures are now available from stock.

Several small changes bring the Source Four ellipsoidal into line with European practice. The most obvious addition to the Source Four, a 575W lantern with an output often exceeding that of many 2kW units, is an integral lens guard. Other changes include an earth strap in the lamp holder which earths the body of the Source Four and the upgrading of the cabling in line with European norms. Both the lens tube and the body of the Source Four now have dual 'fail safe' fixings and the fixture itself now also sports a specific secondary suspension point.

For further information contact ETC in London, telephone 0181-896 1000.

Abstract Laser 5



Following an international development programme, the new Laser 5 from Abstract is available in a 5mW red laser diode version. The Laser 5 can either be operated through its own internal memory of 16 pre-programs with music trigger or can be operated manually using the panel of controls.

For further information contact Abstract Design in Leicester, telephone 0116-278 8078.

MasterMind96

Geni Electronics has introduced the MasterMind96, a modular, microprocessor-driven controller featuring real-time editing and manual control of all functions, with real-time manual override of all 16 projectors and all functions. MasterMind96's programming allows the operator to latch in up to 300 scenes in one of six show memories, play them in any sequence, edit on the fly, and chase them for extended gigs. With 56 pan/tilt motion modules featuring sweeps, loops, kicks and spirals, the operator selects a projector and motion function and uses the joystick to place that motion wherever it is required.

For further information contact Geni in Taiwan, telephone (02) 722 2910.

Total Control

Total Fabrications have launched the new Total Control Panel. This addition to their range of motor control products features new individual phase reversal, output motor rated MCBs and emergency stop button. The unit is designed to enable control of any three-phase hoist which contains an internally-powered reversing contactor and the modular construction identifies at a glance the input and output panels.

A low voltage handset puts control for all channels at your fingertips and includes a 'go' switch, allowing execution of any pre-set combination. An added feature of the handset is an on/off switch, which will kill three-phase output power to the motor if switched off.

For details contact Total Fabrications in Birmingham, telephone 0121-772 5234.

LT Expands Range

Lighting Technology has extended and developed its range of flicker candles introducing three discreet ranges - Classic, Professional and Random. The Classic range comprises the original flicker candles first used on Phantom of the Opera. It features a standard unit with a flickering flame top, whilst the Professional range, previously known as the Phantom or Mini Phantom, has been introduced as an upgraded version of the Classic. It has a small lamp permanently on next to the regular flickering flame to make the top of the candle glow even more realistically. The Random is differentiated by its advanced electronic circuit board which enables an irregular flickering flame top and the range can also be incorporated in to either the Classic or Professional ranges.

For details contact Lighting Technology Group in London, telephone 0181-965 6800.

Take Two

Stephen Court and Alan Parsons' Sound Check 2 Compact Disc plus Audio Response Analyser is now available. The original Sound Check has become an international reference and the new version contains all the original tracks for audio assessment, with the addition of operatic vocal and music tracks, creating 100 in all. The double CD case has a built-in mic and sound level meter calibrated from -15dB to +12dB to form an instant system response analysis.

For more information contact Sound Check in London, telephone 0181-450 0363.

Kelsey Power

The most common problems with power distribution units are that there may not be enough AC outlet sockets, the Inlet cable may have an unusual connector, the captive AC cable may be too short and the unit may be incompatible with others. Mindful of all these restrictions, Kelsey have designed new units to overcome most of these disadvantages.

The PD Series of AC power distribution panels offers either BS4343 16 or 32amp inlet and outlet connectors to allow linking to other units, an AC trip to allow fast restoration of power in the event of overload with optional retrofit RCBO facility, enough outlets to power most racks and an AC status indication system to monitor input AC.

For further details contact Kelsey in London, telephone 0181-964 8000.

Stinger Upgrade



Owl Video Systems has launched the latest version of its Stinger videowall controller. The upgraded model provides users with additional menus whilst maintaining its eight switched outputs and show control inputs and also provides a menu which allows for live control of videowalls and given a new interface for Pioneer laser disk players. The Stinger also features an 'autostart' facility so that when the Stinger is powered up, a show can automatically begin. A facility is provided to allow a show to run continuously. New input control options have also been included to allow for interfacing to infra-red presence detectors and pressure mats for interactive applications.

For details contact Owl Video Systems Limited in Uckfield, telephone (01825) 766123.

Rosco Calcolor

CalColor is Rosco's new range of colour filters specifically for film and video professionals. Each colour comes in four densities which correspond to the traditional photographic values of half, one, two, and three-stop calibrations. Rosco's CalColor filters adjust the transmission of the blue, green and red components of the spectrum at the individual light source, enabling the cinematographer to exercise control over the image's colouration.

Cal Color is manufactured on a heat-resistant base with a patented deep-dye technology and the Cal Color supersize swatchbook offers 6" x 3.25" sample sheets.

For further details contact Rosco in London, telephone 0181-659 2300.

A D M I R A L

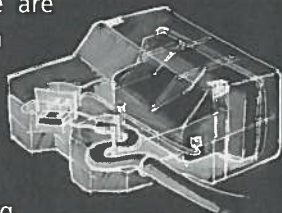
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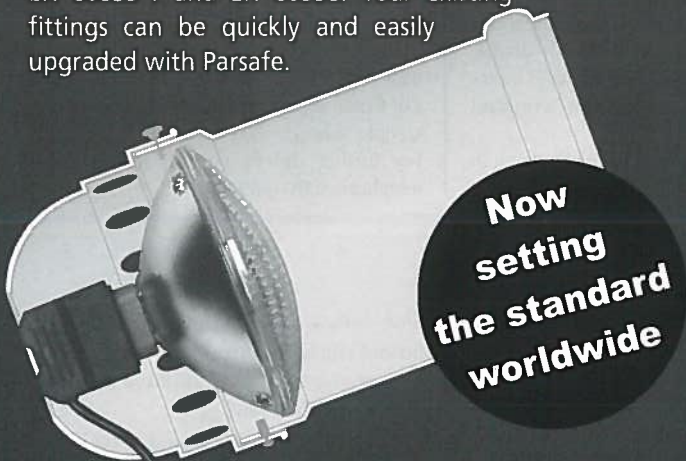


The unification of Europe and resulting harmonisation of safety regulations throughout the community has affected the use of the PAR light.

