

Lighting & Sound INTERNATIONAL

February 2002

The Entertainment Technology Monthly

www.plasa.org/news

Fad or Fiction?

- Technical Focus on Line Arrays

Satisfying Soul

- Music's ultimate journeyman, Paul Carrack

Production Values

- Ian Whitehead and Steve Levitt interviewed

New Technology

- Key product launches of the last month

State of Grace

- Grace - The Musical, Amsterdam

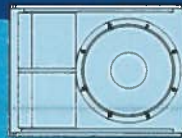


Industrial-strength speaker solutions, great tech support and proven reliability.

Mackie Industrial offers over 30 speaker solutions for 100V and 4/8-ohm permanent installations. Plus integrated amps, mixing matrix electronics, and an experienced applications support staff in the UK, France, Germany and Italy. Call or visit us at www.mackieindustrial.com.



VISION SERIES



PA180SW



PA152



PA151



PA281



PA261



PA121



PACK81

Vision and ART: A dozen rugged, flyable 2-way sound reinforcement speaker models, passive and active, 6" to 18" woofers, wood and composite enclosures.

ART SERIES



ART200



ART500



ART500A ACTIVE



ART300A ACTIVE



ART200A ACTIVE

Monitor: Considered by many to be the best-sounding small monitors available anywhere. White or black finishes and a multitude of mounting options.

MONITOR SERIES



MR4/4T



MR5S



MRB



MBT



M3STK

MACKIE
INDUSTRIAL



SOUND PALETTE™



DX8 DIGITAL



VISION SERIES



ART SERIES



4000 SERIES



MONITOR SERIES

www.mackieindustrial.com

UK +44.1268.571.212 • industrial@rcf.uk.com

FRANCE +33.3.38546.9160 • rcfcommercial@wannadoo.fr

GERMANY +49.2572.96042.0 • industrial@mackie.de

ITALY +39.0522.354.111 • industrial@rcf.it



"YOU SAY YOU WANT A **REVOLUTION?**"



CATALYST™

Catalyst—the spark that fuses light and video. Combining the flexibility of video with the control of DMX-512, Catalyst creates dynamic multi-media visual effects and revolutionary orbital movement.

WINNER:

Design Excellence,
PLASA 2001

WINNER:

Technical Innovation,
PLASA 2001

WINNER:

Entertainment Lighting
Product of the Year,
LDI 2001

WINNER:

EDDY Award
Entertainment Design
magazine



WHOLEHOG III

A fast ethernet network using internet-compatible protocol is the backbone of this revolutionary lighting control system—the latest in the line of award-winning Hog consoles. The intuitive interface has all of the Wholehog II functionality but with many enhancements including large, adjustable-view touchscreens.



HANDSHAKE™

A lighting controller in the palm of your hand. Use your Palm® Organizer to address, program and playback fixtures. Automatically play back your show. This is as easy as it gets.

WINNER:

Best Lighting Controller—
New Products Showcase,
Lightfair, 2001



C-16

Discover the power of color in light. Brand new in the **ATMOSPHERES™** architectural product line, this affordable, easy to use, MR-16 based luminaire turns white light into outta-site light. With C-16, program gentle morphing or hi-energy color changes to suit any mood.

WINNER:

Architectural Lighting
Product of the Year—
Honorable Mention,
LDI 2001

Well you know...
High End Systems, as always,
is first on the horizon with revolutionary
new ideas and products that change your world.

AWARD-WINNING
**ILLUMINATION
INNOVATION**

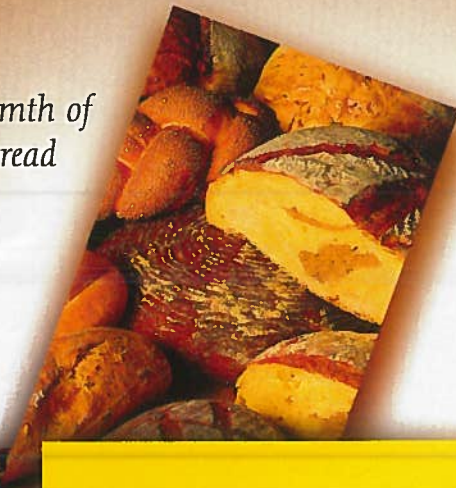


The company that revolutionized an industry... brings you more to look forward to in 2002.

HIGH END SYSTEMS, INC. / Austin, Texas USA / Phone: 512.636.2242 / Fax: 512.637.5290 / Austin / New York / Los Angeles / London / Singapore / Germany / Orlando

www.highend.com

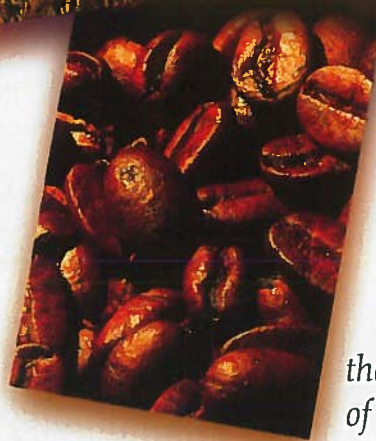
*the cosy warmth of
new-baked bread*



*durable strength of
weathered wood*



LEE Filters



*the aromatic welcome
of roasting coffee*

The Art of Light



Lighting & Sound INTERNATIONAL

February 2002 Volume 17, Issue 2

Lighting & Sound International – published monthly by the Professional Lighting and Sound Association.
 © Copyright Professional Lighting and Sound Association. ISSN 0268-7429
 The views expressed in Lighting & Sound International are not necessarily those of the Editor or PLASA.

CONTENTS

Grace - The Musical. Photo: Mike Mann

NEWS

International News Round Up 6

REGULARS

No Comment Tony Gottelier 64

Audio File Phil Ward 70

Second Take John Watt 76

In Profile We pin down L&S's new technical editor James Eade 90

FEATURES

Technical Focus 49-58

This month we have more news on motor control connectors, whether Parsafes change PAT Testing classification and the colour temperature of discharge lamps. We also assess the growing trend towards line array technology and look at the major systems in the marketplace.

Satisfying Soul 61-63

Not everybody will know the name Paul Carrack, but they'll certainly have heard his music. Steve Moles catches up with the ultimate journeyman.

Production Values 67-68

Mike Mann interviews Ian Whitehead and Steve Levitt of Production North.

New Technology 73-74

We look at some of the key product launches of the last month.

State of Grace 79-81

This winter saw the opening of an extraordinary multi-national production in a brand new, purpose-built theatre in Amsterdam. Mike Mann reports.

PLASA NEWS 12

WEB COLLECTION 45-47

CLASSIFIEDS 82-83

DIRECTORY 84-89

Lighting & Sound INTERNATIONAL

The magazine is available on annual subscription: UK £55.00 Europe and rest of world £70.00 (Euros 112 - US\$100.00) Airmail £95.00 (Euros 152 - US\$137.00). Single copy price £3.50 plus postage.

EDITOR Ruth Rossington - ruth@plasa.org
 DEPUTY EDITOR Lee Baldock - lee@plasa.org
 ASSOCIATE EDITOR Tony Gottelier
 TECHNICAL EDITOR James Eade - technical@plasa.org
 ADVERTISEMENT MANAGER Barry Howse - barry@plasa.org
 ADVERTISING CO-ORDINATOR Jane Cockburn - jane@plasa.org
 PRODUCTION MANAGER Sonja Walker - sonja@plasa.org
 SUBSCRIPTIONS Sheila Bartholomew - sheila@plasa.org

PLASA - Managing Director: Matthew Griffiths - matthew@plasa.org
 PLASA - Financial Controller: Shane McGreevy - shane@plasa.org

Regular Contributors:
 Steve Moles, Rob Halliday, Louise Stickland, John Watt,
 Ian Herbert, Jacqueline Molloy, Mike Mann, Phil Ward.

Published from the PLASA office:
 38 St Leonards Road, Eastbourne, East Sussex BN21 3UT, UK.
 Tel: +44 (0)1323 418400 Fax: +44 (0)1323 646905

Lighting & Sound International is published monthly for \$100.00 per year by The Professional Lighting and Sound Association, 38 St Leonards Road, Eastbourne, East Sussex BN21 3UT. Periodicals class postage paid at Rahway, N.J. Postmaster: Send USA address corrections to Lighting & Sound International, c/o Mercury Airfreight International Ltd, 365 Blair Road, Avenel, NJ 07001.

Every effort has been made to ensure that the information carried in L&S is accurate, but the Publisher cannot accept responsibility for its contents or any consequential loss or damage arising as a result of the use of material printed in L&S.

The editor's consent must be obtained before any part of this magazine may be reproduced in any form whatsoever. L&S welcomes relevant press information and feature ideas, but is under no obligation to include unsolicited items, or return articles, news stories or photographs. Any photographs submitted may be used to promote the Association across its other media. L&S reserves the right to edit news and features as required.



VARI*LITE
 Express yourself.

We'll put
 your name
 in lights.

Production Services:

Conventional Lighting

Automated Lighting

Control Systems

Rigging

Crew

Distribution

London: +44 (0) 20.8575.6666

US: 1.877.VARILITE

www.vari-lite.com



International News Round-Up

log on to www.plasa.org/news for daily news updates

Angels in the Wings

The news that some of the biggest names in the UK theatre industry are to launch a new venture which, if successful, will do much to boost the UK theatre market, can only be welcome news to those working in the sector.

Theatreshare will operate as a theatrical investment and production company, its main remit to develop and produce a range of new productions for London's West End. To fund the venture, the company has gone for the rare approach, in West End terms at least, of inviting large numbers of small investors to buy in to the venture for a minimum stake of £2,500. The target is £2million.

The high-profile hook is the promise of a share in potential profits from ticket sales, theatre transfers and film and TV adaptations. The less appetising downside is made clear in smallprint on the company's website - "this carries a high degree of risk and may result in the loss of the entire investment."

However, the blueprint for the new company would seem to mitigate against such an eventuality. Theatreshare will draw on the collective experience of a management team, board of directors and consultants, who between them have many years' experience in West End theatre and who have been associated with some of the biggest hit shows of the last 20 years. Amongst the line up are Andrew Lloyd Webber,

Stephen Fry (in the hot seat as company chairman), and Nicola Horlick. The company has also signalled that this will be a highly commercial venture - eighty per cent of funds will go towards shows which demonstrate the best potential for making a profit.

The ties to Lloyd Webber's Really Useful Group are self evident in the exclusive arrangement with Really Useful Theatres, the largest theatre owner in the West End and the fact that Andre Ptaszynski, currently chief executive of Really Useful Theatres, will be Theatreshare's managing director. The deal will place some of the best West End theatres at Theatreshare's disposal.

The company already has a busy year planned: it will be involved in staging Lloyd Webber's latest musical *Bombay Dreams* and will also have roles in both the London run of the hit Broadway show *The Producers* and the forthcoming stage adaptation of Ian Fleming's *Chitty Chitty Bang Bang*.

For many, the initiative is timely: theatre's fortunes haven't exactly hung in the balance of late, but those involved know to take nothing for granted. The days of the long-running, bank-rolling musicals seem to be at an end. Even productions planned for relatively short runs haven't always made it to the finishing post. A new momentum can only be good for the West End.

So if you've got a bit of loose change and you fancy a punt, now might be the time to dig deep.

See also **No Comment** on page 64.

Theatre Staff to Strike

Trouble continues to rumble on in the West End: BECTU members - including lighting, audio and backstage staff - have voted to take industrial action over low pay.

The move comes after lengthy negotiations with the Society of London Theatres (SOLT) - the association which represents the producers, theatre owners and managers of 50 theatres in central London. Even an eight-hour session at ACAS couldn't help the two sides resolve their differences.

In the latest round of talks SOLT increased its original offer from 1.6% to 3.25%, but withdrew its undertaking to backdate the award to 18 November 2001. This would increase the average wage to £6.54 an hour, but, according to the union, would still leave seven of the West End theatres' 10 pay grades below the Council of Europe's £7.39 decency threshold - and five below the Low Pay Unit's threshold of £6.82.

BECTU says that London's theatres can look back over three years of good profits, and should be able to fund pay increases. If agreement isn't reached soon, theatres in the West End may well go dark.

ARTISTIC LICENCE

IF +44 (0)20 84 26 05 51

Micro-Scope 3a is the latest release of the World Best Selling DMX512 Tester. It supports a range of new features for the forthcoming DMX512-A standard including Network Test, Text Packets, System Information Packets, Alternate Start Codes and much more.

In combination with the new release of Mic-Edit, Micro-Scope 3a can store an entire show patch, identifying each and every channel function.

Perhaps best of all - we've held the price at £380 (that's around \$535 or €615).

As for the thousands of Micro-Scopes already out there - yes you can upgrade!

DMX512-A SOLUTIONS

Email: Sales@ArtisticLicence.com Internet: www.ArtisticLicence.com

T +44 (0)20 88 63 45 15

Micro-Scope 3a
ARTISTIC LICENCE
DMX512
1 Screen
2 Signal
3 Signal +
4 Trigger
5 Ground
MIDI
1 NC
2 Screen
3 NC
4 5 Volt
5 Signal

MAC 2000

Electronic performance

Performance is Everything

Everything you need in a

special effects luminaire.

This latest edition to the

MAC 2000 Series is the

ideal illumination **framing** tool

for theaters, television, or any

application that demands

ultra **low noise** levels. The

framing profile is fitted with the

proven **HMI 1200 W** lamp and

features a 4-blade beam

framing system. Useful for

accurate illumination coverage

of stage props and scenery,

the **precision** adjusting, fully

automated framing system

transforms the beam into a

multitude of different shapes. A

unique, **gobo animation** wheel

creates extraordinary theatrical

effects such as **fire**, **sky** and **water**

imaging. The entire animation wheel

pivots to allow for **horizontal** and

vertical animation. But that's not

all. The MAC 2000 Performance is

also equipped with the highly

advanced features that have made

the MAC 2000 Profile a **success**:

CMY color mixing, variable color

temperature correction, 5 slot gobo

wheel, additional effects wheel,

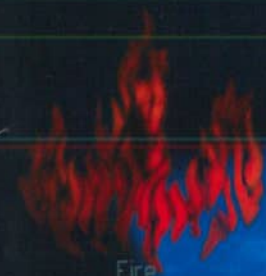
extreme brightness, variable frost,

focus and zoom system, iris, smooth

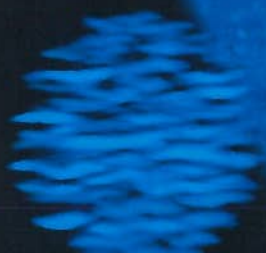
dimming and hot lamp restrike.



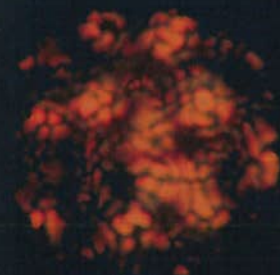
Sky



Fire



Water



Earth



Martin

www.martin.dk

Call Denmark: (+45) 87 40 00 00 • USA: Florida: (+1) 954 858 1800 • California/Mexico: (+1) 818 252 0399 • Latin America: (+54) 11 4581 0044
Argentina: (+54) 11 4581 0044 • Canada: (+1) 514 738 3000 • Germany: (+49) 8131 59820 • United Kingdom: (+44) 1622 755442
France: (+33) 1 69 12 10 00 • Italy: (+39) 432 67 1 730 • Singapore: (+65) 842 3031 • Hong Kong: (+852) 2264 1500



Fujitsu Ten Ventures into European Audio

Fujitsu Ten Limited Japan has formed a joint venture company, Eclipse TD (UK) Ltd, to distribute and market the Eclipse TD range of monitor speaker systems in the United Kingdom.

The Eclipse TD 508 and TD 512 monitor systems, based on Time Domain principles, were launched in Japan in April 2001 (where they received a Japan Industrial Design Promotion Organisation award) and shown publicly in Europe for the first time at the Hi-Fi Show in London in September. Following the reaction at the Hi-Fi Show, and industry response at a number of private studio demonstrations, the

board of Fujitsu Ten Ltd, Japan decided to establish a UK operation. Based in west London, Eclipse TD (UK) Ltd is headed by managing director Hiroshi Kato, pictured left with Hiroshi Kowaki, chief engineer of Eclipse TD Division, Fujitsu Ten Japan.

Commenting on the new venture at a reception at Abbey Road Studios held to mark the launch of the UK company, Hiroshi Kato told L&S: "This is the

culmination of a long term process of design and evaluation in which the people here in the UK have been closely involved, in co-operation with the design team in Japan. We have been active in evaluating the speaker design in the field, on recording sessions and with leading recording engineers and studios.

Several leading studios and engineers are already evaluating the Eclipse TD 512 in critical monitoring applications, including Gary Thomas, chief engineer at Angel Studios, Videasonics, and the major new Sphere Studio complex in south London.

Maltbury on the Move

At the end of last year, staging specialist Maltbury Ltd moved from its London premises to new offices in Brighton.

The move came at the end of a busy year for the company: during 2001 it provided staging for the Royal Opera House, Covent Garden, The Budweiser House Party, St. Johns College School, Cambridge, BITE: 01 at the Barbican and The Met Arts Centre, Manchester.

To coincide with the move, managing director Philip Sparkes also re-launched the company's website, which is now easier to navigate and more user friendly. The improved site also gives better access to a wide range of up-to-date information.

Maltbury's new address is 11 Hollingbury Terrace, Brighton BN1 7JE. Tel: +44 (0) 845 130 8881.

電音 DENON Professional Audio Brand

Hayden Laboratories Ltd

Hayden House, Chiltern Hill, Chalfont St Peter, Bucks, SL9 9UG United Kingdom T> 01753 888447 F> 01753 885892 E> info@haylab.co.uk

VISIT US AT
PROLIGHT &
SOUND
HALL 8 STAND A64
SIB
BUILDING C5
STAND 8887 / 7473

P3 technology - taking you to new heights of reliability



The new P3 technology from Philips Lighting is a great leap forward in lamp reliability for the entertainment industry. P3 technology overcomes many of the common causes of lamp failure and offers you improved quality and greater design freedom. You no longer have to take a leap into the dark on lighting. Just look for the P3 technology sign on our vast range of halogen and gas discharge lamps – the sign that gives you an all round better performance for your money.

Visit our website at www.broadway.philips.com to find out more.



PHILIPS

Let's make things better.



TC Group Proposal Accepted by TGI Shareholders

The TC Group has been successful in its bid to purchase a stake in TGI plc. The Danish company (the parent company of TC Electronic, TCWorks and TC-Helicon) first tabled its proposal to TGI shareholders at the close of last year. They opted to accept the proposal unconditionally in late January.

The move should make for some interesting future developments: TGI plc is the holding-company covering four of the biggest names in the audio market - Scottish speaker manufacturer Tannoy; high-end PA speaker manufacturer Martin Audio; Swedish high-end amplifier manufacturer Lab Gruppen and car speaker manufacturer GLL. These will come together with the three brands represented by TC - TC Electronic, manufacturer of a wide range of digital processors, TC-Helicon, producing digital vocal processors and TC Works which develops top-end software solutions. The



Group is also responsible for the worldwide marketing and distribution of Dynaudio Acoustics monitor products.

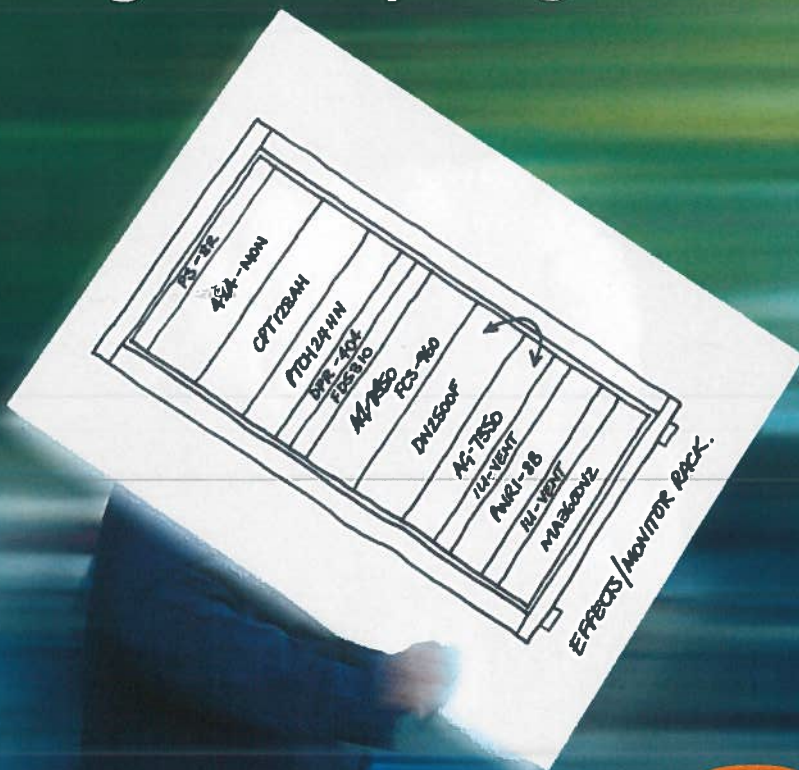
According to Anders Fauerskov (pictured left), CEO at TC Group, "the timing is perfect. Within the new TC Group, we now have the acoustics knowledge, driver technology, digital signal processing know-how, amplification and power supply skills to make a major impact in the future market for integrated solutions."

Acoustic Panels Raise Safety Issue

The Arcimboldi Theatre - temporary home to the La Scala Opera company whilst its famous home is being renovated - has found itself in the news again just weeks after opening.