Recent research has found that none of the contemporary par fittings in use are safe, which is resulting in them being declared unfit for use. Par lights have traditionally been adjusted by hand-holding the ceramic, running the risk of touching the live internal cabling.



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SECOND TAKE

John Watt's View from Beside the Camera

Beware the cunning wiles of magazine editors who, over a large lunch, suggest that an occasional article for their prestigious magazine may be acceptable. Ego helps the pen onto the blank sheet of paper first time around with never a thought of where this might lead - especially if you set yourself an autobiographical style. It's one thing to soliloquise over potentially award-winning prestigious productions with a few quotes from the stars for added authenticity, but what happens when the inevitable lull occurs? Yes, I know there is a whole team continuously working under the pseudonym of Brian Pearce, but the rest of us have to scratch about and pick up what we can.

So it's August as I write and along with the yellowing grass, P-registered cars and the Olympics (now mercifully off the box), the lull has arrived. It's true that the last quarter of 1996 is showing signs of life, but for the moment it's back to the begging letters and research of the cottage industry.

As reported in the August magazine, late July was cheered up immensely with an invitation by Nick Shapley at ARRI to sample their latest products in Munich and nearby Stephanskirchen. It gave me the opportunity to work over an old theory which I have dished out at a number of talks over the years, roughly along these lines: when I came into lighting some 30+ years ago, levels of illumination were around 2000 lux which resulted in a stop of around F4 using four and a half inch image orthicon camera tubes. These, of course, produced monochrome pictures and you were wise to assume about 10 discernible shades of grey between black and white.

Now, three decades later, with a whole host of improvements in electronics through transistors and into the chip, many generations of pick-up tubes and so on and so forth, we seem to light at much the same level. OK, maybe a stop better for drama and talking heads, but for light entertainment and game shows, levels are still high - so much for progress.

Maybe ARRI had this partly in mind when they decided to introduce a 24kW tungsten Fresnel! No, not a misprint, this lamp really is 24kW - a monster by any standard. All that I need is an excuse to hire the thing and ask the sparks to plug it into the nearest 24k dimmer outlet! I know this is not the idea, but an enormous amount of bounce light can be delivered from such a source and who knows, maybe this is one function yet to be explored by innovative lighting designers.

In case you still feel in need of something with real firepower, they now have an 18k HMI which I saw demonstrated over around a third of a mile. Even at a full flood of 60 degrees, we are talking well over 500ft candles at 100ft. As a matter of policy, I never try to compete with God, but on a grey day I could make my half acre look like the South of France. At night you had better warn air traffic before lighting the clouds or giving a lift to the better part of Milton Keynes (is there a better part to Milton Keynes?). Logic may say cameras are more sensitive than ever (film stock ditto) and

therefore there is less need for powerful lights, but most manufacturers only respond to market forces. As it is I have a weakness for using plenty of lumens given half a chance, and it begins to look as though I may do a four Musto light job before the year is out. So watch this space as tales of a lighting director setting lights by bike may yet appear.

But as I was saying, currently it's the closed season for lighting directors in Lincolnshire (OK, north of Watford) and we're left alone to breed before the glorious 12th comes around. This is the date when Mike Lingard goes on holiday in the Maldives and leaves a few shows uncovered.

So for now it's DIY with a vengeance, particularly on the domestic lighting which wouldn't be tolerated by your average under manager at Sainsburys, but we've lived with it for years. Dimmers abound at home, though hardly up to TV spec - they hum away merrily and cause interesting buzzes to superimpose themselves on the low-fi system adding a new dimension to Art Tatum, Brubeck and Bix. Yes, we have the technology, but wives and visitors can't do a decent fade to save their lives - no feel you see. Up it comes like the FUF (full up finish) we used to do at the end of the top of the bills act (ah, Billy Daniels - what a finish!) and all we needed was a few more lux to see which was Stilton and which was Brie.

So the DIY requirements find me at the builders merchants, a society into which the freelancer blends perfectly with threadbare jeans, unkempt hair and tattoo. Actually, I don't have a tattoo, but Grundys rang on the mobile when I was in the chip shop last week and I had to do a ground plan on my arm with a felt tip pen which transpired to be a waterproof one. This is called a production meeting: boardrooms overlooking the river, coffee and three sorts of biscuits for 20 people are from another era. Any road up, as they say in Yorkshire, at the builders merchants I suddenly realised the passing of salt-glazed sewer pipes.



John Watt waxing lyrical during the recent ARRI visit to Munich (see news this month). To his left is Joe Dunton of the BSC.

They're just not there any more, like Force cereal or plain chocolate Golf biscuits.

'What's all this to do with lighting? He's flipped at last!' No he hasn't. ETC and Strand would rather you didn't know, but we do-it-yourselfers used to make our own dimmers out of these sewer pipes. Just concrete a brass plate in the bottom, turn it on end, fill it with water, hang another plate at the top on a windlass arrangement so that it can go up and down in the water, connect the load in series across the plates and wear wellies if you have no sense of adventure.

Now for the magic: With, let's say 5kW across your plates, which are at either end of the pipe, add salt (to lower the resistance of the water) until the lamp glows! You now have a dimmer perfectly matched to the load, lower the top plate and up come the lights, perfect. If you overload too much there is a sophisticated warning system, the water boils. I wouldn't trust a polythene pipe for this job - too risky by half. Whether my wife is prepared for any more sewer pipes in the lounge I'm not sure - she has only just got used to the top of the monopoles in the bedroom, but I digress, a rare fault with me.

By the time you read this, at least three pilots will be behind me (do this one cheap, Watty there may be a series to follow), some regular talking head shows where we revert to photograph, all backlights, eye lights and proper keys, quite refreshing and who knows, the phone could ring with the big one. Producers don't read this do they?