A glass panel, one of 100 designed to improve acoustics at the venue, fell onto seating during a recent performance of the ballet *Excelsior*. Fortunately, the seats beneath were empty, cleared because technicians felt uneasy about cracks that had started to appear in some of the panels. Inevitably, this has led commentators to speculate on the safety of the theatre, which was constructed in just over two years in order to be ready for the start of the 2002 season. The theatre is currently closed whilst further investigations takes place.

Image is everything.



How's yours looking?

With the largest, most detailed symbols library and powerful, easy-to-use tools, Stardraw software lets you design, engineer, price and present your systems faster, better and more professionally than ever before.

Stardraw, because it's about time.

STARDRAW CREATES

- Engineering schematics
- High detail rack layouts
- Sales presentations
- Custom panel layouts
- Architectural layouts
- Bills of materials and Excel reports

STARDRAW INCLUDES

- All the tools you need - no other design software required
- Over 17,000 high quality product symbols
- 100s of new products added every month
- New feature every month

WHY USE STARDRAW?

- So easy, even a salesman can use it
- So powerful, even an engineer will love it
- So professional, your customers will demand it



To create professional results in minutes visit www.stardraw.com



Pure soul.

Pure vision.

All me.

SHURE[®]
IT'S YOUR SOUND™



Freephone to receive our proaudio catalogue now on **08007311990** or visit www.hwinternational.co.uk

Association NEWS

2002 PLASA Executive Committee Announced

Following elections held at the tail-end of 2001, the Association has announced two new appointments to its executive committee. With effect from January 1st, Tim Brown of Apple Sound and Tracey Patterson of Artistic Licence have joined PLASA's executive body.



Tim Brown



Tracey Patterson

The new places were made available by the departure of Paul Adams (PAI Group) and Paul Hinkly (LMC Audio) from the committee. Paul Adams stepped down at the end of 2001, having served on the committee for 11 years, including four years as chairman (1995-98) and three years as vice-chairman (1999-2001). Paul Hinkly, who took the decision not to re-stand for election at the end of 2001, had served on the committee for 18 months and had been a valued member of the team during that time. At the December 2001 meeting of the committee, PLASA Chairman Mick Hannaford acknowledged the valuable contributions that both men made to the Association, and thanked them for their efforts.

Following the departure of Paul Adams, Diane Grant of DHA Lighting has been elected the new vice-chairman for 2002, thereby becoming the first female to hold the role in the Association's history. Mick Hannaford of LightProcessor continues as PLASA chairman.

NSCA Grants

If you're a UK company planning to exhibit at NSCA, then it's worth talking to PLASA. Thanks to an arrangement with Trade Partners UK, the Association has secured funding for UK exhibitors at the show, which takes place from 25-27 April 2002 in Denver, Colorado.

This is the first time that the Association has received funding for this event: eligible participants will receive 60% of stand and constructions costs, up to a limit of £2,300. To benefit from the grant companies must be registered in the UK and exhibit predominately UK products and services. You don't have to be a PLASA member to benefit. If you are interested in NSCA call Norah Phillips on 01323 410335 or e-mail norah@plasa.org. The deadline for return of application forms is 28th February 2002 so don't delay.

► www.plasa.org/association

PLASA Puts Emphasis on Information

Members of PLASA can now access useful information through an online Services News section on the main PLASA website. This recent initiative is a web-based resource which provides members with a head-start over non member companies since it offers updates on Association activities, as well as highlighting overseas trade opportunities, key resources, project leads and a Q&A section for common business issues. Members also receive regular monthly e-mails summarising recent developments and offering links to the relevant information.

► www.plasa.org

PLASA
INDUSTRY
DIRECTORY



2002

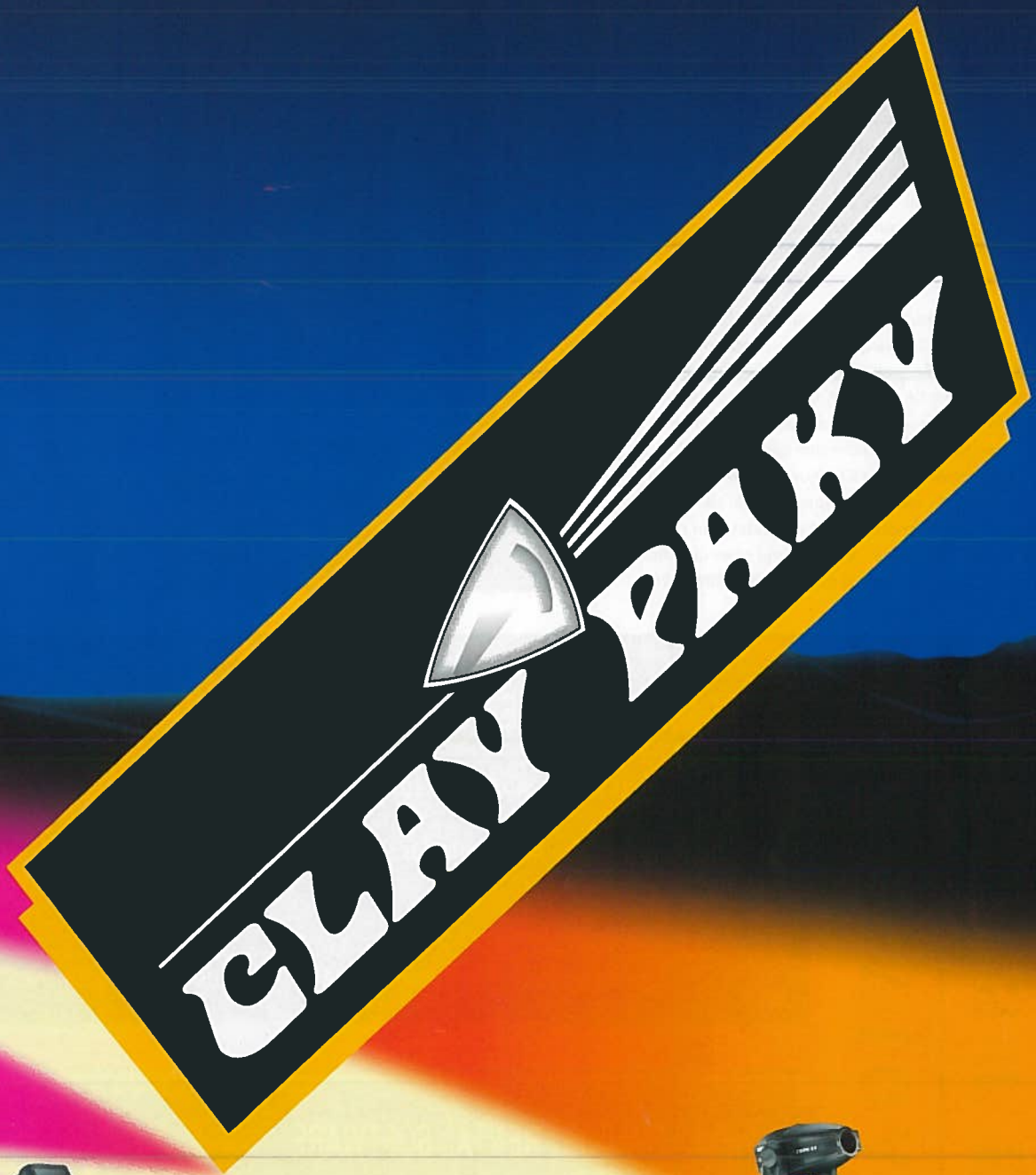
PLASA Directory

The latest Directory of Members is about to be published. This annual publication, which will be mailed shortly, offers

detailed information on all PLASA Members, promoting the range of products and services offered by the membership to the entertainment and venue technology industry at large.

Over 11,000 directories are printed: in addition to being distributed to the full mailing list of L&SI (which includes architects, consultants, designers, distributors, engineers, installers, hire companies, production crews and venue managers), the Directories are also despatched to all British embassies worldwide and circulated widely at industry trade shows and events.

W E L C O M M E T O T H E *NEW PRODUCTS*



*New
Professional
Colour Changers*



150 E 150 250 400
CP Color

*New
Moving Body
Projectors*



Color CYC Golden Color 1200 Golden Spot 1200 Stage Color 1200 SV Stage Zoom 1200 SV Stage Profile 1200 SV



Launch of Immedia Spearheads Change

Northern Light has announced a restructuring programme to take its business forward in 2002. A key development is the launch of Immedia Systems, a new audio-visual division located in Reading.

Richard Passman heads up the specialist projects team, which includes programmer Nick Nurock, sales engineer Dave Pritchard and AV engineers Andy Macdonald, Steve Dishon, Derek Heeps and Graham Lawton, who recently rejoined the company from Dubai. The launch of Immedia has acted as a catalyst to centralize the London and south-east operations in Reading. The international sales team of Derek Gilbert and Graham Fisher will move from their temporary offices in Marlow to the new facility.

As part of the reorganization north of the border, Northern Light has closed its Glasgow branch, consolidating the hire and sales operations at its Edinburgh headquarters. Mike Smyth, Ken Christie and Gerry Corcoran will continue to represent the West of Scotland. Commenting on the developments, managing director John Allen told L&S: "Creating Immedia offers a unique opportunity to target higher-growth AV markets. In turn, this will allow dedicated project teams to concentrate on expanding our core theatre installations business, hire and sales operations." Immedia can be contacted on +44 (0)118 903 5070.



Spectacular Police Job

Our picture shows the new lighting scheme for Merseyside Police Authority's (MPA) HQ in central Liverpool - part of the ongoing plan to light landmark buildings in the City of Liverpool.

The overall schemes for these were designed and supplied by Philips, but this particular project was completed by architectural lighting specialist i-Vision. The company's Geoff Jones split the lighting into three distinct areas - a blue wash light illumination of the building's main elevation, a green wash light effect to illuminate the walkway and his 'Thin Blue Line' effect - a glowing blue line delineating the building form, encased in a custom aluminium extrusion.

HireTrack Eclipse

COMPREHENSIVE EVENT AND RENTAL MANAGEMENT SOFTWARE

for the Larger Business Enterprise.

- Multi User - Available for 2 to 100 Users
- Multi Site - Available for up to 16 sites
- Multi Currency
- Used by Over 400 Event Rental Companies in 17 countries

NEW, LOW COST RENTAL SOFTWARE

for the Small Business Enterprise.

- Scalable - available for 1 to 3 users
- Flexible - new technology allows for screen lay-out customisation
- Powerful - handles both rental and sales stock
- Affordable - £385 (€620*) single user £556 (€899*) multiuser

New Master

New Category

Save

Delete

Promote

Demote

RentalDesk is sold for the price shown in Euros. Sterling price is based on the exchange rate of 8/8/2001.

Navigator Systems Ltd
 Tel: +44 (0)7000 628797
 Email: enquire@navigator.co.uk
 Web: www.navigator.co.uk

No.
122.2

Bandit Standard When you teach someone something you pass on not only new wisdom or new skill, you bring light into the darkness. When you empower others, you make them feel good about themselves. And you feel pretty good, too. It's all about light.



© 2000 Bandit Lite



Do good work.
Make light.

banditlites.com

QuickTruss®

NOW AVAILABLE IN THE UK



- Wide range of Truss Systems, Tower & Roofs
- CELL Aluminium Clamps
- Proven Quality & Impeccable Service
- Free AutoCAD® Design & Technical Support
- **QuickShip** Program

Call today receive our latest technical literature and request a free copy of our new **QuickTruss®** CD-ROM

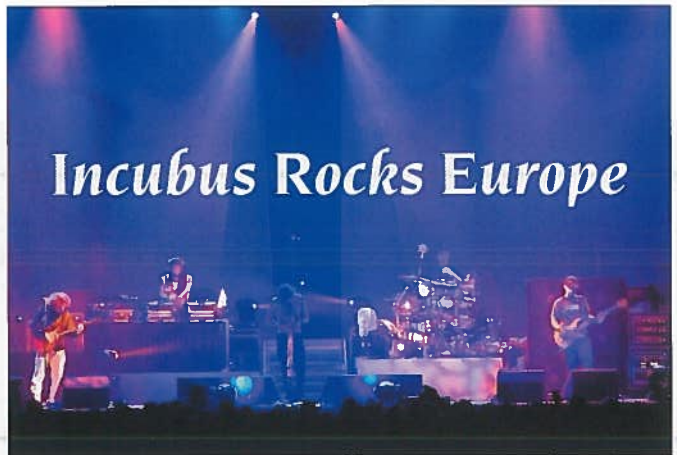
MILOS
STRUCTURAL SYSTEMS

Milos UK Ltd., Unit 5, 13-33 Inkerman Street, Luton LU1 1JB, U.K.
Tel: +44 (0)1582 728520 • Fax +44 (0)1582 728525
e-mail: info@milosuk.co.uk • <http://www.milosuk.co.uk>

News Round-Up



Incubus Rocks Europe



Incubus are currently enjoying a sold out world tour, coinciding with the runaway success of third album, Morning View.

The lighting designer for the tour is Joe Paradise, who took the bold step of choosing an all-Martin MAC moving light rig - there's not a generic light in sight! So far, 16 MAC 600s, four 500s, eight 300s, ten 250s and four 2000s have been Paradise's tools, arranged between two trusses and the floor, operated by Paradise using a WholeHog II console.



LD Joe Paradise, production manager Eddie Kercher and Bandit's Jason Tang

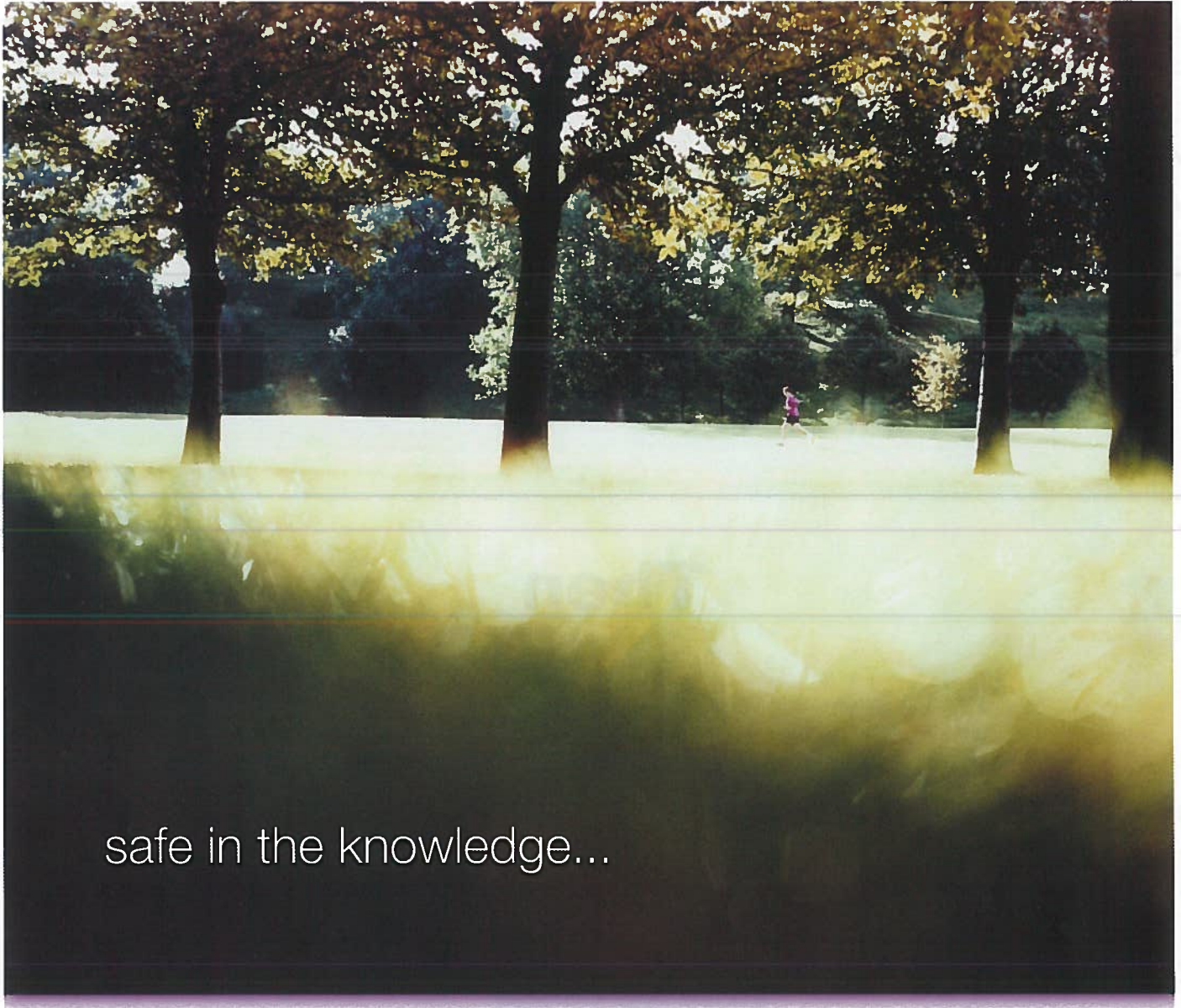
In the supply seat are the US and UK operations of Bandit Lites, who are providing lighting for the whole tour, which kicked off on September 14th and also takes in Japan and Australia before returning to play three months' worth of arenas in the US. Paradise is a hands-on LD and currently it's just him and Bandit US crew-member Geddy Kordyjaka in the lighting department, although the system was boosted in terms of fixtures and crew for the Wembley show.

FOH sound engineer is Greg Nelson, a man who loves his sub bass, and who has been with Incubus for three years. The sound suppliers in the US are Illinois-based DB Sound, with the UK and European sound rig supplemented by Britannia Row.

Nelson is using the new EV X-Line line array system for the tour. At Wembley, his usual main FOH PA system became the side fills, and the main stacks role was fulfilled by the EV X-Array boxes. The mix is handled on a Midas Heritage 3000 which is Nelson's desk of choice. "It's smaller, lighter, purple and looks cool," he comments. He also likes the smoothness, presence and vocal clarity of the X-Array system. The new EV X-Line subs have certainly made their mark on the show and have given Nelson a huge advantage in the low frequency department.

Nelson is using an AL Smart valve compressor on vocalist Brandon Boyd and a bit of EQ, but apart from that, his vocal is completely dry - it has plenty of power and punch and needs nothing else. The band all use Shure 300 in-ear monitors apart from Chris 'DJ' Kilmore who is on wedges. The monitor engineer for the tour is Bill Head.

For production manager Eddie Kercher, the most challenging aspect of the tour so far was getting it started! Like other crew and band members, he was sitting on a plane at 9am on September 11th en route to rehearsals in Guildford, Connecticut. They were all grounded. Naturally the tour had to go on, so Kercher rented a car and drove from Florida to Tennessee, met the tourbus in Knoxville and drove with that to Connecticut. By the time everyone managed to get together, the rehearsal period was lost and they had to go straight into the first gig!



safe in the knowledge...

...that our hire management software is based on Microsoft Technology.

inspHire offers state of the art, multi-lingual, multi-currency, easy to use software solutions to organise and optimise your hire process. Our mature, scalable SQL product is suitable for all types of hire and systems with a minimum of 10 users up to 1000 users and comes with an optional e-business module which allows your customers to do business with you 24/7.

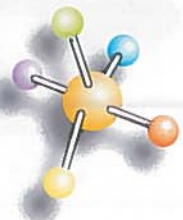
For more information please contact inspHire sales on **+44 (0)870 013 0030**

email: sales@insphire.com

www.inspHire.com



inspHire



Automated Yoke
extra

Automated Iris
extra

Automated Gobo
Attachment
extra

Automated Focus
extra

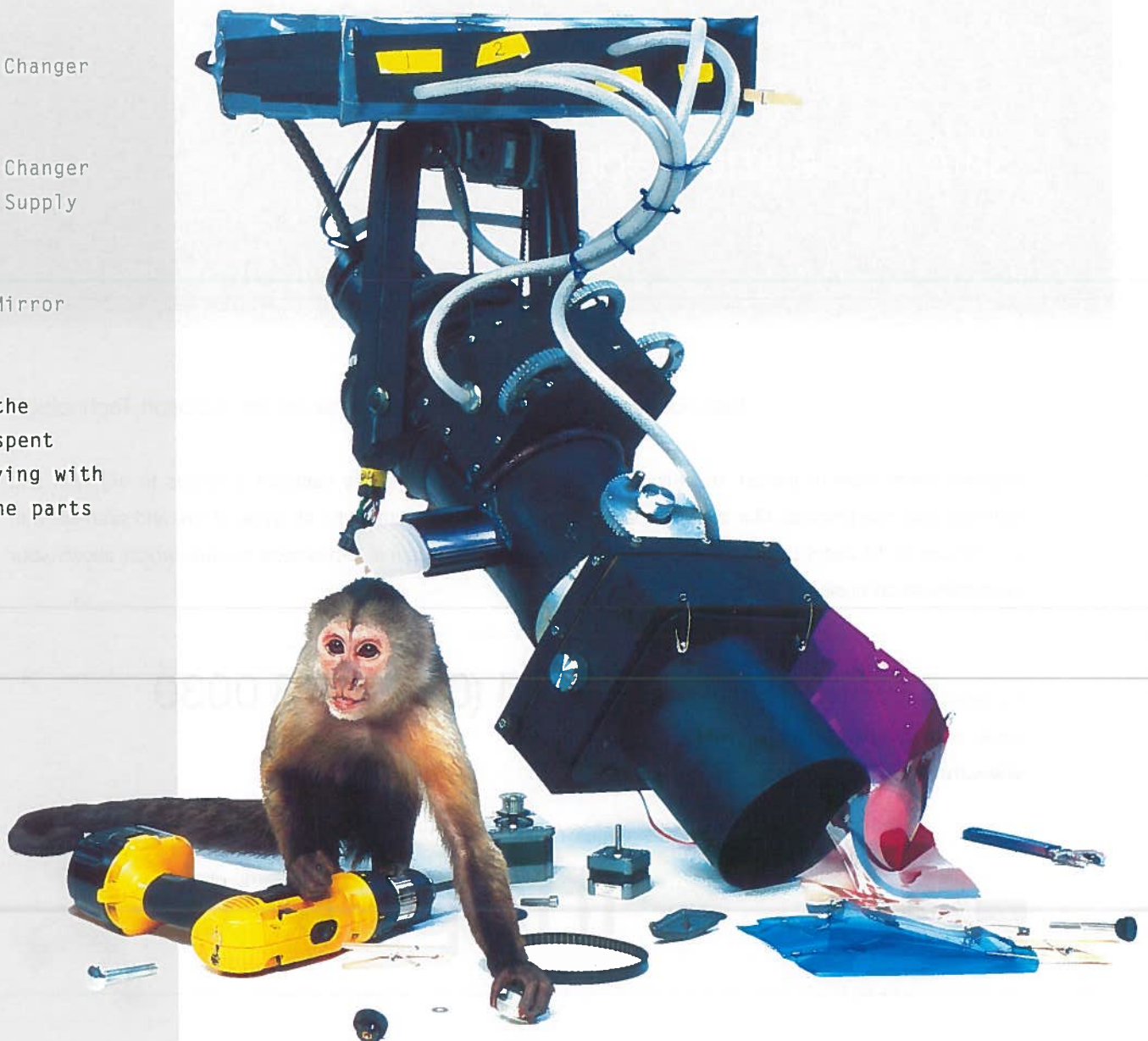
Color Changer
extra

Color Changer
Power Supply
extra

Beam Mirror
extra

Plus the
time spent
monkeying with
all the parts

Then



Now



VL1000™ ERS

Introducing the completely automated, completely affordable, completely professional ERS.

Forget about buying all those extra parts and adding them to a conventional ERS. The VARI*LITE VL1000™ ERS is an entirely new kind of light: a fully automated Ellipsoidal Reflector Spotlight without the expense and inconvenience of add-on products. Plus it produces more than 10,000 lumens of beautifully bright light from a tungsten source or more than 15,000 lumens from an arc source — your choice. With performance like this, the VL1000 ERS can replace several conventional lights in small venues or serve as an automated workhorse at the world's biggest shows. The options are endless.

The VL1000 ERS starts at almost half the price of many automated luminaires available today. In fact, it's much more affordable than a conventional ERS with popular accessories. An amazing light with a more amazing price, the VL1000 ERS is the new standard for automated lighting.

www.vari-lite.com

VARI*LITE
Express yourself.

Automated
Pan & Tilt
included

Automated
Zoom Optics
included

Crossfading CYM
Color System
included

Automated Diffuser
included

Automated Framing
Shutter or Iris
included

CHAIN MASTER

SEE US IN
FRANKFURT
HALL 8.0, STAND A60



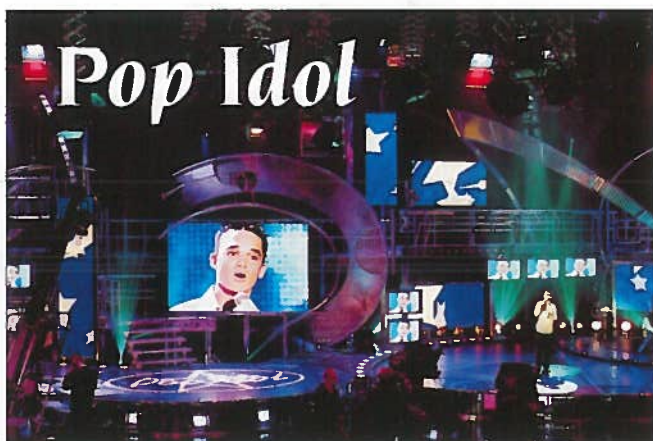
Full House

CHAINMASTER BÜHNENTECHNIK GMBH

D-04838 EILENBURG · UFERSTRASSE 23

TEL. +49-(0) 34 23 - 6 92 20 · FAX +49-(0) 34 23 - 60 69 03 & 69 22 21

HTTP://WWW.CHAINMASTER.DE · E-MAIL: SALES@CHAINMASTER.DE



Depending on your tastes you've either been glued to your telly, or as far away from it as possible, for the current run of Pop Idol on ITV.

The series, which seems to have been on for most of the last millennium, has been divided into three elements - the first consisting of various open auditions staged in hotel conference rooms throughout the country. This was followed by the 'semi finals' which took place at a staged rehearsal room in Teddington Studios, ending with the ten week finals hosted at Fountain Studios in Wembley. The set designer for the production is Andy Walmsley, well known to readers of L&SI for his much copied 'Who Wants to Be A Millionaire' studio set. "Pop Idol has been fascinating as a design brief," explained Walmsley. "We started with a large video cube wall and one lonely plasma screen at Teddington Studios, but then the anti was upped to an orgy of AV for the final 10 weeks of this mammoth show."

Feeding this orgy has been Screenco, who supplied a 15mm central rotating screen complemented by 25mm LED modules and 42" plasma screens - sourced from sister company CT London - which were arranged about the set in an abstract fashion. The 15mm LED was mounted on a bespoke rotating structure, whilst the 25mm LED modules and plasma screens were all supported by tailor-made aluminium brackets supplied and constructed by stage contractors Total Fabrications. Also provided by Screenco were the graphics - displayed during the show - which ran from two Doremi VID Digital video player/recorders and were mixed through a Magic Dave DVE Desk.

Andy Walmsley added: "The LED element is breaking new ground for TV. Videowalls and even a limited amount of LED modules have, of course, already been used on TV, but nobody has ever swamped a studio with this amount of kit before. Thames TV are putting me up for a Bafta for this work, so I guess you can conclude that they are pleased with the finished effect, and hopefully you will start to see a lot more AV equipment integrated into TV music shows from now on."

Lighting director for the show is Al Gurdon.

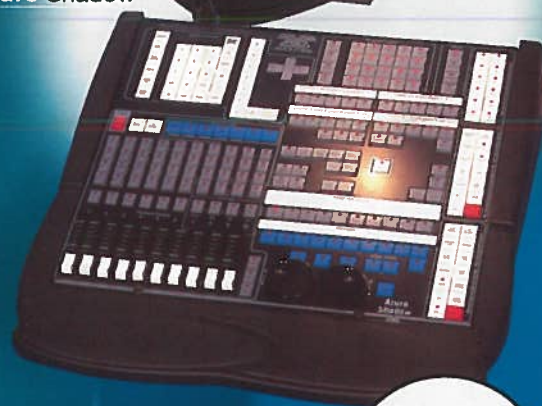
CTS Workshop

PLASA members Central Theatre Supplies, in conjunction with Solihull Arts Complex, held a Lighting & Sound Workshop earlier this month at Solihull Arts Complex in Solihull. The training day was open to schools and amateur theatres, and provided an insight into stage lighting and sound, including demonstrations and advice on how to achieve certain effects. Following the morning session, an exhibition took place where those attending were able to meet with a number of manufacturers (including Zero 88, Selecon, HW International, Doughty Engineering, Prolyte, Celestion, Strand, Stonewood Audio and Audio Technica) and view their latest products and equipment.

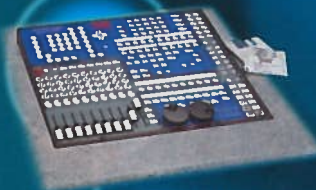
2000 Azure

Azure 2000

Azure Shadow



CALL FOR
TRAINING
VIDEO



19" Rack Mounting



Console



Touring System

- 2,048 Channels
- 500 Memories or Sequences
- 200 Fixtures
- 200 Dimmers
- Azure Shadow features live *Shadow* playback buttons
- Azure 2000 and Shadow Series' are available in all formats

AVOLITES



UK
Tel: +44 (0)20 8965 8522
Fax: +44 (0)20 8965 0290

USA
Tel: +1 865 938 2057
Fax: +1 865 938 2059

avolites.com

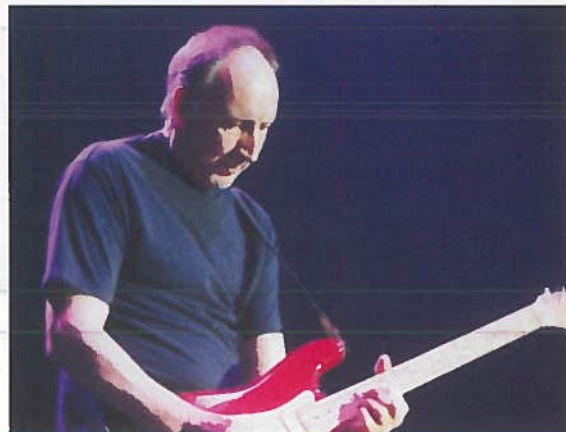


The Who at Watford Coliseum

- L&SI Exclusive

I half expected there to be fleets of Parka clad spotty youths on spangled scooters outside the venue. The billing alone was enough to evoke a mid sixties revival - the Who? Watford Town Hall? Surely not?

L&SI does not take lightly the privilege to exclusively witness this unique event, many thanks to Bill Curbishley (manager), Mick Double (production manager) and Tom Kenny (lighting designer) for their kindness.



The Who in warm-up mode at Watford Town Hall. Centre right, Tom Kenny's somewhat minimalist lighting rig.

In essence this was one of two warm-up venues for the Who's brief residency at the Albert Hall - but of course, it was also so much more than that. How often do less than a thousand punters get the chance to see a band of this stature in such intimate surroundings? Feeling like the David Attenborough of R'n'R, I recognised instantly the natural habitat of this wildest of beasts, a seminal rock band in a provincial shoebox.

Mick Double joined the band as Keith Moon's drum roadie in 1970, later progressing to production manager. With such a rare perspective on their career I asked him how this differs from their more usual outing? "It's a better quality experience, for both the band and the punters. And it's louder," he added half jokingly. "No seriously, it's better for them (the band) and it does stimulate them. We cut our cloth accordingly and have gone for a small sound system tailored to the venue." The Entec supplied d&b C4 system might be just that, small, tiny even, but as it transpired Double's comment was hardly a jest, it was very loud. And with the Who you shouldn't have it any other way.

Rob Collins mixes sound. "They play as if there's no PA," he exclaimed. "Mix-wise, I do more or less as I would at a bigger gig. With the Who it's always pretty raw anyway. The vocals are what I'm mainly concerned with, but this room has problems."

Shoobox you see? Daltry rather unkindly called it a shithole, and that at the end of a two-hour rampage through their lengthy repertoire, a rampage he clearly relished. If this is a shithole, and frankly the acoustics are no worse than some of the arenas they play, then let's have more of them. (Note: Watford's lively acoustics

make it a popular hall for the BBC when making classical recordings, it having precisely the qualities of resonance and liveliness not required for a loud rock band).

"With this situation then OK, the stage sound is pretty loud," Collins continued, "and the way it gets to you is a mass of confusion. The drums, for example, clatter in this room like Billy-oh. So I'll have to put a fair bit of drums in the PA to overcome this." Which worked, as did leaving the bass out.

Collins is assisted FOH by Matt Butcher. "Anyone who sets themselves on fire with Sambuca, I'm into," commented Collins of Butcher's lesser-known skills. "Coverage is not an issue, Matt and Tristram set it up and I use it. I have a Midas XL4 out front, and all my usual bits and pieces (anoraks please refer to the Who at MEN Arena L&SI Nov 2000 for 'bit & pieces')."

There existed a huge potential for overwhelming stage sound, particularly Bass guitar, but John Entwistle proved himself uncharacteristically restrained on the night. Perhaps Daltry had words; he certainly talked about it to Rob Collins during sound check when the rest of the band were absent, and in fairly rigorous, if comical, terms. Whatever the reason, Collins found ample space to balance the mix, and like Daltry, clearly enjoyed himself.

"It's good for the adrenaline - I can feel it coming off the band. Out in the house you notice it more. Because of the small size of the venue, you're part of the audience, not some little island in the middle of an arena where all you hear is the PA." Here, hear.

As with sound, the LSD supplied lighting rig was equally undersized. "For this show Bill Curbishley called, told me about it and I decided

For any occasion.

Find us at Rimini situated on our distributor stand Spotlight - Hall C5 - Stand N. | 15-120/121/126.



United Kingdom
Phone: +44 (0) 151 482 3100
Fax: +44 (0) 151 482 3111

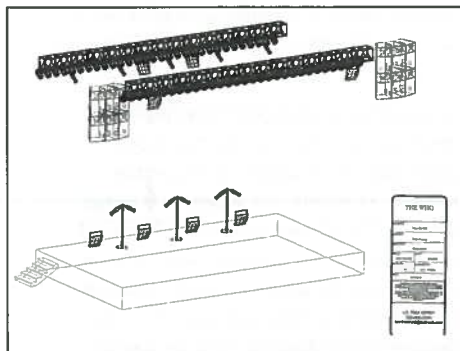
TOMCAT
LIGHTING SYSTEMS



"Daltry rather unkindly called it a shithole, and that at the end of a two-hour rampage through their lengthy repertoire, a rampage he clearly relished. If this is a shithole, and frankly the acoustics are no worse than some of the arenas they play, then let's have more of them."

on starkness," said Tom Kenny. "Pete Townsend is very theatrical - whenever I've spoken to him about it, he says things like 'when I was 18 I always imagined our songs being staged, not just sung.' I agree, they're the best cue band I've ever worked with," and Kenny has the likes of Clapton, Bowie and Plant & Page to his credit.

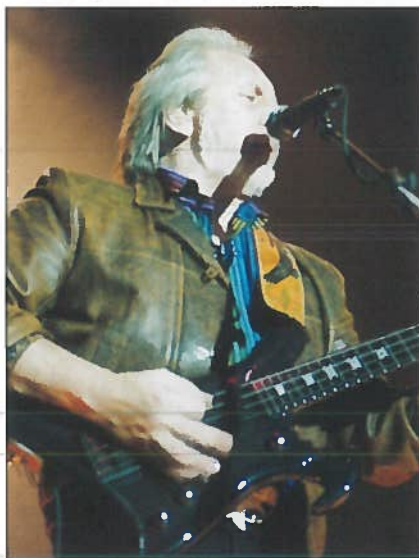
The rig was so small that crewman Scotty Duig reported that it took just 37 minutes to get it in and up. Of course, the fact that he used the



already flown house trusses did help, but it underlines just how minimal production levels were. Besides ten bars of Pars, Kenny had just three followspots, 11 silhouettes and eight Moles. "I nearly had to upgrade the software to cope with all the cues," Duig joked, referring to the Avolites Pearl desk.

Did Kenny enjoy minimalism as much as Collins? "I don't know how to describe it," he said, and then went on to provide the perfect analogy. "It's like the pilot of a Jumbo Jet going back and flying a single engine private plane. It really clears your head. In fact, even with moving lights, I find myself using less and less these days." That said, the Albert Hall design sported five arrow shaped trusses filled with Icons and Studio Colors.

Watching Kenny's approach to the show was enlightening (forgive the pun). With the exception of some Source Four profiles on sticks behind the band, Kenny had permitted Scotty Duig to use the entire rig for opening act William Topley. Where Duig felt compelled to use at least 15kW at any one time through a two



wash combination, Kenny was far more restrained, ringing the changes with admittedly darker, but more emphatic, single colours and a splash of white from followspots, or profiles up in the truss.

Two things to note: Watford Coliseum might want to splash out and buy some new bulbs for their followspots - the ability to produce a 102 Light Amber with no gel in the gate is not a recommendation for brightness. Secondly, Topley had the dubious honour of being 'Album of the Week' on BBC Radio 2 just prior to this concert. Endowed with a voice like Mississippi mud, this Bolton lad is well worth the candle; his band equally so, check out 'Feasting with Panthers' (pretentious title I know) and enjoy yourself.

Kenny's 'Lekos on sticks' as he called them, were one of two tools he used for visual dynamic, the other being Mole Mags on the floor behind the band. These are old recipe items, both threw the stage out into the audience as they say, something that's a lot harder to achieve so emphatically when you've got 100 movers and 300kW of wash lights up in the air. There's much to be said for this rudimentary approach.

"The last time they played here they used just four house fresnels," informed Kenny. "There's still someone in the band's entourage who remembers it." Unfortunately Kenny didn't have Duig patch them in to his system, which might have been fun. But then equally, Rob Collins stole himself and eschewed the ageing column speakers (line arrays anyone?) still hung up on the walls.

Frankly, they could have played under a light bulb, through a pair of WEM Columns, so electric was the atmosphere. London's oldest "Kids are alright".

Steve Moles

Look

SOLUTIONS MADE IN GERMANY

NEW

viper nt

FOG GENERATOR



See us at Frankfurt
Hall 8.0 Stand A78

The viper nt unites the current digital technology with proven technik and power.

- **Control panel**

The control panel with LED-display, simple symbols allow for easy operation.

- **Finest adjustments**

Digital technology makes fine adjustment of the pump possible. In steps of 1% the output can be adjusted from 0 - 99%.

- **DMX 512 as standard**

The viper nt can be controlled via DMX 512 and with analog (0 - 10 V). A stand-alone-running is also possible.

- **Internal Timer**

The fog time can be exactly adjusted in seconds, the wait time in minutes and the output in %.

- **General**

- Power requirement: 1300 Watt
- Powerful output
- Continuous fogging
- Can be used with every Glycol-Water-based fluid
- Made in Germany

Take a Look!

For further information please call
for the UK:



WHITE LIGHT

www.whitelightgroup.co.uk · sales@whitelight.ltd.uk

20, Merton Industrial Park
Jubilee Way, Wimbledon
London SW19 3WL
Tel +44-(0)20-8254 4800
Fax +44-(0)20-8254 4801

for all other countries:



SOLUTIONS

Fog machines made in Germany

www.looksolutions.com · looksol@t-online.de

Planetenring 12
D-30952 Ronnenberg
Fon +49-(0)511-46 37 42
Fax +49-(0)511-46 37 11



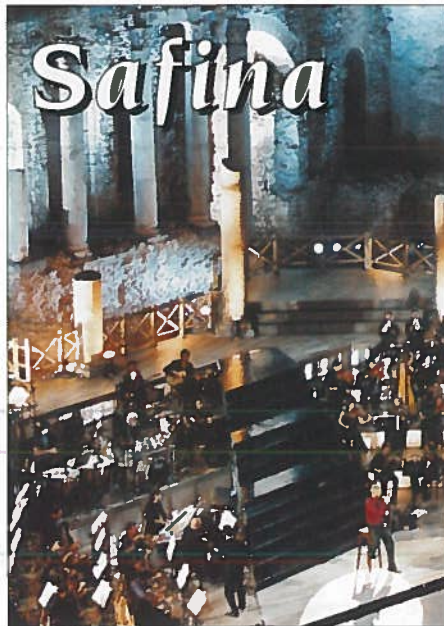
Alessandro Safina

Alessandro Safina - christened by the press as the 'singing George Clooney' - made his US television debut recently on Thirteen/WNET New York's *Great Performances: Only You*, produced by David Horn.

An opera fan from his childhood days, the Tuscan tenor has already performed across Europe in Puccini's *La Bohème* and Tchaikovsky's *Eugene Onegin*, but is also a confirmed U2 fan. With musician/composer Romano Musumarra, known for his work with Celine Dion, Safina has developed a new 'pop-opera' genre and the show, also featuring Mexico's Patricia Manterola, captured the artist under the warm Sicilian stars in the breathtaking setting of Taormina's ancient Greek amphitheatre.

The international team involved in the shoot before a live audience, included LD Patrick Woodroffe, production manager Robbie Williams and sound designer Daniele Tramontani. Woodroffe, commissioned by the PBS network in New York (for whom he's lit other classical broadcasts), explained the brief: "PBS wanted something that was classical, but exciting, which took full advantage of the natural setting of the amphitheatre. We couldn't put true backlighting in, because there were no positions on top of the old rear wall, so most of the lighting came from high three-quarter rear positions on platforms that already existed, and FOH towers constructed for the event. After that, we simply lit the ruins themselves - the key was to make constantly changing compositions that read well on camera."

In addition to almost 200 conventional fixtures, the automated units were all Coemar instruments (a combination of CF 1200 Spots,



CF HE 1200s and CF7s) complemented by Coemar's Panorama 1800W and 1200W MSR instruments, deployed behind the rear wall for silhouette work and as back spots respectively.

"The challenge in Taormina was to get enough lights in place without making the spectacular setting look too high-tech," adds Woodroffe. "Any television shoot is always the result of many different components - the venue, the artists, stage set, director - these things are never clear when you prep a show, so a lot comes together in situ. We had a very professional team on site from Rome-based lighting contractor Limelite. Project co-ordinator Eneas Mackintosh did an amazing job and Dave Hill programmed the show beautifully."

The main 72-channel Cadac R-type desk, receiving string and woodwind sub mixes from an Allen & Heath ML 5000, was manned by sound engineer Marco Lecci, also responsible for the recently finished stereo and 5.1 mix of the event for DVD release. Monitoring was a



mixture of AKG IEM and Meyer UM1 wedges controlled by a DDA Q2 and a Yamaha 02R. Tramontani comments: "Because this was live sound on what was effectively a recording set with a 30-piece choir and group, we had to successfully address the problem of sound spill, and also find a compromise between the TV production's need to keep camera sightlines as free as possible, and mine, which was to give the live audience as good a sound as possible. An element of the 20 V-dosc systems and eight subs supplied by audio contractor Agorà of L'Aquila were therefore at stage level - the rest were on towers well out on either side."