Meanwhile, if you see me in the electrics bit at B&Q, don't blow my cover, I'm only stocking up on fuses and PVC tape.

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AGAPE IN THE STALLS



Michael Flatley's *Lord of the Dance* at The Point, Dublin.

photo: Jonathan Park

How do you stage a novel like *War and Peace*, which takes 1600 pages to cross 30 years of family turmoil with Napoleon's Russian campaigns? The quick answer would be don't. A second thought would be to give it the flavour of one of those 1812 overture concerts, with fireworks, cannon effects and a few hundred cans of dry ice. Theatre company Shared Experience have taken a different option in their magnificent staging of Helen Edmundson's version at the Cottesloe. They leave most of the difficult work to the audience's imagination which is not to say that Bunny Christie's designs aren't a great help. The show opens in the present time, in a picture gallery, and as we are drawn back a couple of centuries into the past, the empty picture frames take on a multitude of roles, as doors, window, mirrors - framing the actions of the relatively small cast as they double furiously. Unlikely associations abound - yet you completely accept the top of a grand piano as Napoleon's headquarters in the middle of a battle. The 1812 cannons are used only once, and they lift you out of your seat.

The real star of this ensemble show is lighting designer Chris Davey. With a relatively small rig he was able to soak the wide-open Cottesloe stage in the host of site-specific atmospheres the story demands - from ballrooms to battlefields, salons to death beds. He was also able to cope with the large number of practical candles that kept arriving to disturb his lighting levels.

I don't know how many light curtains, colour changers or turn-on-its-own-axis-and-give-you-change-from-£10k lanterns Davey used to create this near perfect lighting plot. As I recall, most of his light was white, and a whole host of specials were really standard positions cleverly used - echoing the inventiveness of the minimal scenery. I raise this matter of simplicity because the West End has just been beaten about the ears (and eyes) by a series of shows which make you wonder whether the famous prediction (sprayed, I believe, on a wall at Knebworth) that 'rock will eat itself' is about to come true. What's rock got to do with *Martin*

Guerre? Not a lot, you'd hope, but on my return visit (see last issue) I was disappointed to find the design style, particularly David Hersey's lighting, taking ever easier rock-oriented options as the show went on. It opens beautifully, in a gauzy woodland setting that looks like a Corot painting, and Hersey's dawn to dusk lighting is sheer pleasure. After that we get heavy handling of Nick Ormerod's balsa-kit towers against a woefully under-used cyclorama, a set-piece fire, and an increasing number of scenes with no great visual content other than characters hanging around in smoky spots or light curtains.

At least *Voyeurz*, the dildo-toting, but rather limp sex show at the Whitehall, is meant to be rock and mounted (if that's a safe word) accordingly. Terry Jardine's sound system shakes the seats and rattles the collective cranium in the loud bits, but all the show's ghastly lyrics are (alas) completely audible. Ian Peacock's lighting is very expensive indeed, probably the biggest part of the budget, unless the latex rubber costumes come at Armani prices rather than Ann Summers ones. Technically, the show sets high and completely appropriate standards - I was agape. Only the content lets it down.

Over at the Coliseum you can see similar scenes of depravity in a similar technical setting. Glistening young men in the tightest of leather trousers and young women in figure hugging St Michael underwear dispose themselves, at first behind the obligatory but unnecessary gauze, later in the full (and terrific) glare of Patrick Woodroffe's lighting on a genuine Jonathan Park set designed cleverly to carry yet more Woodroffe lighting. But wait a minute, isn't this supposed to be *Lord of the Dance*, a celebration of Irish dancing, that most chaste of pursuits? Rock may not have eaten itself, but here it is chomping away on the scrag end of *Riverdance*, for sure. The first night audience, full of culture gurus such as Peter Stringfellow, Lord Lindley, Michael Winner and that girl from Eastenders/Neighbours/Brookside (or was it the deli counter at Waitrose?) lapped it up - and so did I. My foot

hardly stopped tapping all evening, and the two electric fiddlers (who should have been in *Voyeurz*) blew my mind, as well as several other bits. Michael Flatley well deserved the ecstatic curtain calls for his huge energy and skill. Yet I came away somewhat shaken by the incredible vulgarity of it all.

I guess what I'm complaining about is a new-fangled vulgarity of performance, which wears its budget on its sleeve and dares you to dust off a few noughts. The millions that went into *Starlight Express* or *Miss Saigon* were well spent. I'm less convinced by the empty ostentation of *Martin Guerre* or *Lord Of The Dance*.

As if to remind us what it was once all about, along comes *Ferry Cross the Mersey*. You could dismiss this as yet another tiresomely tacky compilation show, but I think you'd be missing several points if you did. First of all, this life story of Gerry Marsden, second only to the Beatles in 1963, has actually got Gerry in it, looking more like John Prescott now than the cheeky scouser who first sang 'How Do You Do What You Do To Me?' but still in fine voice. (Though not so fine in the memory department: even wearing a hearing-aid through which, presumably, he got his prompts, he still managed to forget the climactic lines of 'Don't Let The Sun Catch You Crying'.) More important, I reckon that the tacky cardboard sets, laughable sixties costumes and minimally tweaked sound are intentional. Director Carole Todd and designer Nigel Hook are reminding us just what it was like in the first wave of Brit pop - technically and musically unsophisticated, but great great fun.

You can sneer at all those two-minute, death-of-the-78 singles, but it's hard to resist their cumulative effect in a mocked up Cavern Club or Ready Steady Go studio. You can turn up your nose at those followers of Ringo Starr beating hell out of a mile-high drum kit, but the raw sound of unamplified drums is mighty refreshing after a diet of beat machines and head-bashing electronic rhythms.

Joe Atkins' lighting enters marvellously into the spirit of things. Three followspots are a relative luxury in a sparse rig that clings to the corners of the pros for dear life and douses the stage in good old primaries. Cue the reds, on, off; cue the greens - go. It's only in the finale that he lets us into his secret. These old lanterns can colour change, rotate on their axes and do all the jolly tricks we now take so much for granted. In spite of watching it in the company of an audience who appeared to have died some time earlier in the evening, I had more fun down this memory lane, than in some of the rock halls of fame of previous weeks.

Even further in retreat from L+SI's bread and butter, I've just seen my first show of this year's Edinburgh Festival, a wondrous twilit journey around the Botanical Garden that gets its principal lighting from four flaming torches and a couple of miners' lamps. And to think I was only watching Toby Gough's magical *Plant Hunter* because a single rivet broke on Robert Lepage's all-singing, all-dancing techno set for *Elsinore*. I wouldn't have missed *Plant Hunter* for the world - it's light, Jim, but not as we know it. Oh dear, beam me up, someone.

Ian Herbert

Ian Herbert is the editor and publisher of the critical journal, *Theatre Record*.

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QUESTION OF STANDARDS

When PLASA presents a seminar on standards for professional dimmers at the forthcoming PLASA Show, a lively discussion is anticipated. John Woodgate offers an overview

You will not be surprised to learn that the need for a seminar arises from those favourite pieces of EU regulation, the Low Voltage and EMC Directives. In the nature of things, the politicians involved concentrate on the fashionable and/or economically vital industry sectors, such as computers and electric power generation. It is these same sectors that have had, and still largely enjoy, majority or even exclusive representation on the technical committees that decide what requirements should be imposed on equipment in order to satisfy the Directives. The result, of course, is that smaller industry sectors find themselves in the clutches of what often turn out to be Procrustean requirements. These are set in standards that do not take into account what is economically or even physically possible, let alone more subjective issues, such as what is acceptable in the market-place.

PRODUCT SAFETY AND EMC DO MATTER

Clearly, the Directives will not go away, even if they were ill-founded, which, of course, they are not. Products *should* be safe: users should *not* be exposed to risk of fire or electric shock. The case for EMC control is not so self-evident, but as more electronic equipment comes into use, the potential for mutual degradation increases exponentially. This is not a new problem; the introduction of 'reaction' (variable r.f. positive feedback) in the early days of radio broadcasting caused widespread interference from oscillating receivers.

DIMMERS ARE (SOMEWHAT) DIFFERENT

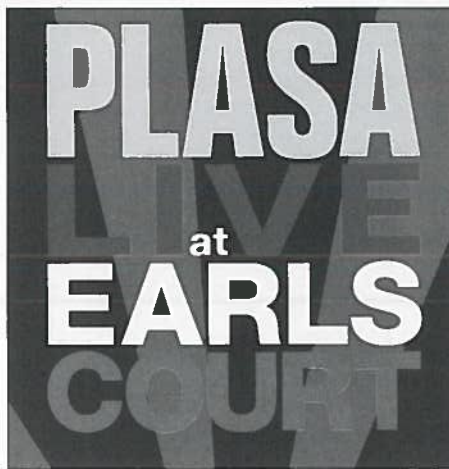
The major EMC problems for dimmers concern the interaction with their mains supplies. For other EMC phenomena, such as r.f. emissions and ESD immunity, dimmers are little different from any other product, but they do things to the mains supply which are rather special, or at least, phase-control dimmers do. There is also a problem with the associated lamps, and this affects transformers of all kinds and switch-mode power supplies as well.

'QUALITY' OF THE ELECTRICITY SUPPLY

The reasons why these effects on the mains supply are important are that the politicians have decided that electric power is a consumer product, and should be subject to the same sort of requirements for 'guaranteed quality' as is expected of other consumer products. At the technical level, too, this makes a lot of sense. Your power supply may fail to deliver the correct voltage because the peaks of the a.c. waveform have been clipped off by too many switch-mode power supplies. You could lose valuable data if the power goes off because a capacitor at the switchyard has exploded due to harmonic current heating. And there is nothing more annoying than flickering lighting, caused by several pieces of equipment with high inrush currents being switched on in succession.

SINE WAVE TO TRAPEZOID

There was a time, more than 20 years ago, when the waveform of the mains supply voltage at most sites was a sine wave, with no visible



distortion. This is far from true now: millions of rectifiers (in both switch-mode and 'linear' power supplies) take narrow pulses of current which pull down the peaks of the voltage waveform. Since the peak input voltage determines the voltage which appears across the reservoir capacitor in the power supply, peak clipping greatly reduces the ability of the supply to cope with, for example, the low r.m.s. voltage found at the end of a long rural overhead distribution cable. Other harmonic-generating loads tend to straighten the flanks of the sine waves, so that the waveform tends to become trapezoidal. This can cause all manner of problems with some equipment, although electronic equipment is fairly tolerant.

PHANTOM STANDARDS

The requirements for limitation of harmonic current emissions and voltage changes caused by load switching are, *in theory*, given in four standards, which are not yet in force but are due to come into effect on 1 June 1998. Two documents deal with harmonics and two with voltage changes: of these, EN 61000-3-2 and EN61000-3-3 have been published, while EN61000-3-5 is planned to be a standard derived from part of IEC Report 1000-3-5 and neither EN61000-3-4 or the underlying IEC Report 1000-3-4 have yet to be published.

These standards were originally prepared in committees where the electricity suppliers were dominant, partly through their 'long pockets' and partly because most industry sectors did not know that the work was being done. Consequently, the early plans, which are only now being implemented, were drawn up with insufficiently broad input, and are unlikely to be acceptable to everyone.

THE EARLY PLANS

It was originally intended that the *standard* IEC1000-3-2 would apply to harmonic current emissions from all equipment drawing less than 16 A from the mains. It would also include a statement that products which could not meet its requirements could, instead be assessed in terms of the *Report* IEC1000-3-4, which would also apply to equipment drawing more than 16 A. Similarly, the *standard* IEC1000-3-3 would apply to voltage changes caused by equipment rated up to 16 A, and allow assessment of

equipment which could not conform in terms of the *Report* IEC1000-3-5, which would also apply to higher current equipment.