Live sound feeds were taken from the stage splitters, as were those for the Fleetwood 2 mobile, down from London to record the audio. Tim Summerhayes, engineer in charge, explained: "The decision was taken to record the orchestra both traditionally and close-mic, using DPA bug mics with a special mounting system devised by Greg Jackman. Choirs are notoriously difficult to record in an open-air situation - they're never as loud as you think they are. You also have to be aware of the visuals, but it was necessary to put a mic on each member - so we had Sennheiser headsets with MK2 mics. As the choir moved on-stage, they had to be on radio, which was a bit of a worry, but it worked very well. We filled all the 96 tracks we had and, as well as the truck's Euphonix CS 2000, we'd three extra consoles - a Mackie 32:8 and a Glen Sound desk for sub-mixing some of the ambience and a Soundcraft 32:16 sub-mixing string bugs."

Bill Morris, mobile truck engineer in charge of CTV Outside Broadcast's 10-camera OB3 adds: "It was very important to sympathetically shoot the performance, whilst maintaining the splendour of the location. We pioneered a new camera mount specifically for this production, mounting a brand new image-stabilised 86:1 Canon zoom lens on a hybrid dolly, thus enabling ultra close-up shots. Jimmy jibs were mounted on the walls of the amphitheatre allowing majestic sweeps from high above the parapets into the theatre itself."

Mike Clark

Lightfactor Sales

source & application

a complete service

High End EC-1 & ES-1

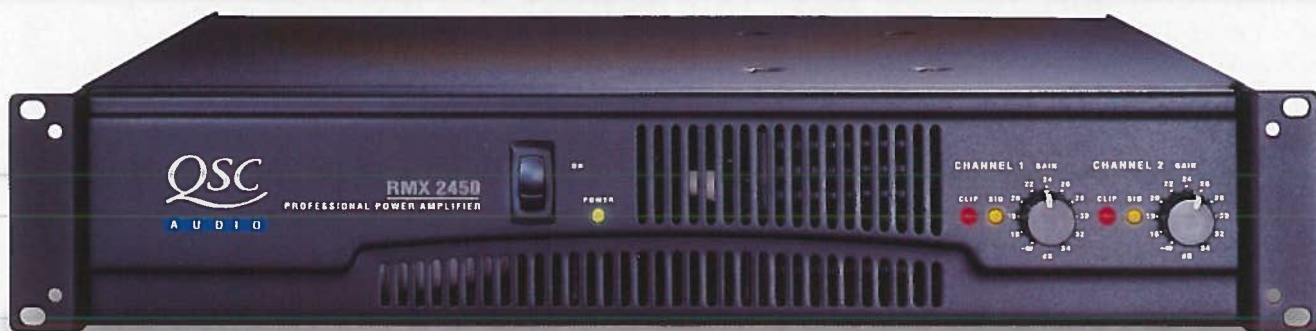
Architectural exteriors?

IP66 rated fixtures for both programmable colour flood and image projection.

www.lightfactor.co.uk

Tel: 020 8575 5566 Fax: 020 8575 8678 Email: info@lightfactor.co.uk





The better it behaves, the more punishment it gets.

Virtuous reliability, faithful reproduction and controlled power - the RMX range of amplifiers from QSC truly has it all.

Installed, or on the road, every RMX amplifier guarantees a disciplined, unblemished performance whatever you inflict upon it.

You'll also find these compact, rock-solid amps wickedly affordable.

Saint or sinner? Get to a QSC dealer and judge for yourself.

QSC[™]
A U D I O



Freephone 0800 7311990 to receive our pro audio catalogue or visit www.hwinternational.co.uk

SEE US IN FRANKFURT
HALL 5.1, STAND A&3

two modules



hundreds of options



countless applications

Not only is our new PM-100 Modular Professional Production Mixing System the most advanced we have ever made, and not only does it offer an unprecedented range of options and facilities, we've also been able to make it very simple. Accordingly, there is just one, universal input module, configurable to accept inputs from balanced microphone, stereo line and phono (RIAA) sources. There's just one output module too, and it's packed with features, including unparalleled flexibility to use external filters, processors etc, using insert sockets on crossfade A, crossfade B, mic mix and main output.

And there's more, much more. In fact, you might say the PM-100 is our latest winning formula.



Formula Sound Limited

Ashton Road, Bredbury, Stockport, Cheshire SK6 2SR

Telephone: +44 (0) 161 494 5650 Fax +44 (0) 161 494 5651 email: info@formula-sound.com



White Light Open Day



Familiar faces from all aspects of the lighting industry visited White Light's new base during a successful open day in January. The new facility in Wimbledon, London, SW19, has 35,000sq.ft of equipment storage and preparation space and 10,000sq.ft of office space, allowing all the Group members to be brought together under one roof for the first time.

"We had close to one hundred visitors," notes White Light's general manager Bryan Raven, "many of whom hadn't had the chance to visit our new building since we moved here last October. I think they were quite surprised at the difference between our old base in Fulham and where we are now - but were relieved to discover that all of the familiar White Light faces they know are still here. Albeit all with a little more room to work in!"



Amongst those at the open day were theatre lighting designers Simon Corder, Rick Fisher, Mike Gunning, Geoff Joyce, Jenny Kagan, Bruno Poet, Nick Richings; television lighting designers Bernie Davies and John Watt; production electricians Alistair Grant, Gerry Amies, Tony



Simpson; staff members from the RSC, the National, Guildhall and LAMDA, as well as many other West End and regional theatres. Other guests included representatives from White Light's many suppliers, including Mark White from ETC, Don Hindle from CCT, Francois Juliat from Robert Juliat and Claus Puggard from Martin Professional. "We did notice that we also had visitors from some of the other rental companies, presumably just checking up on how we were doing!" comments Bryan Raven.

Guided tours of the new building gave visitors the chance to see how it has allowed all of the members of the White Light Group, including White Light Hire, White Light Sales, The Moving Light Company, The Service Company, Colourhouse and Modelbox to be brought together under one roof for the first time. Many of the latest products offered by the companies, including the full range of Robert Juliat followspots and the new framing shutter version of the Martin Mac2000 spotlight, were on show - as was the fully prepared rig for the West End production of *The Full Monty*, due to leave White Light for the Prince of Wales Theatre the following week.



the number
ONE
name in
HEADSETS!

DT 100 SERIES:

-Built for the road; built to last!

DT 200 SERIES:

-Built for communication with comfort!

DT 300 SERIES:

-Built for the noisy environments in which you have to work!

beyerdynamic: the number ONE name in HEADSETS!

beyerdynamic

for more information
Tel. (01444) 258258
Freephone 0800 374994
www.beyerdynamic.co.uk
email: sales@beyerdynamic.co.uk



ATI Launches Distribution Arm with Audient Line

The ATI Group has announced the formation of a new division, ATI Group Distribution. This new division, which officially began operations on February 1, will handle the North American distribution and marketing responsibilities for UK-based Audient PLC.

Audient is well known in the industry as a respected UK designer and manufacturer of studio mixing consoles, signal processing equipment and surround sound processing components. The founding partners of DDA - David Dearden and Gareth Davies - formed

the company in 1997 and UK-based Expotus PLC took on the role of the worldwide marketing and distribution of the range of products. ATI Group Distribution will be working closely with Martin Capp, managing director of Expotus, to launch the North American distribution of the full line of Audient products, including mixing consoles, surround sound processors and graphic EQs for fixed installations.

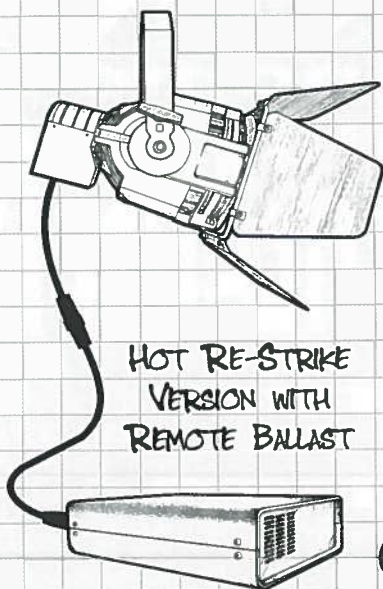
ATI Group Distribution is based at the company's new, expanded headquarter facility at 8301 Patuxent Range Road, Jessup, Maryland.



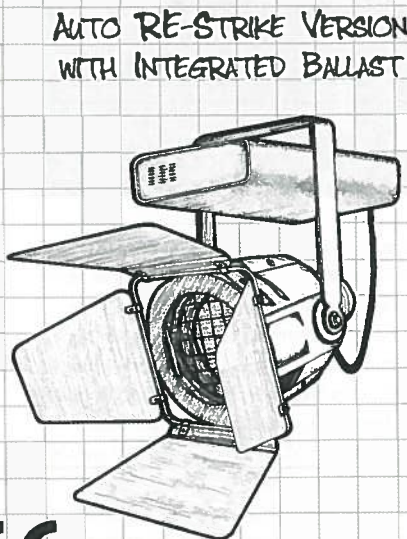
Larry Droppa, president of ATI Group (left) with Martin Capp, managing director of Expotus PLC.

PowerPAR™ 575

CONVENIENT BRIGHT LIGHTWEIGHT



HOT RE-STRIKE
VERSION WITH
REMOTE BALLAST



AUTO RE-STRIKE VERSION
WITH INTEGRATED BALLAST



A high intensity discharge lamp in a modified ETC Source Four PAR™ body. Extremely bright, daylight output in a convenient, attractive package. The output of an HMI fixture with the versatility and field quality of the Source Four PAR™.

grandMA makes UK theatre debut

MA Lighting's grandMA control system made a big impact with lighting designer Chris Jaeger at the PLASA Show last September. Jaeger, a lighting designer with 20 years' experience, was impressed enough by what he saw to follow up the demo with a more extensive evaluation of the desk at UK distributor AC Lighting Ltd's new demonstration suite in High Wycombe.

From there, AC offered to loan a desk to Jaeger for a forthcoming production of Jack and the Beanstalk at the Queens Theatre in Hornchurch, Essex. The production, directed by Matt Devitt, with set design by Dinah England, was set to run through seven weeks in December and January. Jaeger, along with the Queens Theatre's house technician Dave Starmer, who handled the programming of the show, were full of praise for the system, with particular emphasis on the system's programming facilities. "It's really straightforward," explained Jaeger, "it can be as easy or as complicated as you want to make it. We were changing the desk as we went along, setting it up to suit our particular way of working."

Once the show was programmed, the grandMA was returned to AC Lighting, who then provided a grandMA Light desk for the duration of the show. (Incidentally - Clay Paky take note - great praise was also reserved for their Stage Line fixtures which were used on the production: "When I saw the Clay Paky fixtures, I just thought they would be too small to do the job, but I was wrong: the speed at which they move and the light output and colour are very impressive.")

So, compared with other systems, how much time does the grandMA save? "Well, it's difficult to give an idea," says Jaeger, "because you always use whatever time you have available, but it gives the ability to do more in the same time, which ultimately makes for a higher quality production."



LOS ANGELES
10643 Glenoaks Blvd.
Pasadena, CA 91331
USA
Tel: +1 818.899.8818
Fax: +1 818.899.8813

LONDON
2 Commerce Road
Brentford, Middx TW8 9LR
UK
Tel: +44 (0)20.8560.9652
Fax: +44 (0)20.8560.1064

NEW YORK
100-D W. Forest Avenue
Englewood, NJ 07631
USA
Tel: +1 201.541.9292
Fax: +1 201.541.8448

BEIJING
Rm 309, Bldg 6
Sanliun Nanlu
Chaoyang Dist
Beijing, China 100027
Tel: +86 10.6595.8885
Fax: +86 10.6591.2623

NEW

Painting with Light

One source, infinite colours – the choice is yours.

exciting

state-of-the-art luminaires featuring 80 powerful high efficiency LEDs



sexy



rich



glamour



intense



funky

refreshing

no lamp to change, each colour changer has exceptionally long life LEDs



sleek



modern



vivid



lustrous



beautiful

calming

endless RGB colour mixing, effortless crossfading, infinite colour palette



mellow



cool



tranquil



pure



dreamy

Introducing the exciting new colour changers featuring state-of-the-art LED technology

ChromaRange™

PLEASE CONTACT US FOR FURTHER INFORMATION OR TO ARRANGE A DEMONSTRATION

PULSAR

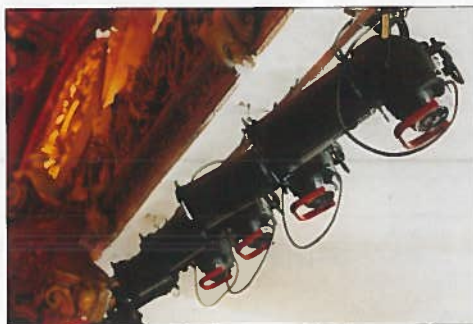
Designed and manufactured by Pulsar Light of Cambridge Limited

Henley Road • Cambridge CB1 3EA • England • Tel: 44(0)1223 366798 • Fax: 44(0)1223 460708 • sales@pulsarlight.com • www.pulsarlight.com



Stagecraft has recently been involved in a major development at the New Theatre Royal in Portsmouth. The company supplied lighting and sound equipment to the venue and is also planning a programme of disabled workshops at the theatre.

In 1972 a fire destroyed a large part of the backstage of the Victorian theatre and the refurbishment provided an opportunity to redesign the theatre to provide greater accessibility for all theatre-goers.



Stagecraft Makes Technology Accessible

One of the key areas to be developed was the lighting and sound systems and thus Stagecraft supplied a range of technical equipment, including Martin intelligent lighting, Selecon Pacific luminaires, Compulite Luna moving yokes, Zero88 lighting control and dimming, and a range of audio equipment, including Tannoy speakers, Shure microphones, QSC amplification and Allen & Heath control.

Grant Bales-Smith of Stagecraft worked closely with the New Theatre Royal to develop the accessibility of the Theatre. "We have a strong relationship with

the team at the theatre and have worked with them through installation and initial training. We are on hand to offer technical support and advice and look forward to holding the disabled workshops where we'll be able to see the real flexibility and accessibility of the equipment."

The workshops are aimed specifically at those with learning difficulties and those who are mentally or physically disabled. The team at Stagecraft will be teaching those who take part in the workshops about the benefits of using the equipment, demonstrating its capabilities and offering them a unique educational experience.

VL5s Stolen from EML

During the night of Wednesday 23 January, a complete set of 32 Vari-Lite VL5 wash luminaires were stolen from a trailer belonging to Belgium-based EML Productions.

The fixtures were en route from Austria to Belgium, and it is believed that the theft occurred somewhere in Germany. The set included 32 VL5 luminaires with standard cabling, smart repeaters and truss hooks; they were packed in six six-hole black plastic Vari-Lite cases and two grey plastic Vari-Lite cable cases.

EML Productions are offering a reward of 12,500 Euro for information which helps them recover the equipment. Contact Dirk Bosloirs at EML Productions NV in Brussels - telephone: +32 16 61 71 18 or E-mail: dbosloirs@eml-productions.com

Scroll Express

If you need:

- Urgent scrolls for Chroma-Q, Wybron, Rainbow, Diafora, Compulite...
- Cut colour calls
- The best price

Call us now!



Providing world class lighting solutions for next day delivery

A.C. Lighting Ltd.
Sales & HQ - High Wycombe
Tel: +44 (0)1494 446000
Fax: +44 (0)1494 461024
info@aclighting.co.uk



Northern Sales - Leeds
Tel: 0113 255 7666
Fax: 0113 255 7676
acnorth@aclighting.co.uk

Triflite



Custom Built Flight Cases



Trifibre Containers International Ltd
tel: 0116 269 8989 fax: 0116 269 8959
website: www.trifibre.co.uk

Emphasis™. The only way to light.



NEW from ETC.

Lighting plans, hook-ups and setting plots, renderings, softpatches and personalities, cueing, track sheets and magic sheets — the time-consuming process of lighting a show.

ETC's new Emphasis™ lighting control system does the work for you and lets you get back to the real art of lighting. From your first idea to opening night and beyond. One patch, one plot, one package. Emphasis is the first truly seamless fusion of the world's best-selling line of control consoles with the world's leading lighting-design software — ETC's powerful Expression™ and Express™ marry the New WYSIWYG.™ No other system can do what Emphasis can.

Make this your new Emphasis: revolutionary lighting control.

That's ETC.

See us on Stand D65 at ProLight+Sound and at SIB, Hall C5, Stand 105





UKOK is Go

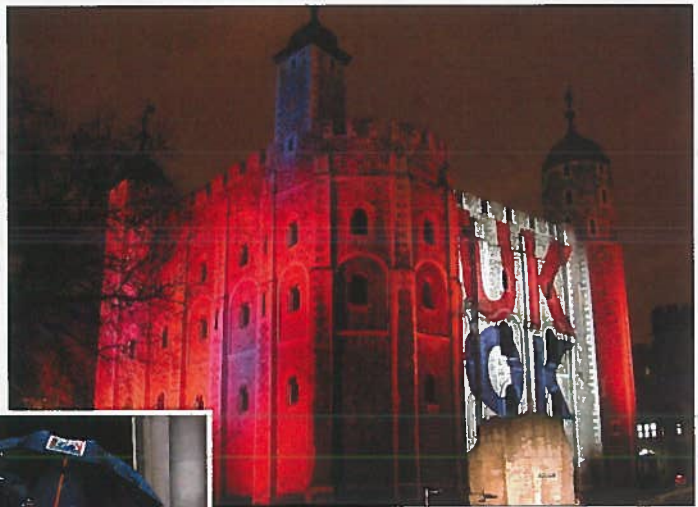
White Light and E\T\C UK helped launch the British Tourist Authority's (BTA) new UKOK initiative in spectacular style by illuminating and projecting onto the Tower of London for a VIP press conference. The international marketing campaign is aimed at encouraging tourists and holidaymakers back to Britain in 2002.

The Tower has seen a succession of celebrity inmates throughout its chequered history, but this time the VIPs attending the breakfast press conference were free to leave. They included the Rt Hon. Tessa Jowell, Secretary of State for Culture, Media and Sport, David Quarmby, Chairman of the British Tourist Authority, Dr Kim Howells MP, Minister for Tourism and Lord Marshall, Chairman of BA.

White Light's Mike Crossman project-managed the event. His brief came from the BTA, who wanted to architecturally light the Tower in a show-lighting style, and also feature their logo large and clear. Crossman approached lighting designer Leigh Porter - one of several lighting designers based at their Wimbledon premises - to create the lighting scheme and E\T\C's Paul Highfield to handle the projection elements.

Leigh's brief was to light - in a combination of red, white and blue - the South face of the tower and the two towers either side of the East face. The central part of the East face would then be used for the logo projection. Leigh wanted a

Pictured below, left to right, are Paul Highfield (E\T\C UK), Stuart Crane (White Light), LD Leigh Porter, lighting operator Jon Coventry and Mike Crossman (White Light).



colour changing luminaire for the job and decided on using Martin MAC 600 moving heads. Once a site visit and lighting tests proved that the units were right for the job, the 17 fixtures were prepped and pre-programmed in White Light's warehouse. On site, the 14 MACs lighting the South face were rigged on scaffolding frames, re-focused and protected with waterproof coverings. The three illuminating the East face towers were enclosed in weatherised domes. The weather-proofing was essential, and the UK weather performed as predictably as ever, liberally tipping it down on the morning of the press conference!

The MACs were hooked into a Strand 520 console operated by Jon Coventry, located at the Raven Gate, and the Tower electrical department provided a three-phase 63 amp supply, run via White Light distros to each of the scaff towers and dome positions.

E\T\C supplied a 6K xenon PIGI projector which easily covered the surface area of the Tower's East face with the UKOK logo. The projector was located inside one of E\T\C's vans, with power again supplied locally. E\T\C also carried out a full-scale on-site test using various versions of the new logo, which enabled the BTA to select the most suitable image for the launch.

UKOK is a multi-million pound international marketing campaign by the BTA aimed at stimulating overseas visitors to travel to Britain this year and to act as a catalyst to lead the British tourist trade into recovery.

sales@alstage.co.uk
www.alstage.co.uk

Aliscuff

In the world of lighting & sound, it's not who you know - it's how well you're connected!

T: +44 (0) 20 8808 5005 F: +44 (0) 20 8801 9851

LGH Rigging Services
puts safety first

Hire, Sales & Training

www.lghrs.co.uk
Tel: (020) 8215 1240

Rest on Ramps

Ra'alloy manufacture a complete range of non-slip ramps in standard sizes or to customers own specifications. Please call us for further details.

Ra'alloy Ltd

Head Office: Ra'alloy Limited
Gorsebrook Road, Wolverhampton
West Midlands, WV10 6JD
United Kingdom
Tel: +44 (0)1902 420111 Fax: +44 (0)1902 421039
E mail: sales@raalloy.co.uk
Website: www.aluminiumramps.com

MAKING EFFICIENT COMPANIES WORK BETTER!

Child's play.



THE ART OF ENGINEERING...
...IS TO MAKE THE COMPLEX SIMPLE

They said it couldn't be done. They said it was impossible to produce Heavy Fog Effects using only fog fluid and single phase power in a compact unit. At Jem our engineers are working around the clock to simplify your life...

Introducing the Jem Glaciator Heavy Fog Machine.

No ice. No gas bottles. No 3-phase power. No mess. No fuss.
The Glaciator is revolutionary in its simplicity - just plug in and fog.

They said it couldn't be done, but the engineers at Jem think differently.

**Jem**



Conference Launched to Cover Stage Technology

The international conference on Theatre Engineering and Architecture 2002 will take place between 16th and 18th June 2002, in London.