These plans fell foul of the diabolically ingenious European Commission lawyers, who decided that IEC Reports could not be used to establish compliance with the EMC Directive, and that because IEC 1000-3-4 and IEC 1000-3-5 will refer to 'greater than 16 A' in their titles, they *cannot* be applied to equipment drawing less than 16 A, *in spite of the statements to that effect in IEC1000-3-2 and IEC1000-3-3!*

PLEASE SIR, MAY I PLUG IN MY DIMMER?

If you want to connect a very large motor or an arc-furnace, say, to the mains supply, you naturally have to ask your friendly neighbourhood electricity supplier for permission. This may require the provision of a suitable supply, which may need quite thick pieces of damp string to connect up. Because of the dominance of the electricity supply experts in the early committees, and because they thought that the amount of equipment involved would be small, no objections were raised to the extension of this 'consent to connect' procedure, *not only to equipment drawing just over 16 A but also to lower power equipment which could not meet the requirements of IEC 1000-3-2 and/or IEC1000-3-3.*

In spite of now realising that the amount of equipment involved could be vast, the electricity supply experts see no grounds for abandoning the 'consent' principle. IEC 1000-3-5 requires the prospective user to *fill in a very detailed two page form (to include a commentary on the EMC design of the equipment)* and send it to the electricity supplier, while the draft IEC 1000-3-4 requires the manufacturer to give the user *arcane technical information which only the electricity supplier is able to understand!*

Now, it is one thing for, say, Mega Industries plc to negotiate with their electricity supplier over the connection of a 500kW arc furnace, but quite another for Jim's Disco or The Fleapit Theatre to try to do likewise for a 12 x 2.5 kW dimmer panel. If these small users are even prepared to buy a piece of equipment accompanied by forms and warning notices about 'consent to connect', they will most likely ignore the form and instructions and 'plead ignorance'. *In any case, it is very doubtful that an arrangement which depends on the end-user fulfilling obligations to a third party is legally valid in allowing the manufacturer to claim compliance with the Directive.*

The concept that EMC standards can interfere so profoundly with the commercial relationship between equipment manufacturer and end-user is unprecedented, and there is a strong feeling that if more Chief Executives and Marketing Directors knew what is seriously intended to be enforced, there would be an unprecedented outcry of protest.

The current proposals are particularly inapplicable in any case where equipment is hired out. Imagine trying to run a hire business where equipment can only be hired to an

end-user who produces a letter from his supplier proving that he has 'consent' to connect the equipment to the supply, at every location where it is intended to be used!

NO FREE-FOR-ALL

At the same time, it is not reasonable to allow everyone to connect any old equipment anywhere on the public electricity network. To preserve supply quality in everyone's interest, some control is essential. The way forward seems to be to replace the emotive word 'consent' by the much more friendly word 'agreement'. In many European countries, it is illegal to deny an electricity supply, so 'consent' is a formality anyway. But the provision of a supply of adequate capacity is NOT a formality, and that is what is of the essence.

A procedure based on 'agreement' is nothing new: it is already in place in Britain. You can buy a 7kW electric shower, which takes, of course, more than 16A, and connect it without filling in any forms, because the manufacturers have concluded a nationwide agreement with the supply industry that this is permissible. What we need is a simple procedure which

- a) is based on 'agreement'
- b) does not require the end-user to have any technical knowledge, and requires him to do as little as possible (ideally, nothing).
- c) where possible, allows the manufacturer to conclude general agreements to connect.

SUPPLY SOURCE IMPEDANCE

Equipment manufacturers and users do not often need to recall that the electricity supply does not have zero source impedance, although even the resistance of the supply wiring ensures that. It turns out that this source impedance is the critical factor in determining the harmonic current and voltage change effects produced by a given piece of equipment as far as the public supply is concerned. That reservation is important, because harmonic currents also affect requirements for the local installation, in particular, the size of neutral conductor in 3-phase installations. It is often necessary to install a neutral conductor which is at least as large as the phase conductors, because of triplen harmonic current summation in the neutral.

It is, however, quite unnecessary to bother the end-user (or even the Sales Department) with supply source impedances. All that is necessary is for the electricity suppliers to agree a classification scheme based on source impedance. A typical home supply might be 'Type 1', with progressively higher type numbers for higher current, lower impedance supplies. The manufacturer could then do all the calculations and assessments required by IEC1000-3-4 and IEC1000-3-5 to determine which supply type number (or higher) with which the equipment conforms to the harmonic current and voltage change requirements. All that would then be necessary is this simple message to the end-user:

'To comply with EMC requirements, this equipment must be connected to an electricity supply of Type 2 or higher. If you are not sure of the Type number of your supply, please contact your supplier'. Eventually, the supply Type could appear on a label close to the electricity meter.

THE 'FOUR RESPONSES' PRINCIPLE

From the point of view of the electricity suppliers, there is actually no difference in effect between an 'agreement' on the above

terms and the apparently dictatorial 'consent' concept. If the end-user finds he has a supply of too low a Type number, or the equipment is a one-off for which the end-user has to conclude the agreement, the supply authority has four ways to respond:

1. 'Your supply is actually suitable for that equipment: go ahead to connect.'
2. 'We need to make an adjustment to accept your equipment, but there will be no charge.'
3. 'We need to upgrade our system and there is a charge involved.'
4. 'Your existing supply is unsuitable. We will have to give you a completely new supply, and there will be a charge.'

This covers all eventualities, preserves the right of the supplier to control supply quality, complies with all legal considerations and, while it may not be welcome, should prove acceptable to manufacturers and end-users.

HARMONIC CURRENT LIMITS

Apart from the critical nature of the procedures embodied in the standards which affect commercial relationships and the obligations of the end-user, there are important technical issues as well.

Notable among these is the matter of harmonic current limits. Dimmers rated below 600 W are not subject to any requirements in EN61000-3-2 (because the manufacturers mounted an extremely effective international campaign, backed by some extremely dubious technical evidence). Provisionally, no limits are given for professional equipment in general rated above 1 kW, and this provisional requirement is now being rescinded in favour of a proposal emanating from the ITE (computer) industry, which, because it is fashionable, gets special consideration from some IEC committees.

This proposal establishes limits which are close to what can be met by phase-control dimmers, but not quite! It will require a very strong representation and powerful arguments to change this crazy situation, and there is not much time to do it in.

INRUSH CURRENTS

IEC1000-3-3 is quite obscurely worded, and it was not until a late stage that it was realised that it puts severe limits on the voltage change caused by the interaction of the inrush current of equipment with the supply source impedance. It was even later that it was realised that this applies even to incandescent lamps (over 500 W) and safety isolating transformers, which had been considered 'EMC benign'.

The relevant BSI committee submitted a proposal to exempt lamps and transformers, but the other countries still have committees dominated by electricity suppliers and rejected the proposal immediately. There will have to be some compromise, because it is clearly very difficult indeed to provide an economic solution for lamps, particularly as any cure would considerably increase the delay between switch-on and full brightness (just like compact fluorescents!).

For transformers and switch-mode power supplies, it may be acceptable to use an NTC thermistor, provided the test conditions do not include 'hot switching'. However, there may be another technical argument which deals with the fact that the amount of inrush current depends on the point on the input sine wave at which the switch is closed. This subject is still under study.

OTHER EMC REQUIREMENTS

We are not allowed to make product-family standards for the effects covered by EN61000-3, but the other requirements for dimmers are currently specified in EN55014 but will soon be specified in a new edition of EN55015, in which certain critical wording about dimmers in EN55014 has been 'forgotten'. The content of EN55014 is determined by the domestic appliances industry, which is not noted for its insight into other branches of technology, while the content of EN55015 is determined by the lamp industry, and the new edition is testimony to the fact that dimmers are not high in their list of important products.

SAFETY STANDARDS

There is much less embroilment and argument in this area, but it is still quite exciting. Unlike luminaires, for which there are quite explicitly titled standards EN60598-1 and EN60598-2-17, there is no safety standard explicitly applying to dimmers, and some strange choices have been made. The most appropriate standard seems to be EN60439-1, at least for the power electrical part, but dimmer packs now contain a lot of electronics, and this EN deals with electronic assemblies only very superficially. This has led to the idea of applying the ITE standard EN60950 to the electronic part, and indeed, if any second standard is to be applied, this seems the most appropriate.

Because the word 'control' appears in its title, it has been suggested that EN61010 should be applied, but an examination of its content (rather than the Scope clause) shows that what is meant is low-power industrial and laboratory process-control equipment, not professional dimmers. EN60065 (the safety standard for consumer and professional audio and video) has also been applied, but this does not deal with the high-power electrical aspects in sufficient depth.

THE CRUNCH QUESTIONS

The Seminar should consider the following:

1. Does the industry support the view that 'consent to connect' is not an acceptable concept and that a procedure based on 'agreement' and supply 'types', absolving the end-user from form-filling and uncertainty, is to be preferred?
2. Is the industry prepared, perhaps on the grounds of the cost of any alternative, to leave the decisions on the content of the general EMC standard for dimmers largely to the lamp manufacturers?
3. Is the industry prepared to tolerate uncertainty over which safety standard(s) applies/apply to dimmers under the Low Voltage Directive?

Standards for Professional Dimmers takes place at 2.25pm on Monday 9th September in the Westminster Room at Earls Court 1.

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Monday 9th September

- 11.15 - 12.15

Designer Talk (ALD)

A number of leading designers discuss particular productions and the methods they employed to achieve dramatic results

- 12.30 - 14.00 (Mechanical Copyright Protection Society)

Sample a Bit of This

This seminar is for anyone involved in, interested in or confused by the subject of sampling. A panel of experts will be on hand

- 14.15 - 16.45

Standards for Professional Dimmers (PLASA)

A lively discussion is anticipated on the current situation covering Professional Dimmers and related standards

Tuesday 10th September

- 11.15 - 11.45

Equity, the ALD and Agents (ALD)

This forum will concentrate on the liaison between all elements of the production, including the artistic members of the cast

- 11.50-12.45

Designer Project

Leading designers will discuss a current project

- 14.15 - 15.10

The Haydon Warren Memorial Lecture (ISCE)

Noise Cancelling Techniques in Speech Communications

Prof P D Wheeler of Salford University outlines methods of reducing intrusive noise for intelligible speech communication

- 15.15-15.55

Digital Audio and Sound Reinforcement

Graham Boswell of Prism Sound in Cambridge examines the growth of digital techniques in sound reinforcement

- 16.00-16.45

Microphones in the Real World

Independent consultant Peter Mapp discusses the use of microphones in a wide range of situations

Wednesday 11th September

- 11.15 - 12.05

Designer Talk/Inappropriate Styles (ALD)

Several leading designers have been invited to offer their views on unconventional approaches to lighting design

- 12.10 - 13.00

Safe Use of Dry Ice in Special Effects

Roger Palmer, manager of Dry Ice, will talk about the properties of the product, hazards, risk minimisation, storage, handling and use

- 14.00 - 15.00

David Wilmore and Theatrical Patents

(Society for Theatre Research)

Following the PLASA launch of 'British Theatrical Patents 1801-1900', David Wilmore will offer insights into some strange patents

- 15.15 - 16.45

TV Lighting - Talk to the Experts (STLD)

A panel of respected lighting directors and consultants will discuss the current role of the LD and consider the techniques and technology employed in studio and location lighting

Forum '96

Wellington Room - Level 1

Wednesday 11th September

Gateway School of Music Recording and Technology, Kingston-on-Thames has joined with PLASA to present the following Forum.