Focusing on stage technology in its widest sense, and covering all types of performance venue, this is the first international conference structured to attract theatre technicians, architects, consultants, designers, engineers and acousticians, as well as administrators, building owners and project managers. The conference includes discussion on the current trends in stage machinery and other stage technologies, alongside debate about the types of, and need for, new buildings. The implications of new and existing regulations are to be examined, as well as the process of designing and constructing one of the most complex types of building. The conference, which is being presented by the Association of British Theatre Technicians in conjunction with its Industry Supporters Group and the Organisation Internationale des Scénographes, Techniciens et Architectes de Théâtre, is being sponsored by the international stage engineering industry.

www.theatre-event.com



Aluminium ramp specialist Ra'alloy relocated to new premises in Wolverhampton in early January. Rob Marris, MP for Wolverhampton South West, officiated at the opening, which also coincided with the launch of the company's new stage system - Rapi-Stage.

New Facility for Ra'alloy

Ra'alloy was formed in 1995 in a small workshop in Fordhouses, Wolverhampton, to fabricate aluminium products. One of its early successes was a special anti-slip aluminium ramp system for trucking and disabled use, which has since earned worldwide acclaim. The £350,000 facility, part-funded by a Government Enterprise grant, will allow the company to develop its business further.

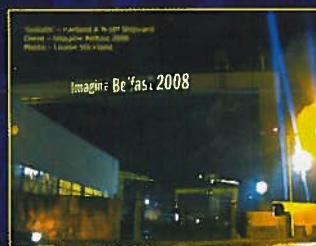
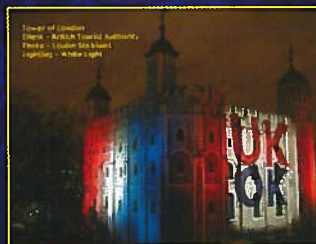
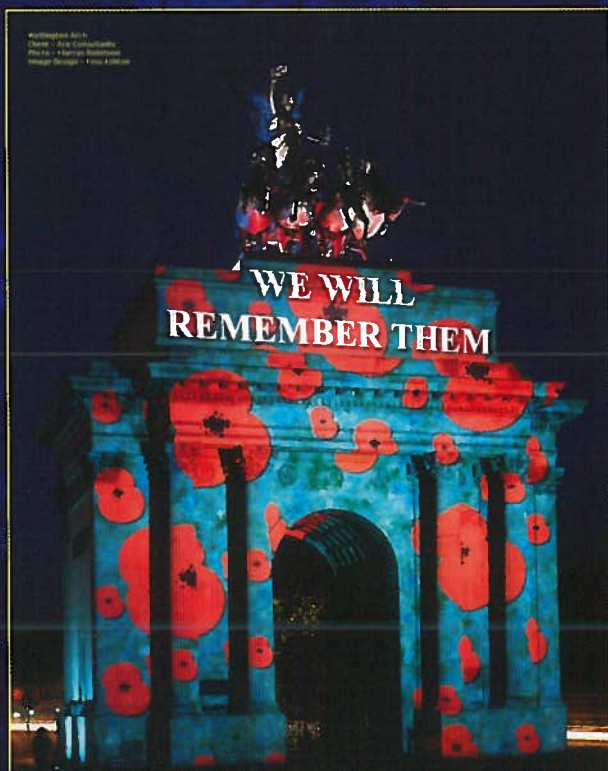
Part of that objective will be met by Ra'alloy's new modular aluminium stage system - Rapi-Stage - which incorporates integral truss supports eliminating ground support, and allowing virtually any shape platform to be erected. Designed in conjunction with a temporary staging structural engineer, and within the guidelines set by The Institute of Structural Engineers, the system complies with all loadings and maintains lateral stability. Rapi-Stage can be used as an extension to an existing stage or as a freestanding structure complete with an Ra'alloy truss and roof system, which is due for launch shortly.

Ra'alloy's founder Graham Corfield (left) is pictured with Rob Marris MP at the official opening.

E\T\C UK Ltd

- The High Power Projection Experts -

We can transform
any large surface
with movement and light.



Suppliers of the PIGI System
Xenon & HMI Projectors
Image Design & Creation
Scroll & Slide Production
for all projector types
Technical Support & Consultancy
Onsite Support



Brochure & video available from:
E\T\C UK Ltd.

Unit 2, Millfarm Business Park,
Millfield Road, Hounslow, TW4 5PY
tel: (00 44) 208 893 8232
e-mail: info@projecting.co.uk
website: www.projecting.co.uk

A WORLD OF CHOICE FOR LIVE SOUND



AKG • ALESIS • AMPETRONIC • ASL • AUDIO TECHNICA • BEYER • BOSE • BSS • CARLSBRO • CITRONIC
CLOUD • CROWN • DAS • DENON • ELECTRO-VOICE • FORMULA SOUND • INTER-M • JBL • MACKIE
MARANTZ • MARTIN AUDIO • NEXO • PHONIC • PIONEER • QSC • RANE • RCF • ROLEC • SABINE
SENNHEISER • SHURE • SONY • SOUNDCRAFT • SOUND RANGER • STANTON • SYMETRIX • TANNOY
TECHNICS • TOA • TRANTEC • VESTAX • YAMAHA

FOCUSED ON DISTRIBUTION TO THE TRADE



Leisuretec Distribution Limited
Leighton Buzzard LU7 4UH

www.leisuretec.co.uk

Tel: +44 (0) 1525 850085

Fax: +44 (0) 1525 852285

sales@leisuretec.co.uk

SPECIAL EFFECTS • WORLDWIDE



The Craft of Bytecraft

Once a small lighting service company, Bytecraft has grown over the last 17 years to become one of the most significant players in the Australian industry, and has, in the process, earned itself a worldwide reputation for its audacious approach to everything it undertakes. Andy Ciddor reports . . .

In common with many other companies in the entertainment industry, Bytecraft owes its existence to dear old Strand Electric. During Strand's sojourn as part of the Rank organization, it operated in Australia as part of Rank Electronics, a company that manufactured and marketed everything from telecine chains and stage machinery to consumer electronics and language laboratories. Amongst other projects, Rank Electronics had won the contracts to supply the stage lifts and wagons, lighting and audio to the Victorian Arts Centre (VAC), in Melbourne. The project was in the process of completion and handover in early 1984, when that well-muscled chap with the big gong decided to dispose of many parts of the organization, including the theatrical equipment division.

As the new owners were not interested in purchasing the warranty and maintenance part of the project, Rank contracted their VAC project manager, Ted Fregon, to take on the task. Fregon, an electronics engineer who had originally been hired as the project engineer for the VAC stage machinery, undertook this work through his one-person company, Fregon Systems. He then hired two other former Rank Electronics employees: audio service technician Peter Bay and stage machinery technician Joe Krnjak. To service the lighting facilities he contracted the one-person company, Data In Data Out, run by yet another former Rank Electronics service technician, Stephen Found.

Almost as soon as the VAC opened for business, shortcomings began to reveal themselves, most noticeably the scarcity of dimmer channels and the flexibility of the electrically-powered flying system. Designed just before the wide acceptance of the concept of dimmer-per-circuit, the theatres were facing major problems with repertory turnaround due to the time required for lighting repatches. Alan Siggers, lighting master at the VAC, approached Fregon and Found to see if they could develop a dimmer for the centre's specific requirements. Thus, in late 1984, the duo formed Bytecraft (a name they arrived at while driving back from a service call in the country) and accepted an order, for delivery in early 1985, of over 800 channels of a dimmer that did not yet exist.



ground-breaking Bytesize dimmer developed for this project was probably the world's first all-digital dimmer; certainly the first to feature an LCD screen and menu system for configuration and fault reporting. Its compactness, low acoustic noise, high rise time, fade curve selection, internal soft patching and full fault reporting were an attractive combination, and thousands of racks have now been sold.



Clockwise from top left - Ted Fregon with the PLASA Award for Product Excellence for Bytecraft's VST technology; Stephen Found in the company's hire department; the VST dimmer system; the StatusVi scenery automation system.

Christmas 1984 saw Ted Fregon designing his first dimmer, the Intelligent Dimmer System (IDS) - probably the first dimmer ever made with full fault reporting. The IDS supervisor module monitored thyristor health, mains supply, control signal presence, circuit breaker status and lamp status. The status of all dimmers was displayed on a screen in the lighting control room. 17 years later, those dimmers are still toiling away, almost invisible due to their reliability.

The IDS went on to become the dimmer of choice for virtually every major performing arts and production facility in Australia. In 1986, over 1,000 channels of an extreme-reliability version of the dimmer, the IDS Ultra, were supplied to the Sydney Opera House to replace its ageing Siemens system. The IDS formed the basis of a range of control products that have seen more than 8,000 channels supplied to venues throughout Asia, Europe and Australasia.

When Brisbane hosted Expo 88, Bytecraft won contracts to supply lighting control for the expo park and the main public stage area. To meet this requirement they produced a portable/temporary dimmer suitable for use in both architectural and stage applications. The

At the close of Expo 88, Bytecraft not only successfully tendered to buy back all 100+ of their Bytesize racks, but also won the tender to purchase most of the Expo's other lighting equipment, which formed core of Bytecraft's new hire and production operation. In the years that followed, Bytecraft went on to acquire the lighting assets, and often also the crews, of many of the country's largest production companies. The list includes Complete Production Services, Greater Union Village Technologies, Gearhouse Australia and most recently Jands Production Services. Bytecraft Entertainment is today the largest lighting production company in the Southern Hemisphere, with an inventory that includes over 1,000 moving lights, tens of thousands of conventional luminaires and the complete systems infrastructure that is required to suspend, rig, power, control and operate them.

In 1988, when the time came to supplement the electric winch system in the VAC's State Theatre (the centre's main opera and ballet house), Bytecraft was approached to come up with a winch control system for the hydraulic flying system that was under development. The company again found itself with a contract to supply a product that did not exist. The brief specified that the system must be able to work like manual flying, with the possibility of as many operators as there are lines. Bytecraft's response was State, a system based on a central Unix server, which is optically linked to an infinitely configurable arrangement of remote line-controllers. The State system is now to be found in major centres on all continents.

When *Phantom of the Opera* came to Australia, in addition to supplying the lighting system, Bytecraft also supplied the scenery automation, based on their State system. When the production took to the road, they developed Status, a simplified and less-configurable version of State. Not only did Status run *Phantom* in Australia, it was also used on the Korean production. Status has since been seen running

News Round-Up



scenery automation on big productions throughout the world.

Howard Eaton (of H.E.L.L.) came to Melbourne to supervise some aspects of the Australian production of *Phantom*, and saw Bytesize dimmers in use on the show. He was so impressed with them that he convinced Bytecraft to build a rack-mounting version of the dimmer and took the first 30 of these racks back to the UK with him.

Development of products has continued unabated. The 25-person R&D team has gone on to produce such innovations as VST (Variable Sinewave Technology), the world's first theatrical sine wave output electronic dimmer (which won the PLASA Show Award for Product Excellence in 1998). Their work in scenery automation continues with the Medusa patch system, a retro-fit intelligent underload/overload sensor, a familiar MS Windows interface for the winch controllers, and compliance with IEC 61508 safety standards for automation. The most recent dimmer to emerge from the Bytecraft Automation lab is the APC (Advanced Phase Control) dimmer which uses intelligent switching management to minimize the current



The headquarters of Bytecraft's entertainment division

through the inductive chokes. This increases the dimmer's efficiency and eliminates the need for forced cooling, without sacrificing its very quiet 500-microsecond rise time.

Bytecraft built a network of service contracts with major Australian production facilities, based on their understanding that productions needed to go on-stage or on-air, no matter what. While developing this aspect of the company's operations, Bytecraft were approached by an engineer who was having some difficulties commissioning a totalisator system (an off-course betting system) based around machines using Motorola's new 68000 microprocessor. As Found and Fregon had been doing some development work with that chip, they trekked off to where the system was being installed, and

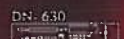
were able to offer substantial help. The upshot of that trip was a contract to maintain the entire network of betting machines.

Like the production industry, the gaming industry expects problems to be solved promptly, whenever and wherever they occur. Today, over 100 Bytecraft Systems' staff maintain many thousands of machines that include systems to dispense everything from lottery tickets to licences and tollway passes.

Bytecraft's growth has been so rapid and so diverse, that on February 14th, 2001, it was reorganised into three separate companies: Bytecraft Automation under the guidance of Ted Fregon, and Bytecraft Systems and Bytecraft Entertainment under Stephen Found. Although there is still great synergy between the divisions, the company had become too complex to run efficiently as a single entity. When I asked what was next in the development of Bytecraft, Stephen Found's response was intriguing: "It won't be what you're expecting: we're using some left-brain thinking, so watch this space!"

電音 DENON Professional Audio Brand

Essential Club Kit...



Hayden Laboratories Ltd

Hayden House, Chiltern Hill, Chalfont St Peter, Bucks, SL9 9UG United Kingdom T> 01753 888447 F> 01753 885892 E> info@haylab.co.uk

**A single white light
can be good**

**A single coloured
light can be better**

**A light that can be sixteen colours -
now that would be something**



Fit a Chroma-Q colour changer to your fixture,
then change to any of 16 colours in less than two seconds



A.C. Lighting Ltd
Sales & HQ - High Wycombe
Tel: +44 (0)1494 446000
Fax: +44 (0)1494 461024
info@aclighting.co.uk

www.aclighting.co.uk

Northern Sales - Leeds
Tel: 0113 255 7666
Fax: 0113 255 7676
acnorth@aclighting.co.uk





Birmingham's burgeoning Broad Street is fast becoming one of the busiest areas of the city, its popularity not unrelated to the large number of pubs, clubs, bars and restaurants which populate the area. In early December, Broad Street welcomed a new arrival in the form of Living Ventures' latest Living Room bar/restaurant.



Latest Living Room Opens

The contract for the installation went to Liverpool-based Adlib Audio. With two distinct divisions, the company is equally at home in the installation arena as it is on tour with some of the world's leading bands. Its own-branded equipment keeps company with some of the top commercial names in pro audio, and running kit in its rental fleet enables it to evaluate its suitability for fixed install.

Which is how the company became familiar with the BSS FDS-334 and FDS-336 Minidrives. Adlib have long been devotees of BSS' famous Omnidrive family and so when they won the contract to fit out a series of the Living Room bar/restaurants for fast-expanding Living Ventures Ltd, the proprietary digital loudspeaker management system went straight into the specification.

Adlib managing director, Andy Dockerty told L&SI that the company's first Living Ventures project had been on its own doorstep at the up tempo Mosquito Bar and The Vampire Suite, a private members bar in Liverpool six months ago. "We'd previously done a lot of hires for the owners," said Dockerty. "But this was the first place we used an FDS-334 and FDS-336 - and it was on the strength of this that we won the contract to fit out the Living Rooms."

The 10 outputs afforded by the combination of a 334 and 336 fits the model perfectly for a multiple sourced system offering, sequentially, hard-disk delivered background music system, a blues pianist and a full-on DJ session. In Birmingham this services three zones - conservatory, restaurant and bar - but in Liverpool and the newly-converted Manchester, the units are multi-floor/multi-zone.

"All the internal programming is set up for the hard drive machine," notes Dockerty. "I have a separate EQ and compression in line one for the DJ system and one for the live artists system, which are run independently into the zoner, and then into the Minidrives." In Birmingham three outputs are assigned to running various Adlib Audio AA15 SBP subs, with different crossover settings applied to the three zones. "We'll set the crossovers accordingly because we have different boxes for different programmes for different areas," says Dockerty. "The whole design is carefully split up and thought about, and sound mixers are provided for DJ and band use respectively." The Adlib AA81 - a 1in compression driver on an 8in horn flare - has been custom-designed for The Living Room by Adlib's Dave Fletcher, who believes that it is the passive networks in this style of cabinet that are so critical.

Smithfield is the next area to benefit from the arrival of The Living Room concept with a new venue slated to open this month; Islington and Leeds look set to follow.

Installed Sound from D.A.S.

Everything you need to solve the problems of permanent sound installation.

- Exceptional sound quality.
- Easily adaptable to complement the decor of any venue.
- Multi-angle design permits tight cluster arrangements.
- 16 integrated rigging points.
- Heavy duty steel grilles.
- Broad range of applications: from bars and restaurants through to theme parks and stadia.





L&SI Eye

Blind Assassin

Actor David Soul has accepted a not inconsiderable sum in libel damages following a newspaper review of his *The Dead Monkey* at the Whitehall Theatre. The Daily Mirror's Matthew Wright described it at the time as "without doubt the worst West End show I have seen" - except it turned out that Wright hadn't actually seen the show himself. Tut tut.

Chilly Willy

Those well insulated people of northern Sweden plan to build a replica of Shakespeare's famous Globe Theatre out of ice. Once built, the indigenous Sami people intend to use the theatre to stage a production of *Hamlet*. The cost? no change from £500,000.

Statutory Noise Nuisance?

Not quite the tag the musical *Umoja*, which opened in London's West End recently, would have hoped for, but it's the one it's now got after nearby residents claimed the noise of the show's drumming is impossible to live with.

Time Travel Brought to Life

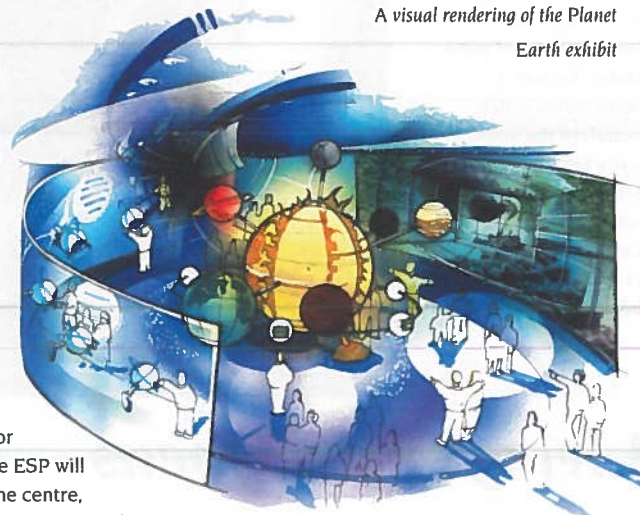
Sarner and ESP have combined

resources to provide a creative solution for Liverpool's new multi-million pound International Astronomy and Space Centre (IASC).

Sarner, which has recently been bought-out by two of its directors, Michael Bennett and Ross Magri, will be responsible for the design and production of special effects for the new visitor attraction, while ESP will project-manage the fit-out of the centre, bringing life to the dramatic designs - from the spectacular hanging celestial sphere, through to the 'Journey To The Stars' space-time machine.

IASC, which is part of the continued regeneration of Liverpool's Wirral district, is scheduled for completion in Easter 2003.

A visual rendering of the Planet Earth exhibit



Visitors will be taken on an interactive journey through time and space using multi-sensory technology, simulated time travel, projection and special effects.

SAFE

INNOVATIVE

Sydney Opera House (Australia), Opéra de Lyon (France), Hong Kong Cultural Centre (Hong Kong), Royal Court (UK), Melbourne Concert Hall (Australia), Le Châtelet (France), TNS Strasbourg (France), Juilliard School (USA), El Dorado (USA), Yuen Long (Malaysia), Netherlands Dance Theatre the Bay (Singapore), Victorian Arts Sydney Casino (Australia), Penn State (USA), Francisco Opera House (USA), Suita Shi (Australia), Théâtre de Valenciennes The Playhouse (Australia), Phantom of the (Australia), Sisterella (Australia), Op Zoom (Netherlands), Theatre Lliure (Korea), Shenzhen Cultural Centre (China), National Grand Theater (China), Hong Kong Cultural Centre (Hong Kong), Royal Court (UK), Melbourne Concert Hall (Australia), Le Châtelet (France), TNS Strasbourg (France), Juilliard School (USA), El Dorado (USA), Yuen Long (Malaysia), Malaysian National Theatre (Netherlands), The Esplanade Theatres on Centre (Australia), Theatre 1200 (Japan), Kwai Tsing (Hong Kong), San (Japan), Melbourne Crown Casino (France), Stonecutter's Island (Hong Kong), Opera (Australia), Beauty & the Beast Comédie des Champs Elysées (France), Bergen (Spain), Sori Arts Centre (China)



BYTECRAFT
Everything is possible

RELIABLE

KNOW-HOW

MAKE THE MOST OF OUR EXPERIENCE

Bytecraft Automation Pty Ltd

ABN 16 723 402 699
ACN 061 502 529

23-27 Fonceca Street, Mordialloc VIC 3195, Australia
Telephone: +61 3 9587 2555
Facsimile: +61 3 9580 7690
Email: info@bytecraft.com.au
Web: www.bytecraft.com.au

VCA desks for the real world

The ML consoles embody our mission to make previously exclusive technologies affordable to people on a real world budget. These mixers have changed the rules for VCA desks, forever raising the pro audio industry's price / performance expectations.

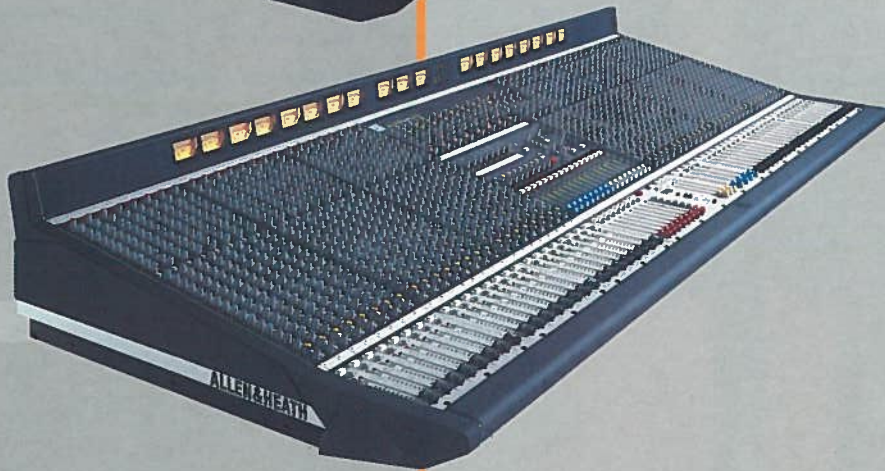
→. ML3000



→. ML4000



→. ML5000



ML3000 / ML4000 / ML5000 features:

8 VCA Groups / Giving you control of any number of channels from a single fader, including control of all post fade sends

Front-of-house / Monitors / Group / Aux mode switches let you use the MLs as full function front-of-house mixers or full function monitor consoles

LCRplus Panning / Paired blend and pan controls on channels and groups allow you to position signals across the C and LR busses

Advanced Mic Preamp / The ML pre-amp uses a new custom made potentiometer and in addition to achieving the lowest possible noise and THD figures, we've eliminated inter-modulation distortion - something that makes many other products sound harsh

↑

Relative pricing:
ML5000 / ML4000 / GL4000 / ML3000 / GL3300 / GL2200

ALLEN & HEATH

Allen & Heath Limited,
Kernick Industrial Estate,
Penryn, Cornwall TR10 9LU
t : +44 [0]870 7556250 f : +44 [0]870 7556251
i : www.allen-heath.com e : sales@allen-heath.com

The audio quality is up there with the greatest.
The pricetag isn't.

TECHNOLOGY AND DESIGN FOR LIGHTING, SOUND AND FURNISHING

DESIGN

LIGHT

SOUND



SIB

18th International Exhibition of Equipment and
Technology for Discotheques, Dance Halls,
Rental Firms and Theatre

Rimini - Italy

24/27 March 2002



RIMINI FIERA



APIAS

New Exhibition Centre

Italy - 47900 Rimini - Via Emilia, 155

Tel. +39.0541.744111 - Fax +39.0541.744200

www.sibinternational.com



beyerdynamic Launches Installed Sound Division

West Sussex-based pro audio distributor beyerdynamic has introduced a new division dedicated to promoting its expanding range of products for the installation and sound contracting markets.

Headed by beyerdynamic's Bob Harrison, the new division will form an active part of the company's existing operation and will focus on providing a full range of standard audio products, including speakers, amplifiers, microphones, signal processing equipment and integrated digital audio systems for installations across a variety of applications.



Bob Harrison, who heads up beyerdynamic's new division

beyerdynamic's product portfolio not only incorporates the company's own wired and wireless microphones, headphones and conferencing systems, but also features DSP-based signal processing from XTA, automatic mixing and noise masking from Biamp, and 100V line and low impedance amplification and speaker products from dB Technologies. A distribution agreement has also recently been signed with Cue s.r.o of the Czech republic for its range of media management control systems.

VFG Sold to Management

The film and TV equipment hire business of VFG Plc has been bought from administrative receivers KPMG by a management team backed by HBoS and ING Barings. In a deal worth £15million, the new company - VFG Hire Ltd - comprises the operational business of VFG Plc, together with its principal assets and liabilities.

VFG Plc went into administrative receivership on 20 December 2001, having found itself over invested in new equipment. The new operation will operate as a private company, and is headed by executive chairman Bill Gore who has been advising the company for some time on the restructuring process. By mutual agreement Richard Dunkley steps down as managing director. Bob Sutcliffe will be joining the board as a non-executive director and Keith Long will be its new finance director. Graham Hawkins and Bill Summers remain as heads of the camera and lighting operations respectively.

The company is also taking the unusual step of assuming responsibility for many trade supplier arrangements entered into by VFG Plc prior to administrative receivership. See also No Comment, page 64

Paul Twist

Paul Twist, a figure well known to many in the industry, died recently in the United States. Paul had been working as a freelancer for Colin Hammond at Meteor Lighting in Huntsville, Alabama. His earlier career had seen him working in sales at Chappels (sheet music), Selmer (musical instruments) and Cadburys-Schweppes. He then spent four years in the late seventies with Optikinetics where he was the company's first ever export sales director. He then left to form his own sales company, before subsequently moving on to Meteor Lighting.

Colin Hammond told us: "I will remember Paul as being the most enthusiastic, upbeat individual that I have ever known. He was gracious and kind, forever bubbling with energy, and in his own words, he never had a bad day." Paul's funeral will be held at midday on Friday 22 February and the burial will follow a funeral mass at Corpus Christi Catholic Church in Henfield, Sussex.



STAGE ELECTRICS

Lighting

Audio

Control

Power
Distribution

Staging

THE CENTRAL LONDON HIRE BASE

ONLY 1 MILE FROM
THE WEST END

284 Waterloo Road London SE1 8RQ

Tel: 020 7620 3000 Fax: 020 7620 1555

www.stage-electrics.co.uk

Hire • Sales • Service • Installation



People on the Move

At **Celestion's** HQ in Ipswich, **Richard Vivian** has been promoted to marketing manager, Professional Product Division. Vivian joined Celestion from the R&D department of Turbosound three years ago. He will now be taking on marketing responsibility for the entire Professional Division, which includes the growing range of Professional Component (raw-frame) loudspeakers.



Lots of changes at **Stage Electrics**, including a number of new faces: there have been promotions for **Chris Patton** and **Andrew Suggs**. Patton has been promoted to work alongside Matt Lloyd in developing the company's West End and UK touring markets, and will relocate from the Birmingham office. Suggs, meanwhile, has been promoted to branch account handler at the company's busy Bristol customer service centre. **Tony Rhodes** has joined the company as business development manager at the NEC Branch. Rhodes was most recently general manager of Prolyte UK. Another new face is that of **Ben Teale**, who joins the company as business development/project manager. Working out of Stage Electrics London Office, Teale will be concentrating on the exhibition market.

Nodd McDonagh, operations director of the **Ministry of Sound** is parting company with the organisation after eight years. The news comes after the departure in November of Hector Dewar, chief operating officer of the group, both moves as a result of what Ministry insiders call "a strategic reshuffle". Nodd oversaw the club operations originally as general manager, then rising to operations director as the group began to expand. Nodd doesn't intend to let the grass grow under his feet and has an organisational role at the 2002 Glastonbury Festival already lined up.

Richard Crowe has been appointed managing director of the Myriad Group's **Creative Staging** subsidiary. Crowe, who was previously the sales and marketing director of the company, has been with Creative Staging for the past seven years. He will also play an active part in the future development of the whole Myriad Group. The Group recently restructured its nine business areas under the four main names of Myriad, Creative Staging, MAP and Visual Systems.

German loudspeaker manufacturer **d&b audiotechnik AG**, has appointed **Frank Bothe** as R&D director, **Simon Johnston** as marketing director and **Peter Tongue** as sales director. **Uli Mall**, previously the director in overall charge of these three departments, will now concentrate on business development. The moves reflect the growth of the company which now has sales offices in eight countries and sales partners in more than 30 countries worldwide. **Kay Lange**, finance and administration director, and **Rolf Belz**, production and purchasing director, will continue in their current positions.

Giant screen project manager **Giles Conte**, who recently left Screenco after six years with the company, has embarked on a freelance career as a project manager and technician. Email: giles.conte@virgin.net



Clockwise from far left - Celestion's Richard Vivian; Stage Electrics' Chris Patton and Matt Lloyd; Creative Staging's Richard Crowe

South London-based **Blackout Triple E** has recently appointed **Warren Connolly** as hire and sales manager. He joins the busy rental department and will use his 15 years' sales and marketing experience to promote the company's products and services.

Louis Teo has left Singapore-based distributor Del Salado Entertainment Pte Ltd, to start his own company, **Lighting & Sound Distribution**. The new company, also Singapore-based, will import and export lighting and sound technology. This will include special effects equipment, and feature brands such as Logic System, Starway, MBN, DiscoTech, Supervision and Dare Pro Audio.

Stuart Thomson, formerly of Avalon Communications, has joined **MEDC Ltd** as the UK northern area sales manager for the Next Two range of loudspeakers. Thomson has had more than 20 years experience in the communications industry with companies as diverse as Millbank Electronics, Planned Equipment Ltd and Avalon Communications. At MEDC, he will advise on loudspeaker layouts and work with third party VA/PA rack manufacturers on installation projects.

Orbital has appointed **Eric Simpson** as senior warehouse manager. Well known to many in the industry, Eric has officially 'hung up his touring boots' to take on the role which follows over 21 years touring with some of the largest names in the business. His remit will be to further streamline the operations of Orbital's busy warehouse. As a result of Simpson's arrival, **Tom Byrne** has moved to a role which will see him working closely with John Shemming in sales and installations.

Gareth Frankland and **David Horsfield** have taken over the operation of **ACDC Lighting Systems Ltd**, part of the Stadel Dawman group of companies. The two have been key members of the management team for some time, and were instrumental in developing ACDC into one of the UK's largest manufacturers of cold cathode lighting systems. Later this year the company plans to launch a new range of high intensity LED products.

UK pro audio manufacturer **OHM** has appointed **Martin Potter** as sales and marketing executive. He brings to the company over 20 years experience in audio related sales and marketing. The appointment ties in with the advent of a new wave of ambition from the Cheshire-based company, with R&D at its highest ever level. On the agenda for March 2002 is the release of new loudspeaker product aimed at the MI retail sector.

Lightfactor Sales

source & application

a complete service

LightProcessor Q-Commander

Best little dmx desk?

Moving lights made easy - see for yourself - call for a demo.

www.lightfactor.co.uk

Tel: 020 8575 5566 Fax: 020 8575 8678 Email: info@lightfactor.co.uk



L&SI Web Collection

Check out these websites for details of products and services

pro audio systems



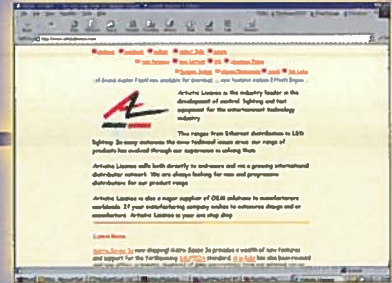
www.proaudiosystems.co.uk

lighting technology



www.lighting-tech.com

artistic licence



www.ArtisticLicence.com

northern light



www.northernlight.co.uk

nu-light



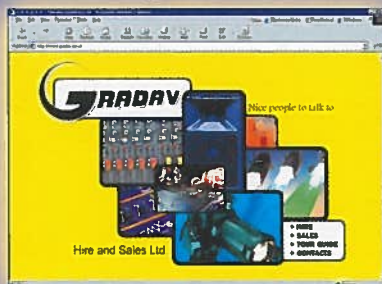
www.nu-light.co.uk

the music co



www.musicco.co.uk

gradav



www.gradav.co.uk

lee filters



www.leefilters.com

autograph



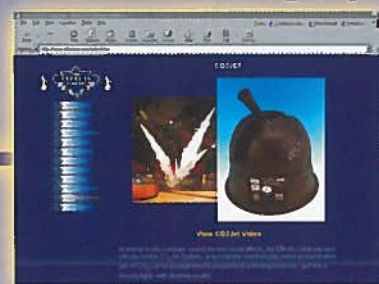
www.autograph.co.uk

light processor



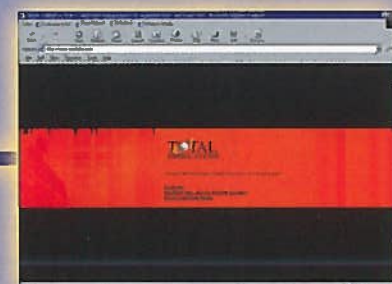
www.lightprocessor.com

the effects company



www.effectsc.com

total fabrications



www.totalfabs.com

mac sound



www.macsound.co.uk

le mark



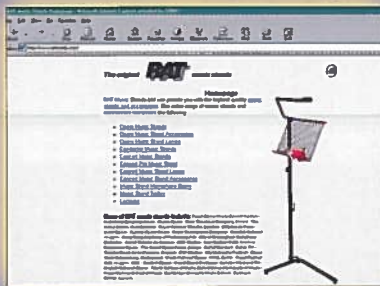
www.lemark.co.uk

wilkes iris



www.wilkes-iris.com

rat (music stands)



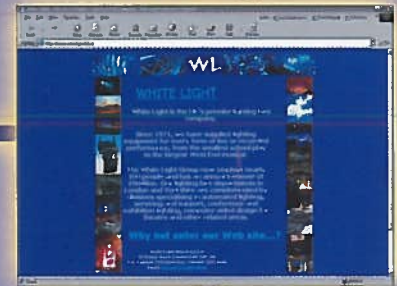
www.ratstands.com

speakers by shermann



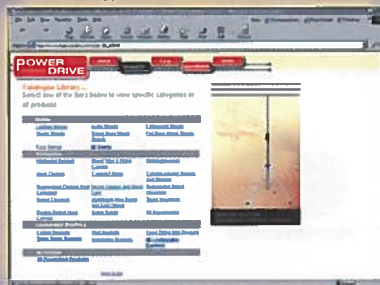
www.shermann.com

whitelight



www.whitelight.ltd.uk

powerdrive



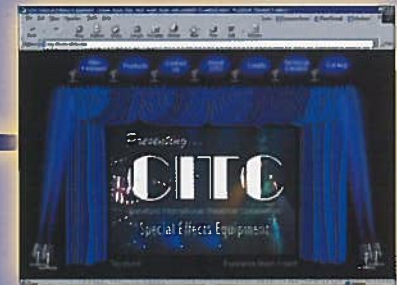
www.mypowerdrive.com

city theatrical



www.citytheatrical.com

citc



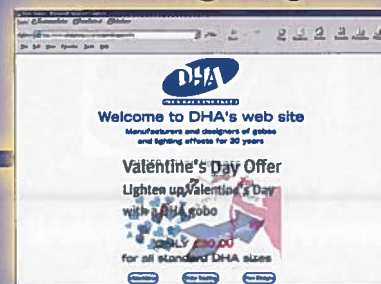
www.citcfx.com

a1 set



www.a1set.com

dha lighting



www.dhalighting.co.uk

tannoy



www.tannoy.com

zero 88



www.zero88.com

anytronics



www.anytronics.com

le maitre



www.lemaitre.co.uk

asg stage products



www.asgstage.co.uk

set lighting & sound



www.setlightingsound.co.uk

martin professional



www.martin.dk

formula sound



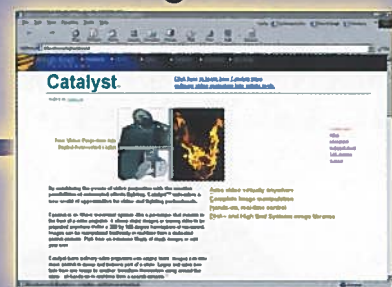
www.formula-sound.com

mavco



www.mavco.com

high end



www.highend.com

roscolab ltd



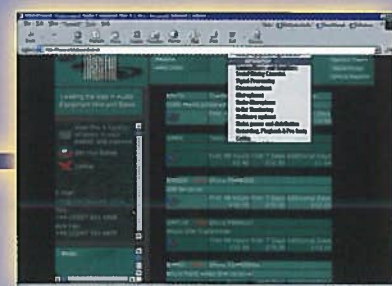
www.rosco.com

stage systems



www.stagesystems.co.uk

orbital sound



www.orbitalsound.co.uk

THEATRE 2002
SHOW
IT'S ALL IN HALLS

Exhibition of Backstage & Front of House Equipment & Suppliers

19 & 20 June 2002

in both
Royal Horticultural Halls,
London SW1

Stand booking:
Pandemonium Visions
Tel: 01895 251999

Visitor registration:
www.abtt.org.uk/theatreshow
from February 2002

ABTT Theatre Show 2002 is organised by Theatrical Trading Ltd with Pandemonium Visions on behalf of the Association of British Theatre Technicians



UNBELIEVABLE LOW PRICES!!

Stop Press!!
Coming March
Brand new
Road/Cable
trunks



Int Dim 1000 x 500 x 500
Hinged lid - 9mm Construction
Heavy Duty Fittings - 4" Castors
Various Colours

An amazing **£160 each!!**
or **£600 for 4**

(prices exclude VAT)

Delivery £15 single £30 for 4

We are taking orders now. Delivery mid March.
Ring Jason or Nige on
01827 60009 for further details

THE USED FLIGHTCASE COMPANY

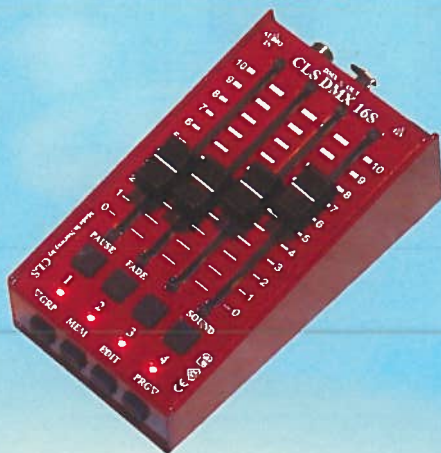
www.spider-engineering.co.uk Over 400 cases online

Compact Light System AS

Phone: +47 61341438 - Fax: +47 61341499
Email: office@cls.no - Internet: www.cls.no

CLS

CLS DMX 16 S
The world's smallest programmable
16 Channels DMX Mixer



Check our web for info and
more items in the family of
compact light products !

www.CLS.no

Producer of
the worlds smallest light systems

NORWAY

The
Light
from
North

Cable Express

If you need:

- Almost any cable or connector
- Urgent assembly
- The best price



Call us now!



SOCAPEX
cam-lok



Litton
TOURMATE™



Providing world class lighting solutions for next day delivery

A.C. Lighting Ltd.
Sales & HQ - High Wycombe
Tel: +44 (0)1494 446000
Fax: +44 (0)1494 461024
info@aclighting.co.uk



www.aclighting.co.uk

Northern Sales - Leeds
Tel: 0113 255 7666
Fax: 0113 255 7676
acnorth@aclighting.co.uk

technical focus

This month we have more news on the motor control connector debate, plus the STLD's research into photosensitive epilepsy and answers to more readers' questions. We also assess the growing trend towards line array technology and look at the major systems in the marketplace.

Welcome to the second of our monthly Technical Focus sections. The feedback from readers has been very positive, so thanks to those who took the trouble to send an e-mail or call. Please also keep the questions, technical issues and topics coming in; by raising them you can be assured that not only will you be helping yourself, you'll also be helping someone else in the same predicament! Whilst we aim to answer as many enquiries as we can, not all can make it into the magazine and the others will be posted on the PLASA Media website in order of arrival. Send your questions to technical@plasa.org or via the technical focus feedback link at www.plasa.org

RADIO FREQUENCIES

The Joint Frequency Management Group (JFMG), responsible for managing parts of the radio spectrum, has issued a document highlighting a government effort to poach back part of the old terrestrial television bands. This has great ramifications for those involved in using or manufacturing wireless mics, in-ear monitors, radio talkback or other such equipment. The band in question is 470-862MHz, which consists of the most widely-used block for radio mics, channel 69, and all of the shared channels 35-68. The reason for the move is to create new space for Digital Television (DTV), so that existing analogue services can be switched off, possibly as soon as 2006. JFMG is going to respond to the government's consultation document and would welcome any input from the industry. They'll present their proposed response at a seminar on 6 March in central London and places can be reserved.

More information can be gained from JFMG's website - www.jfmg.co.uk - or in the next edition of PLASA Standards News.

SPARKLEGLO

Poly Optical Products has developed a new side-emitting plastic optical fibre called SparkleGlo. Available in 0.5mm increments from 1.5-3.0mm it can be driven from a variety of cool light sources such as LEDs. The advantage is that such sources as LEDs operate off low current and voltage thereby making their use more suitable than the more common

discharge sources. Giving good results over lengths as long as 6m, applications could range from decorative star cloths through to robust battery-backed pathway indicators.

IGBT DIMMING

Those involved in manufacturing dimmers may be interested to note that a new IGBT device has been developed by Semelab and EMTERC at De Montfort University. The new semiconductor is being rapidly developed for mass production after successful laboratory production runs. Claiming to offer higher current ratings and up to 50% fewer total losses than existing devices, the chips also have CMOS and DMOS compatibility for on-board protection. Deliveries are expected to commence in early 2003, so soon after this, dimmers may become even quieter and cooler if the technology is adopted by manufacturers.

LUMINAIRE TESTING

Of interest to those making luminaires suitable for domestic use, such as low power washlights, the BEAB (British Electrotechnical Approvals Board) and the Lighting Association have been working together to promote the benefits of independent testing and certification to harmonised standards accepted by over 20 European countries. The Lighting Association operates UKAS accredited labs dedicated to luminaire testing and, as well as the BEAB, is a notified body to the DTI and EU. If you are looking at exploring either domestic or European markets then it may well be worth investigating and getting an ENEC Mark for your products to enable seamless penetration into these other markets.

MACROBERT AWARD

The Royal Academy of Engineering is looking for participants for its annual MacRobert Award 2002. Last year's winner was Sensaura (See last month's L&S1) picking up the prize money of £50,000. The award is open to anyone or teams of up to five people who can demonstrate they have made a major engineering breakthrough and exploited it commercially. Perhaps there may be some

"WHILST IT IS FAIRLY WIDELY KNOWN THAT IN LIVE ENTERTAINMENT EXCESSIVE USE OF BRIGHT FLASHING LIGHTS SUCH AS STROBES CAN CAUSE EPILEPTIC FITS, IT IS NOT QUITE SO WELL KNOWN HOW MANY ASPECTS OF TV COULD CAUSE IT."

➤ PHOTSENSITIVE EPILEPSY - PAGE 50



contenders from the audio field who have made major breakthroughs in the technology behind line array systems? (See the review that follows this section).