Chaired by Dave Ward, Principal, Gateway School

- 11.15-12.30

PA in the Small Venue

An opportunity for discussion with experts on the problems of creating quality sound for small venues

- 14.00 - 16.00

Automated Consoles in Live and Theatre Sound

A chance for live sound engineers to discuss the principles of automation in live sound with a panel of leading console designers

Theatre Projects Stage

Theatre Projects/Concert Production Lighting have provided the impetus to a series of unique presentations at the PLASA Show which will take place on the main stage throughout the four days

Sunday 8th September

- AM - Gemini/DJ Magazine Mixing Competition

Amateur DJs compete for before a panel of top DJs, who will also be entertaining the crowds.

Monday 9th September

- AM - to be announced

- PM - Tales from the Production Desk

A talk by Brian Croft, managing director of Vari-Lite Europe.

Tuesday 10th September

- AM - Interactive Technology into the Future

A presentation by Peter Sarner of Sarner International.

- PM - Tales from the Production Desk

A session with world renowned theatre lighting designers Richard Pilbrow and David Hersey.

Wednesday 11th September

- AM - Digital Audio in Live Performance

Designers and operators talk about their favourite formats with Derrick Zieba of Dimension Audio, followed by a question and answer session.

- PM - Future Sound

Derrick Zieba chairs this seminar on how the work of performance sound will be done in the new millennium.

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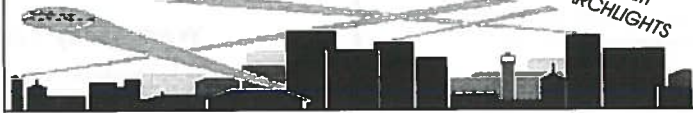
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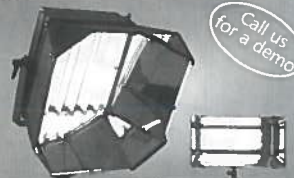
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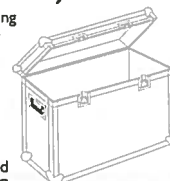
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L+SI talks to lighting designer Paul Dexter

Born in Upland, Southern California, in 1954, Paul Dexter is one of those rare American LDs who have spent as much of their careers in the UK, as in their native USA. In fact, Dexter now resides in the North East of England. His early family life held no clues as to what lay ahead: his father had been a jet fighter pilot in the Korean War and later worked for Lockheeds, while his mother was a book-keeper for a local travel agent.

However, when his parents parted in his mid teens, Dexter moved in with his step-brother who just happened to be a good friend of Frank Zappa's long-time road manager, Dick Barbour, and rock and roll began to cast its spell. "I had an almost out of body experience at a concert when I was about 16," Dexter recalls, "and knew then that this was what I wanted to do."

With illegal narcotics strictly taboo in the Zappa fraternity, this was an insight for him that held some real conviction. With Dick Barbour's support, he built his first lighting system out of 150W bulbs and pineapple cans. Controlled by Variacs, and by using a three pole switch, Dexter's system had the ability of a crude two-scene pre-set. Working for local bands - one group were famously supported by a bunch of young rowdies called Van Halen - he quickly built his system up to 50 lamps (a relatively large lighting rig in the early seventies) and soon became well known in the LA area.

The Hollywood 'Battle of the Bands' in 1973 proved a turning point when LD Marilyn Rennegal, who was working for competition winners Rare Earth, saw Dexter's work at the contest and asked him to come and work for Sundance Lights. He ended up staying for six years, moving from third man on the crew with a truss and two Genies for bands like T Rex and Robin Trower, to lighting designer in his own right for bands of the calibre of George Duke (maintaining the old Zappa connection) and Rick James.

Dexter had noticed early on that band managers often contracted in set designers for



Designer Paul Dexter.

"By the time he took on the LD's mantle in the mid-seventies, he believes he was one of the first to put lights into the set rather than just hang them above."

tour concepts, and so taught himself to draw. By the time he took on the LD's mantle in the mid to late seventies, he believes he was one of the first to borrow a leaf from the TV designer's book and put lights into the set rather than just hang them above. It must have caught someone's eye, for in 1980 Tasco, a company very active at that time on both sides of the Atlantic, asked Dexter to cross the pond and light the Ozzie Osbourne tour.

His first ever trip to Europe, it was to have a major impact on him in more ways than just alternative cultures. "During the early eighties, I saw a lot of rock stars from the heavy metal stable. On one occasion, I was in a design meeting while one of the band members sat slumped in the corner, drooling. I thought, this guy is paying my wages? So I decided to

diversify the means by which I earned my living."

Thinking it is one thing, but drawing away from the allure of touring and large pay-cheques another, and it was to be several years before Dexter broke the mould. In 1985, he met and fell in love with Suzie, a tour caterer from England. Although initially they lived in the US, his growing disenchantment with touring and the more rewarding idea of raising a family, prompted a move to Suzie's home area, Tyneside.

On cue, Joey arrived in 1988 and sister Rosie a year later. Throughout this time, Dexter's talent and reputation continued to grow, bringing him more and more prestigious tours culminating in a two-year stint for Elton John designing both set and lighting for the 'Sleeping With The Past' tour. Realising that there was no alternative but to take the plunge, he established Keys North Ltd in 1990, a new venture designed to exploit a yawning gap he'd spotted in the media and leisure market of the North East.