STANDARDS AND H&S REVIEW

WIRING REGULATIONS

Hot off the press from BSI is the latest amendment to BS7671, a.k.a. the 16th Edition wiring regulations. Whilst there is nothing that directly affects our industry, if you wire up houses in your spare time then you will find changes to the current rating of 2.5mm² ring mains. Other changes are mainly editorial with changes to some SELV regulations. Copies may be downloaded free of charge from the IEE website: www.iee.org/technical

AMPHENOL CONNECTORS

The PLASA Standards Office has had some feedback regarding the Amphenol C16-1 connectors. Both the Royal Opera House and Border TV are using pin 1 live and 2 neutral. Border TV sometimes use the spare pin 3 as a technical earth. Any more feedback on this issue would be appreciated, especially to gauge how widely they are being adopted.

WORKING HOURS

Working hours are increasing apparently. More people in the UK are now working over 48 hours per week than they did 10 years ago, despite the EU's working time directive. Research by the TUC has shown that 16% of the working population is exceeding the 48 hour threshold, some regularly achieving over

"SO, AS THE CABLES FROM THE GROMMET IN THE REAR OF THE PARCAN ARE NOT DOUBLE INSULATED, AND AS ALL PARCANS (SHOULD) HAVE EARTHING TERMINALS BOTH ON THE MAIN BODY AND THE BACKSHELL, THE ADDITION OF A PARSAFE DOES NOT ALTER ITS CLASSIFICATION."

➤ QUESTIONS & ANSWERS

55 hours. Whilst the effort is to reduce the working hours within the industry, this comes as no surprise.

PHOTOSENSITIVE EPILEPSY

The Society of Television Lighting Directors has been carrying out extensive work into Photosensitive Epilepsy (PSE). Whilst it is fairly widely known that in live entertainment excessive use of bright flashing lights such as strobes can cause epileptic fits, it is not quite so well known how many aspects of TV could cause it. Flashing lights are not the only cause of PSE; it is a cumulative problem and can be brought about by certain patterns and exacerbated by particular colour combinations. Whilst there are other factors, such as how a programme is edited, which are not within the control of the lighting director, a great deal can be done before a show is filmed to ensure that it doesn't become relegated to the shelf by having too many PSE triggers.

Equipment is available to test programmes, but it is a bit late to test the material before transmission. Accordingly, caution should be exercised when designing a show in the knowledge that it may be televised.

The Event Safety Guide, published by the HSE, suggests that flicker rates for strobes should be kept at or below 4Hz, as at these speeds only an estimated 5% of the PSE population is at risk of an attack. This rate only applies to the output of groups of lights in full view. Where more than one strobe is used, they should be synchronized.

For more information contact the PLASA Standards Office or the STLD at www.stld.org.uk

MECHANIZED TRANSPORT

Several moves are afoot in the world of the Health and Safety Executive concerning mechanized transport in places of work. Several issues are being highlighted in this month's issue of PLASA Standards News,

including the deadline for compliance to The Provision and Use of Work Equipment Regulations 1998 (PUWER), which is concerned with anti-roll devices and similar safety mechanisms on handling equipment, such as fork lifts. If you have any mechanized equipment or vehicles then this issue of Standards News should be read.

CHAIN HOIST CONNECTORS

There is a little more information concerning last month's coverage of the chain hoist connector problem, i.e. the use of 110V ceeforms inappropriately. The latest suggestion is that the yellow ceeform should be changed for a four pole ceeform (208V three phase plus earth), allowing the three phase conductors to be used for control voltages. As has been pointed out though, this doesn't help the situation as the standard covering chain hoists (EN60204:1998) states that plug or socket combinations in accordance with IEC 60309-1 (which covers ceeforms) or of a domestic type shall not be used for control circuits. This is fairly logical, as it prevents cross-connection between 'proper mains' and control devices; the consequences of such a thing happening do not require much from the imagination. It is possible though, if one is very careful, to deviate from the standards provided a suitably water tight risk assessment is carried out demonstrating that there is no risk in the proposed deviation. This is fine if you are confident that you're never going to face any problems, but as soon as it goes pear-shaped you'd have a hard job persuading the HSE that your assessment was squeaky clean.

Last month Mr Chippy had a little belt after plugging in his 110V tools to the motor control socket. We now come to the scenario where Mr Rigger has a pickle (hand-held motor controller) with a four pole red ceeform, plugs it into a local outlet designed to supply a motorized piece of kit, presses 'up' or 'down', shorts two phases and promptly blows his hand off!

QUESTIONS & ANSWERS

Q: I'm designing a projector system using a GE Arcstream 150W 4000°K G12 metal halide lamp. Having perfected a reflector that captures all the light I have found the white light output is tainted - and I think it is caused by a reddish brown deposit in the arc sphere. Three new lamps later and the same problem - I've adjusted the cooling but it won't go away. Why?

A: The reddish brown deposit is caused by the metal halide dose mixed in with some mercury and you can probably see it move when the lamp is tilted. When the lamp is hot, most, but not all, of the pool evaporates to give the light its characteristic colour. As you are using a highly polished reflector, the light reflects

back from this, through the lamp, and picks up the remaining pool of metal thus giving a coloured tinge to the light output.

Apparently, this is a well-known shortcoming of this style of metal halide lamp. Most manufacturers alleviate the problem by diffusing the light output either by using a stippled or frosted reflector, or by using a frosted lens at the front.

Alternatively, as the lamp you are using is a clear quartz style, you could use a ceramic metal halide that has the arc sphere enclosed in frosted glass, thus obviating the problem. GE Lighting's part number for said ceramic version is CMH150/T/UVC/U/942/G12. This is 150W, 4200°K.

Q: I have been told that 15A plugs are to be banned - is this true?

A: No. PLASA's Standards Office has been aware of this rumour for a while. Enquiries with the relevant standards bodies have confirmed that there is no intention to change certification for such connectors, and they may continue to be used.

Q: Is it correct that Parsafes make the Parcan a class II electrical appliance with regard to PAT testing?

A: One can be forgiven for thinking that with the extra insulation afforded by the Parsafe it falls into the double insulated class II appliance category. Unfortunately, however, this is not the case. The pertinent parts of EN60598-1:2000 details categories of construction for class I, II, and III luminaires. A class I device is "A luminaire in which protection against electric shock does not rely on basic insulation only, but which includes an additional safety precaution in such a way that means are provided for the connection of accessible conductive parts to the protective (earthing) conductor in the fixed wiring of the installation in such a way that accessible conductive parts cannot become live in the event of failure of the basic insulation."

So, as the cables from the grommet in the rear of the Parcan are not double insulated, and as all Parcans (should) have earthing terminals both on the main body and the backshell, the addition of a Parsafe does not alter its classification.

Also, note 4 under the description for class II units highlights that if a double and/or reinforced insulated luminaire has an earth bond terminal it is of class I construction. The only exception to this is for luminaires such as those in installations that have a loop-through facility, and an isolated earth terminal is provided for continuity of the earthing conductor.

If you have a burning question or niggling problem e-mail technical@plasa.org in strictest confidence!

EV

AND CRYSTAL CLEAR SOUND



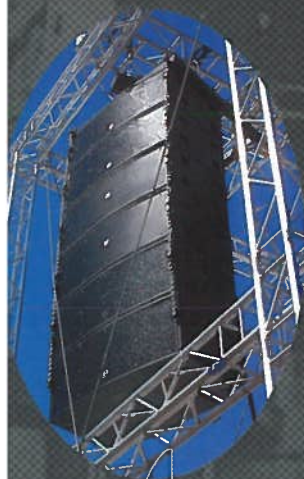
AC/DC
WORLD TOUR 2001



RIVERDANCE
WORLD TOUR 2001



MOBO AWARDS
LONDON UK



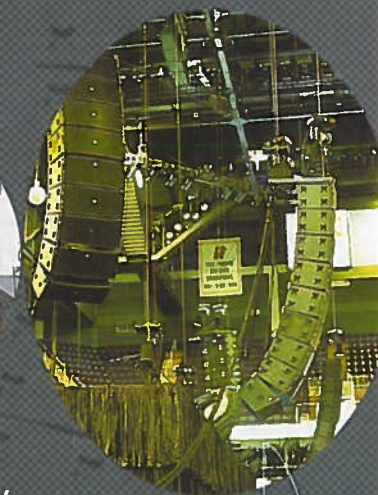
BERLIN
AIRPORT
GERMANY



MTV RAP
FESTIVAL
GERMANY



HARD ROCK
FESTIVAL
GREECE



ROD
STEWART
WORLD TOUR 2001

AS FELT & HEARD EVERYWHERE



Electro-Voice®

X-Array™

X-Line™

UK: SHUTTLESOUND Ltd • Tel: 0044-(0)208 646 7114 • Fax: 0044-(0)208 7583 • info@shuttlesound.com

GERMANY: TELEX EVI AUDIO GmbH • Tel: 0049-(0)9421 706-0 • Fax: 0049-(0)9421 706-265

FRANCE: EVI Audio France S.A. • Tel: 0033-(0)1 64 80 00 90 • Fax: 0033-(0)1 60 06 51 03

Line arrays are often quoted as the latest thing in speaker technology: the latest fad maybe, the latest technology certainly not. The principle behind line arrays has been around for more than 50 years, but it is only recently that technology has allowed good full range systems to be readily implemented.

There are so many conflicting (and confusing!) accounts of line array technology that it can be hard to decipher the jargon and look at the tangible benefits of such systems. True engineering at its best, sound reproduction is a complex business and not for the mathematically faint-hearted.

LINE ARRAY OR LINE SOURCE ARRAY?

The most common version of a line source array, which has been around in various guises for many decades, was (and occasionally still is) the column speaker, an arrangement of drivers in a row. Such columns lack any capability of full range reproduction, because making efficient HF drivers small enough is very difficult. Variations on a theme, including ribbon drivers, are used to increase HF content of a column. Whilst some designs have been around that give better frequency response, they invariably couldn't produce the high SPLs required of entertainment systems.

The advantage of such source arrays is the tight vertical dispersion and wide horizontal coverage which makes them ideal for venues such as churches, where wide audience coverage is required with minimal reflections off floors and ceilings. A line array is the name given to a number of individual cabinets arranged in a vertical column, rather than just the drivers. Such a grouping of cabinets shares



the useful attributes of a source array: very tight vertical dispersion of as little as 5° and wide horizontal dispersion of up to 100°. The lack of vertical coverage is a peculiarity of arrays used to advantage. As more drivers are stacked vertically, broadly speaking the vertical coverage becomes tighter.

OR SPHERICAL ARRAY?

Spherical arrays are a large scale attempt at creating a point source; no one currently makes drivers large enough to have a single cabinet hanging above centre

stage with enough welly to fill a stadium. Accordingly, clusters of cabinets are positioned in a manner that aims to emulate a single source. The prime benefit of a point source is that with only 'one' audio source in a venue there is - in theory - no danger of being in a position where phase cancellation (sometimes known as 'time smear' or 'comb filtering') may occur from multiple sources (see figure 1).

In reality, this is unlikely to happen because sound waves reflect off nearby objects and give rise to phase errors, but, in principle, it should be better than two separate sources. Great though this sounds, the actual design of the spherical array has many of the same pitfalls as that of the line array. Ensuring that the drivers are correctly aligned and do not interfere with those in adjacent cabinets is a precise science. There are some manufacturers, such as Funktion One with its Resolution system, making inroads into this area.

SOUND PRESSURE LEVEL

The one big difference of spherical over line arrays is the SPL intensity. A point source speaker obeys the inverse square law of intensity: for each doubling of distance away from the drivers (relative to the height of the array) the sound pressure level drops by three quarters - a loss of 6dB. This is because the radiation pattern is conically shaped, and covers a wider area (figure 2).

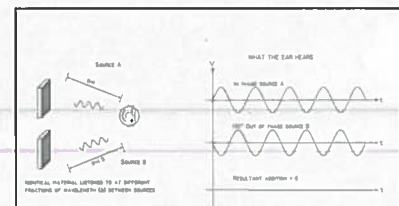


Figure 1: Sketch demonstrating phase cancellation at fractional wavelengths.

Line arrays, however, do not strictly obey this law. With some astute design work on the drivers and the cabinet enclosures, the result is a near uniform flat isophase wavefront (figure 3) extending over the height of the array (at least in the long throw portion) with the result that the listener in the far-field is hearing several cabinets at once. The SPL is accordingly linearly de-rated rather than dependant on the square of the distance, because the whole column of speakers has a radiation pattern akin to that of a cylinder. Whilst this holds for a fair distance from the array, the far field does eventually begin to exhibit the inverse square law rolling off at -6dB per doubling of distance. If the array were infinitely tall, this would not happen, but as most are a finite length the far field coverage becomes more spherical. However, the net result for a well-designed line array system is that people throughout the venue feel as if they are enjoying the near field, with well-defined and 'un-smear'd' sound reaching their ears. And this is what makes line arrays sound special.

FREQUENCY, WAVELENGTH AND COUPLING

This is where the clever part of the design comes in. Trying to achieve that uniform wavefront is the hardest part owing to the interaction of adjacent drivers (known as acoustic coupling). In order to achieve maximum coupling, and make the array behave as a single tall sound source, adjacent drivers in the column cannot have fixing centres further apart than their upper frequency of operation.

For example, woofers with a top operating frequency of 200Hz should not have centres spaced more than 1705mm apart (the wavelength of 200Hz based on a speed of sound waves in air of 341ms⁻¹). As most



PROFESSIONAL

A Harman International Company

VERTEC Line Arrays. Working In Concert With The World's Leading People, Projects And Places.

ATK/Audiotek Corp.;
Audio Analysts; BMW
New Models Launch
(Crystal Sound); COMDEX
(Las Vegas); Crystal Sound;
Democratic National Convention
2000; Enterprise Live; Entertainment
Sports Network ESPY Awards (MGM
Grand Arena); Fan Nation Festival (Flag
Systems); Flag Systems; GLAY Arena
Tour (Hibino); Grammy Awards, Staples
Center; Hibino PA; Howard University
Commencement (RCI); Image Awards
(Universal Amphitheater); Jands Production
Services; Kiss Tour (Jands Production
Services); Kloda Focus Group; Latin Grammy
Awards; Liberty Bowl (MSI); Loudness; Maryland
Sound; Meeting Services; Microsoft Exchange
Collaborative Solutions Conferences; Morgan
Sound; National Assn. of Elementary Principals
Convention; PUR Stadium Tour (Sirius); RMC
ShowService; Rocksound; Rocky Mountain
Audio-Visual; Sirius Schalltechnik Services, GmbH; SPL
Sound; Story Sound; Styx/Bad Company Tour USA 2001
(Audio Analysts); TV Guide Awards (Shrine Auditorium);
TwoMix, Inc.; UCSD Commencement, San Diego (Meeting
Services); University of Washington Commencement
(Morgan Sound); Utah Governor's Gala 2001; Wango Tango
(ATK); XFL Stadium Productions; XXXX Audio...



Visit us at
www.jblpro.com/vertec1/pro_user_comment.htm

woofers are in the region of 600mm diameter, this causes no problem. Similarly, with high-mid range drivers operating at a top frequency of 2kHz, the spacing should not be more than 170mm. The big problem comes with HF - at 20kHz the spacing should not be more than 17mm - which is a small HF driver! Even though it may be possible to reduce the diameter of the HF driver exit, the actual driver itself will still be too large to mount them adjacently. The net result is that there haven't really been any small HF drivers with enough power for professional use, and many clever brains are now working on alternative solutions.

CABINET DESIGN

Ignoring the problem of the HF drivers for a minute, consider the actual design of the cabinet itself. Line array manufacturers' cabinets are pretty much full range; some have additional subs to augment the really low end, but most can operate below 100Hz. It doesn't take much to realize that with both LF and mid range drivers, the cabinet will be fairly large. This compounds the problem of the HF drivers as the cabinet is far larger than the operating wavelength at high frequencies. Accordingly, the need is thus to design an HF driver that produces a flat pressure wave over the height of the cabinet.

HF DRIVERS

It would seem on the face of it simple to put a rectangular horn on the end of a compression driver giving a tall narrow wavefront. The big problem with this though, is that the wavefront emanating from the horn does not have a flat field and propagates in a spherical manner, similar to a point source. This does not bode well for producing optimum coupling as shown in figure 3. Various manufacturers have adopted different methods to solve this problem, generally with cleverly designed drivers that have a flat pressure wave exiting from a large horn, which has enabled line arrays to be used in large venues where high SPLs are required, as well as giving very definable coverage.

FLEXIBLE COLUMNS

Now the design has been optimized, the line array behaves just like a tall ribbon speaker, propagating one tall flat sound pressure wave. Referring back to figure 2, it can be seen that the dispersion vertically is pretty flat, which is great for preventing ground reflections. However, in the very near-field where listeners may actually end up below a flown array, the SPL is much reduced. Depending on the design of the cabinets, some may have a small lobe of coverage extending vertically from the top and bottom, but this lobe is frequency dependant and often 'tweaked' out in the processing.

However, because the array is akin to a ribbon speaker, there is no detriment in gently curving the bottom back to cover the near-field areas. The only clause in this is ensuring that the gap between the top and the bottom of adjacent cabinets at the front does not become too great, otherwise the distance between drivers exceeds the critical wavelength/driver spacing ratio.

ARRAY TAPERING

The technology doesn't stop there. One further problem with arrays is the low end coverage; whilst the HF in the near and far fields is now complete, the low frequency coverage is much weaker in the far field. This can be covered in two ways, one being to increase the size of the array to unreasonable proportions, the other to taper the power according to frequency. Pulling back on the power transmitted by the HF drivers and increasing that of the LF can alleviate the overall discrepancy giving a much flatter frequency response over the near and far fields. It should

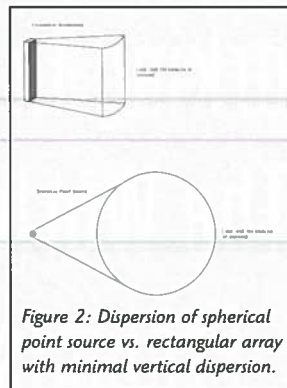


Figure 2: Dispersion of spherical point source vs. rectangular array with minimal vertical dispersion.

also be noted that air absorption plays a large part at high frequencies, reducing HF coverage.

Such tapering does give rise to further potential advancements though. With the advent of high power digital signal processors and filtering, it is possible (as Duran Audio have shown with their Intellivox range of speakers) to actually adjust the coverage of an array without moving it physically. With such technology now commonly available, perhaps we will see self-aligning stacks in the not too distant future!

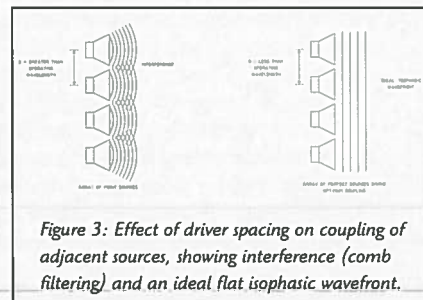


Figure 3: Effect of driver spacing on coupling of adjacent sources, showing interference (comb filtering) and an ideal flat isophasic wavefront.

REVIEW

Following is a selection of nine prominent manufacturers that have introduced 'true' line arrays, with a brief description of each. There are some manufacturers who sell 'arrayable' cabinets, but these should be treated with caution if you are planning to stack them on top of each other - accordingly they are not covered in this review.

Several of the manufacturers have design software available as freeware for the purpose of tailoring systems to a given venue size.



Martin Audio W8L

Some are quite involved, giving crossover settings and relevant EQ points, as well as suggesting cabinet quantities and array shapes. Use can be made of these to help analyse different manufacturers' systems when deciding which system to go for.

There are other makes around too, not all prominent in Europe, but worthy of mention. McCauley's Monarch system has a fairly high profile Stateside, along with Clair Bros' new i4 system. For drivers and cabinets, Netherlands-based Stage Accompany produce high power HF ribbon drivers, whilst for entertainment use Duran Audio has developed the Target LF array comprising some of their technology drawn from Intellivox.

Also, it should be noted that while SPL figures have been given for different manufacturers, rarely do they quote what signal source they used, nor do they always quote average values, so while they have been included to try and give some form of comparison, use the given figures with caution. It is also worth pointing out that due to the nature of line arrays, frequency responses and SPLs do change according to the size of the array. All figures given in the review are therefore for one cabinet only, not an array.

This review is also available on the web at www.plasa.org/media.