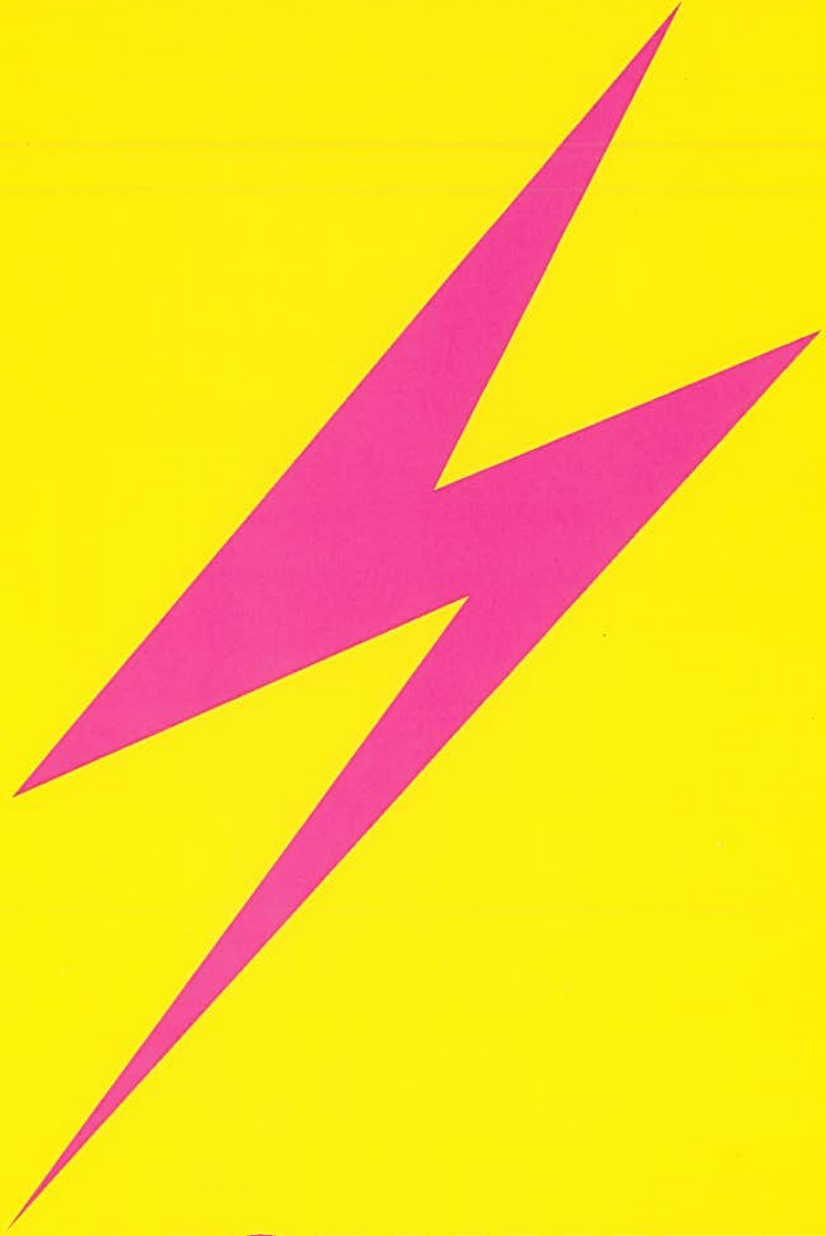
In an almost total departure from what he'd worked on before, Dexter began working with the likes of Ogdens and Apollo Leisure, formulating business plans for venue development. It's been an uphill battle since then: his perception of the gap has been vindicated by the building of the Newcastle Arena, but sadly not through the efforts of his development plan.

He has, however, made some notable achievements, spawned from the Keys North initiative. He founded an independent radio station A1FM and secured a licence from the broadcast authority, hosted his own regular radio show, and established a brokerage for American archive audio material (anything from Bogart and Bacall to live rock concerts) and he currently holds the UK broadcast rights for several prestigious shows.

Six years on, he's still an active force in the north-east but returns to his roots as lighting and set designer from time to time, just to keep in touch with what's happening. No doubt he'll make his mark when he takes on his next challenge - the TV industry.

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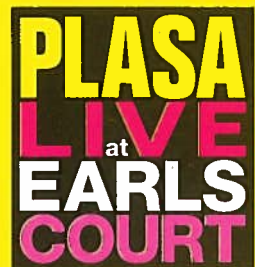


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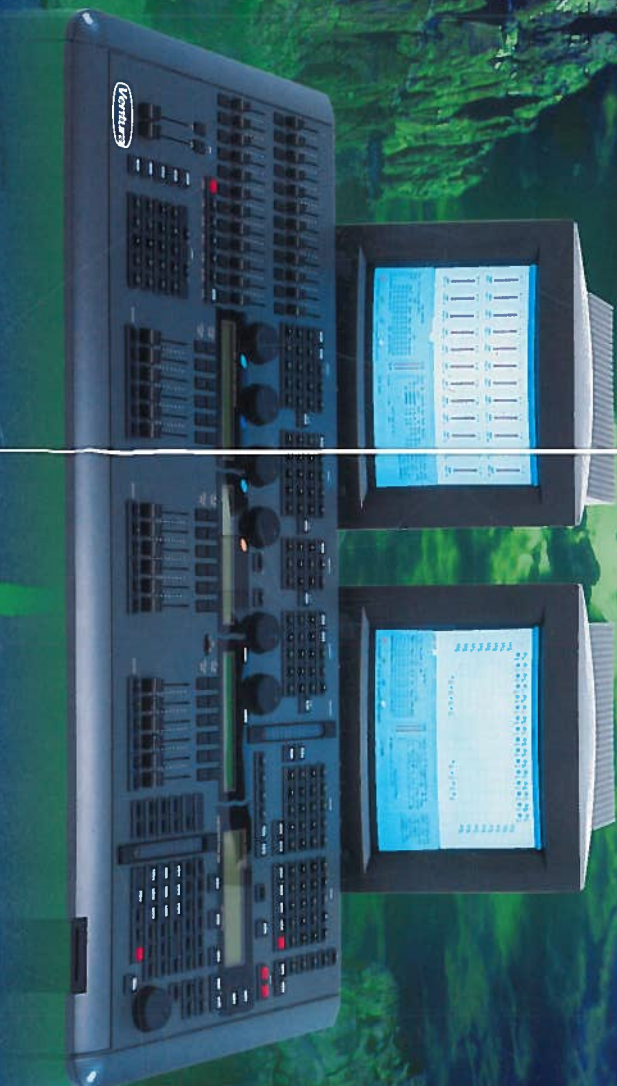
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