L-ACOUSTICS

Dr Christian Heil by common consent was the first to bring the line array to the entertainment and touring market, introducing the V-DOSC system in the early 1990s. Following research back in the eighties, Heil and co-researcher Professor Marcel Urban developed a theory defining the conditions for optimum acoustic coupling. The practical result of this research they coined 'Wavefront Sculpture Technology' or WST. Their method of solving the HF driver issue was to design a waveguide called DOSC (Diffuseur d'Onde Sonore Cylindrique) that gives the required cylindrical pressure wave from a large HF driver. The 'V' refers to the shape of the

Manufacturer		All data quoted for one cabinet only, not an array.						
	Size (w x h x d mm)	Weight	Amp channels	SPL @ 1m dB (note 3)	Horiz cover -6dB	Vert cover -6dB	Freq Resp. (note 2)	Cabinet splay max
L-Acoustics								
V-DOSC	1300 x 434 x 565	108kg	Tri-amped	134dB	90°	Not quoted ⁽¹⁾	50Hz - 18kHz	Not quoted
dV-DOSC	695 x 257/171 x 476	31.8kg	Tri-amped	128dB	120°	Not quoted ⁽¹⁾	160Hz - 18kHz	Not quoted
ARCS	440/190 x 820 x 652	57kg	Bi-amp	129.5dB	22.5°	+40° -20°	63Hz - 18kHz	Not quoted
Meyer Sound								
M3D	1350 x 500 x 762.5	177kg	Self-powered	122dB	90°	Not quoted ⁽¹⁾	35Hz - 16kHz	0 - 5°
EAW								
KF760	1143 x 368/329 x 787	102kg	Tri-amped	135dB	80°	3.0°	80Hz - 16kHz	Not quoted
KF761	1143 x 368/210 x 784	89.4kg	Tri-amped	133dB	100°	12.0°	80Hz - 16kHz	Not quoted
NEXO								
GEO S805	250 x 406 x 219	10.5kg	Mono-amped	100dB	80° / 120°	Not quoted ⁽¹⁾	60Hz - 20kHz	0 - 5°
GEO S803	250 x 406 x 219	10.5kg	Mono-amped	100dB	80° / 120°	Not quoted ⁽¹⁾	60Hz - 20kHz	0 - 5°
Adamson								
Y10	1086 x 267 x 623	69kg	Tri-amped	Not quoted	100°	5.0° (-3dB)	Not quoted	Not quoted
Y18	1466 x 467 x 673	122.7kg	Tri-amped	Not quoted	100°	2.5° (-3dB)	Not quoted	Not quoted
Electro-Voice								
Xvlt	1244 x 494/429 x 740	115kg	Tri-amped	133dB	120°	9.0°	50Hz - 15kHz	Not quoted
Xvls	1244 x 494 x 740	117kg	Tri-amped	133dB	90°	5°	50Hz - 15kHz	Not quoted
JBL								
VT4889	1212 x 495 x 538	72kg	Tri-amped	123dB	90°	Not quoted ⁽¹⁾	45Hz - 16kHz	Not quoted
Apogee								
ALA3	889/742 x 368/310 x 330	49kg	Bi-amped	127dB	60° / 90°	10°	65Hz - 17.5kHz	Not quoted
ALA4	1092/926 x 454/386 x 389	57kg	Bi-amped	132dB	60° / 90°	10°	50Hz - 17.5kHz	Not quoted
ALA9	1194 x 610/511 x 577	107kg	Tri-amped	136dB	60° / 90°	10°	45Hz - 17.5kHz	Not quoted
Martin Audio								
W8L	1314 x 755/855 x 490	115kg	Tri-amped	135dB	90°	7.5°	50Hz - 18kHz	0 - 7.5°
Note 1		Vertical coverage dependant on array height. Single cabinet figures given where quoted.						
Note 2		Low frequency response dependant on number of enclosures in array						
Note 3		SPL figures from manufacturers' datasheets. RMS values calculated where only peak figures given						
Only L-Acoustics figures are for continuous unweighted SPL referenced at 1m, pink noise, 6dB crest factor over system bandwidth, inc. preset EQ								

acoustic lens on the mid and HF sections. Another pertinent element of the V-DOSC system is that of using co-planar symmetry; within a cabinet there are the HF drivers mounted centrally, mid range either side, and LF either side of the mids. This, argue L-Acoustics, gives far better results in the horizontal coverage, ensuring even SPL of all frequencies in the 90° dispersion area.

The L-Acoustics system comprises four main elements. The main cabinet is the V-DOSC, with a frequency response covering 50Hz through to 18kHz. Additional subs (SB218) are available to increase low end down to 25Hz. Not the lightest units around, weighing in at 108kg per box, they pack a fair punch with an unweighted SPL at one metre of 134dB over the entire bandwidth of operation. Coverage is 90° in the horizontal plane and vertical coverage as defined by the array.

dV-DOSC is the cut down version of V-DOSC, aimed more at high power speech reinforcement or corporate applications. A wider coverage angle of 120° is available horizontally, and again vertical coverage is governed by the shape of the array. There are only two drivers giving a frequency response of 160Hz (100Hz with more than one unit) to 18kHz, with an unweighted SPL at 1 metre of 128dB. Weighing in at 32kg per cabinet, it is significantly more user friendly. Coupled with the SB218 sub, the flexibility of the system is greatly increased with applications ranging from small venue main PA to stage fill on large productions.

ARCs is the horizontal array cabinet utilizing the same WST technology. Trapezoidal cabinets allow for close fitting and correct coverage designed for medium throw applications. Horizontally, each cabinet has a symmetrical dispersion of 22.5° with vertical asymmetrical dispersion of 20° below the horizontal and 40° above. Weighing in at a moderate 57kg, unweighted SPL over the bandwidth at 1m is 129.5dB.

Rigging is pretty much internal to the cabinets, with the exception of a 'bumper' hanging frame that fits to the top unit, and small adjustment straps that change the angle between them. Once focused, the array is rigid and can be adjusted in its entirety by the up and down stage rigging motors.

▶ L-Acoustics: www.l-acoustics.com
UK rental: Wigwam/Britannia Row

MEYER SOUND

The M3D system introduced by Meyer claims to have much greater low frequency capability than conventional line array systems owing to the incorporation of a pair of rear facing 15" drivers, driven by a 'sophisticated phase manipulation circuit'. The quoted operating frequency range is 35Hz to 18kHz, and this can be further expanded at the low end down to 25Hz by addition of the M3D Sub. Horizontal coverage is 90° with no quoted vertical dispersion. Maximum peak SPL measured at 8m and interpolated for a 1m reference is greater than 145dB - no average value is

quoted, but it would be in the region of 122dB rms based on the above values.

A novel difference with the Meyer system is that of having amps integral to the cabinet enclosure. No processing, no amp racks, just a set of mains and signal distribution required. However, this might present a problem if an amp dies during a show, as there is no ready means of getting to the back of the cabinet when flown. Also there is the associated weight penalty; there may be less boxes to shift at the end of a show, but weighing in at 177kg the ones you do have are not light to move around!

The rigging system is all external to the actual cabinets. Known as 'QuickFly', it consists of a permanent frame around the cabinets with locking pins to connect up to 16 units together. Angular adjustment is in 1° steps via a graduated cam mechanism. A rectangular box section frame attaches to the top with relevant flying points.

Meyers' solution to the HF problem was to develop their 'REM', or ribbon emulation manifold, which gives a high frequency radiation pattern closely matching that of the low frequencies. Also, as described earlier, it is possible for vertical lobes to appear at low frequencies depending on the cabinet design. Meyer's proprietary BroadbandQ technology eliminates this lobing, giving much more accurate directivity.

▶ Meyer Sound: www.meyersound.com
UK distributor: Autograph Sales

Physics is the only thing this doesn't change.

You are looking at the new shape of sound – an entirely different device for controlling acoustic energy. The GEO wavesource. Its internationally patented technology is the result of a three year R&D effort combining classical geometry, computer aided design and conceptual breakthroughs. Its hyperboloid acoustic reflector is more accurate and consistent than any coercive megaphone-variant horn. Because the GEO wavesource has a virtual as well as a real acoustic source point, it will give you something you've never had: the power to design and deploy compact, efficient horizontal or vertical arrays with absolutely coherent wavefronts.



The hyperboloid reflective wavesource is one of three patented innovations developed as part of our GEO Project. In Nexo's more than twenty years of improving sound reinforcement through better ideas, GEO is the most significant development we've created. It doesn't change acoustical physics. But it will change the way you think about multi-speaker arrays.

If your business involves sound reinforcement, you need to understand GEO technology and how professionals are using it to make high SPL audio more coherent than ever before.

Download our Innovation Analysis and Application Analysis white papers along with the specs for **GEO S805, S830** and **CD12**, from our website www.fuzion.co.uk or call us on 01932 882222.



UK distribution by
 Fuzion plc, 9 Lyon Road, Walton On Thames, Surrey KT12 3PU, United Kingdom
 Tel: +44 0 1932 88 22 22, Fax: +44 0 1932 88 22 44, E-mail: info@fuzion.co.uk
w w w . f u z i o n . c o . u k

EAW

EAW's KF760 line array series is actually the second generation from EAW, the first being the KF860. The KF760 was developed to be a smaller system with higher output, using more recent technology. The series comprises the KF760 cabinet, designed to give short to long throw coverage, with the KF761 providing near field coverage as required. Again, further low end response is achieved by using the KF940 SuperSubs.

The KF760/1 are slightly more unusual in that they are one of the few systems not to use any direct radiating drivers: all drivers are mounted within the cabinet and by using a combination of horn loading and 'advanced divergence shading' the desired wavefronts are produced. Another marketing point of the EAW system promotes the 'soft shoulders' of the coverage pattern. Essentially the coverage of 100° horizontally for the KF761 (80° for the KF760) to the -6dB points gives enough extra to allow the system to merge with sidefills mounted at right angles to the main cabinets, but there is a very sharp roll-off outside the -6dB points.

The KF760 produces a respectable SPL of c.135dB at 1m average, rising to 154dB for an eight enclosure array (although it is not stated what noise source they used to achieve these figures). Frequency response for the one cabinet is 80Hz to 16kHz, going down to 40Hz for eight units. The KF761 is capable of c.133dB with the same frequency response, except arrays of up to four cabinets only extend as low as 60Hz.

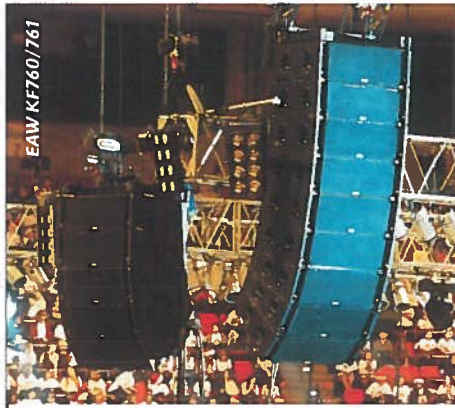
The cabinets are trapezoidal in shape with a fixed front and angular adjustment at the back. No prizes for lightweightness though, the KF760 and KF761 weigh in at 102kg and 90kg respectively. Proprietary rigging is provided to enable cabinets to be splayed and hung. The units can be stacked four-high on a dolly, enabling quicker de/rigging and one person with an electric chain hoist can de-rig a flown stack in a very short time.

▶ EAW: www.eaw.com

UK distributor: Mackie UK

NEXO

Nexo has very recently launched its all-new GEO S805 and S830 series array elements. The S830 is the near-fill array cabinet with the S805 designed for longer throws. Those familiar with Nexo's PS8 will appreciate the size and weight of the new cabinets: trapezoidal in shape and about the size of a small wedge, they both weigh 10.5kg. Unusually, Nexo's cabinets have a full range from 60Hz up to 20kHz; this belies a little cleverness in the design of the HF section. Their solution was to use a hyperboloid reflector waveguide - essentially an acoustic mirror - to achieve the desired pressure wave control, with the result of an extra 2kHz at the top end. A separate sub is available, the CD12, which brings usable low end down to 39Hz. SPLs for both cabinets average at around 100dB at 1m, with the sub reaching 107dB.



Another consideration given to the Nexo system is the 'Directivity Phase Device' that enables low frequency drivers to couple more effectively in an array at the higher end of their operation. Dispersion is also variable in both planes; horizontally, coverage can be adjusted for either 80° or 120°. Rigging is integral to the cabinets and allows adjustment of splay angle in 0.5° increments. A flying frame is available separately.

▶ Nexo: www.nexo.fr

UK distributor: Fuzion

ADAMSON

Adamson has had its Y-Axis line array series available for a while. There are two components, the Y10 and Y18. The Y18 is the bigger of the two, deriving its name from the Adamson custom 18" drivers, with the Y10 being smaller and designed with 10" drivers. Both systems use a JBL-designed HF slot source that gives a flat isophasic wavefront. The cabinets are not small or light: nearly 1.5m wide for the Y18 and just over a metre for the Y10 and weighing 123kg and 69kg respectively. Coverage is 100° in the horizontal to the -6dB points. Further technical data on the Y-series is a little scant; other than quoting the power handling of the drivers, the SPL is quoted as being "extremely high"!

Rigging is pretty much all integral, with a slot hinge along the front of the cabinets to prevent gaps along the front edge. An aluminium frame to hang either 16 or 24 units is available as an optional extra.

▶ Adamson: www.adamsonproaudio.com

European support: DV2

ELECTRO-VOICE

EV have a range of three full range cabinets and one sub - the Xsub. The two primary components designed for medium and far field are the Xvlt and Xvls respectively. Further to that is the Xfil, a wide dispersion angle unit for very near field coverage.

The Xvlt has 120° horizontal coverage and 8° on a single cabinet, obviously array dependant. Frequency response is from 50Hz through to 15kHz, with an average SPL of 133dB across the three drivers (no quoted noise source). The Xvls is much the same except for the coverage being 90° horizontal and 5° vertical. Weights are 115kg and 117kg respectively.

The Xfil utilizes the same technology as the main cabinets, but has been designed to give a much wider coverage of 120° x 40°.

The HF section of the main cabinets uses EV's new Hydra "time synchronized HF vertical plane wave generator" to give a flat wavefront and accordant far field summation. Another feature of the EV system is Ring mode decoupling, designed to reduce unwanted interaction between components and minimize the resonant frequencies of individual components.

The X-line system does need to be tri-amped: the benefits of this are that the array can be better 'tuned' as you have greater control over the dynamic range, by having the ability to adjust the crossover parameters. Conversely, this also calls for more amps than may otherwise be necessary, particularly if using the subs as well. Rigging hardware is included with the system and a bonus feature is the ability to leave up to four boxes rigged together for transport on a dolly.

▶ EV: www.electrovoice.com

UK distributor: Shuttlesound

JBL

Early starters in the line array game with their first systems around in 1975, JBL have built on this technology to produce the VerTec (Vertical Technology) system comprising the VT4889. JBL have carried out extensive research and revisited line array principles, producing several AES white papers in the process. The resulting cabinet is fairly well specified: horizontal coverage is 90°, frequency response 45Hz to 16kHz, and output is on average 123dB SPL at 1m. Weight is also more palatable at 72kg including rigging. HF coverage is achieved via the use of three custom waveformers in each cabinet giving a 'vertical ribbon' wavefront. A prominent feature at the front is the 'V' shaped Radiation Boundary Integrator. The object of this is to reduce diffraction of the acoustic waves and maximize HF coverage, whilst maintaining the mid range radiation characteristics.

Rigging is all internal and comes complete apart from the top flying frame. Quick release pins on the end mounted metal frames allow quick assembly and adjustment of units to achieve desired coverage angles. The array flying frame can suspend up to 18 cabinets.

▶ JBL: www.jblpro.com

UK distributor: Arbitr

APOGEE

Apogee have three cabinets in their line array range. Interestingly, all share the same HF structure giving options for horizontal coverage as narrow as 60° or 90°. Vertical coverage of a single unit is 10° in all cases. The smallest is the ALA3, more suited to installations where speech is the primary material. The ALA3 is well specified though, with a response from 65Hz through to 17.5kHz with 127dB SPL average at 1m. Also it is not too heavy either, at 49kg.

technical focus

Next up the range is the ALA5. A bit bigger and heavier (by 8kg), it has a better low end response down to 50Hz with upper reaches at 17.5kHz, with an average SPL at 1m of 132dB. The net result is a unit having a wider range of applications than the ALA3. Top of the range is the ALA9 which promises much higher SPLs, particularly for outdoor events. The quoted figure of 136dB at 1m average is probably helped by the fact the cabinets are triamped - potentially a disadvantage. The response drops again by 5Hz down to 45Hz with the upper reaches still at 17.5kHz. Not the lightest in the class either, weighing 107kg.

Rigging is quite simple via bars that separate the units. Different length bars are used to wedge the cabinets apart at the desired angle, and are locked in place with an internal locking pin. All the framework is integral to the cabinets making them quite robust.

▶ Apogee: www.apogee-sound.com
UK distributor: Lightfactor

MARTIN AUDIO

Martin are in the process of launching the new Wavefront W8L line array. The W8L is a single system that can be augmented with the WSX horn-loaded sub and is also compatible with the W8C series for side and front fills.

Martin's history in the arrayable speaker market extends back to the early 70s with the modular bin and horn systems, followed by the F2 and now the Wavefront 8CM/CT longthrow systems. The new system is entirely horn-loaded, which - according to Martin - achieves higher SPLs than direct radiating drivers. Low end down to 50Hz is achieved by a combination of horn-loaded driver and reflex enclosure. Mid range uses two of Martin's proprietary horns, with HF provided by a triple horn. This HF horn is fed by three vertically in-line slots that form a virtually continuous HF element.

Output is approximately 135dB at 1m average; although no data is given for the input source they pack a fair punch. They are not light though, weighing 115kg per unit. Rigging is all internal and captive and up to 12 cabinets can be flown in an array. The front of the units are hinged, with the cabinets trapezoidal in shape to allow differing splay angles to be achieved for near and far fills by sliding links at the rear of the enclosure. Horizontal coverage is 90° and each cabinet has vertical adjustment of 7.5°. Martin are now shipping the W8L system.

▶ Martin Audio: www.martin-audio.com

DYNACORD

Dynacord are about to ship a brand new compact line array system. Aimed at the smaller venue market, like Nexo's GEO system, it is well suited to corporate events,

auditoria and similar sized events. Called 'Cobra', the basic system has four main units and four subs, giving an SPL at 1m of 141dB. Another cabinet, the Cobra-FAR has been designed for long-throw applications in excess of 40m. Unfortunately, no further details are available at the time of press.

CONCLUSION

The quality of a well-designed array in a venue is far superior to that of large stacks either side of a stage. With great minds now working towards better drivers, digital signal processing can cope with the filtering for power tapering and more people are hearing the difference. More information including a discussion forum on line arrays can be found on the website www.linearrays.com

RECOMMENDED READING

High Performance loudspeakers; Martin Colloms; Wiley
Acoustics and Psychoacoustics; Howard Angus; Focal Press
Sound Intensity; F.J. Fahy; E&FN Spon
Theory of Sound Vols 1&2; J.W.S. Rayleigh; Dover Publications
Live Sound Reinforcement; Scott, Hunter, Stark; Mix Books
Loudspeaker and Headphone Handbook; John Borwick; Focal Press
Newnes Audio and HiFi Engineers pocket book; Vivian Capel; Butterworth Heinmann
Handbook for Sound Engineers; Glen Ballou; Focal Press

ALUMINIUM ACCESS PRODUCTS

We are the manufacturer's approved service engineers for the Tallescope.

The service we provide includes on-site repairs and safety inspections, and sales of new and used Tallescopes.

New Tallescopes are available on long-term contract hire!



Aluminium Work Platform:

- Working Heights to 9.5m (31')
- Platform Capacity 115kg (250lbs)
- Standard or Extra Compact Models Available
- Fully Adjustable Legs
- Optional Trailer Kit
- All Aluminium Construction
- Compact & Manoeuvrable

Aluminium Access Products

Unit 9A, Landgate Industrial Estate, Wigan Road, Bryn, Wigan, WN4 0BW, UK.

Tel: +44 (0)1942 275558 Fax: +44 (0)1942 711744
Mobile: +44 (0)7811 450417

LDPS LTD

Venue Technical Consultants
Technical Design Services
Event Technical Production

Theatres, Live Venues, Multi-purpose Spaces,
Heritage and Exhibition Projects, Trade Shows
+ anything interesting or unusual

www.ldps.ie

Based In Ireland, Active Worldwide

Phone: +353 (0)21 450 8162

Fax: +353 (0)21 450 8168

E-mail: ldpsinfo@ldps.ie

Please note that LDPS Ltd is the new name for Lighting Design and Production Services

The
**Fibre Optic
Lighting People**



Par Opti Projects Ltd,

* 67 Stirling Road, London W3 8DJ, England *
Tel: 020 8896 2588 Fax: 020 8896 2599 *
www.paropti.co.uk E-mail: paropti@cs.com

NOW WITH ADDED POLISH

**Astralite and
Shoplite ranges
available now
in polished
aluminium.**



litestructures

CREATIVE STRUCTURES IN ALUMINIUM

Litestructures(GB)Limited
Langthwaite Grange Industrial Estate,
South Kirkby, Wakefield WF9 3NR,
West Yorkshire, England.

Tel: +44 (0)1977 659800

Fax: +44 (0)1977 659801

email: info@litestructures.co.uk

www.litestructures.co.uk

Litestructures Deutschland GmbH,
Hermannstraße 12 D-48282 Emsdetten,
TELEFON: +49(0)2572 - 954100

FAX: +49(0)2572 - 954105

EMAIL: info@litestructures.de

INTERNET: www.litestructures.de

World Class Products



World Class Service

extensive product range • vast stock holding • installation & maintenance • demonstration & training
technical support service • repair & service centre • project consultancy • bespoke design service
manufacturing facilities • full export service



Please note: In certain countries some products listed may not be available from A.C. Lighting

For all your lighting needs

A.C. Lighting Ltd
Sales & HQ - High Wycombe
Tel: +44 (0)1494 446000
Fax: +44 (0)1494 461024
info@aclighting.co.uk

www.aclighting.co.uk

Northern Sales - Leeds
Tel: 0113 255 7666
Fax: 0113 255 7676
acnorth@aclighting.co.uk



SATISFYING SOUL

Not everybody will know the name Paul Carrack, but they'll certainly have heard his music. Steve Moles catches up with the ultimate journeyman

It's a bit like Bob Hoskins stepping on stage - not the same potential for menace, but a physical presence nonetheless. Paul Carrack is not a natural pop star, his physique is ill-suited, his age and hairline mitigate against him; but he does possess two primary requisites for being one, a great voice and a fertile song-writing mind.

I discuss the relatively recent phenomena of his stardom with Dave Berry (yes that Dave Berry, the Searchers, et al); we agree, he's been writing great songs for years, but always for other artists. Yet he's not stage-shy, having trod the boards with Squeeze and Mike & the Mechanics to name just two, but he is a reluctant front man.

On balance, I'd say it's pretty academic whether we see him like this, or within the wrapper of another band, he's certainly appeared in these pages with the two bands mentioned above, and both times managed to shine out from within those confines. So it is that Carrack is an artist easily overlooked, he's a bit of a musician's musician (hence Berry in the audience - and if you want to know, he's still touring and has a CD out on the continent 'The Singles'). Carrack is the kind of act where you know the songs and you maybe have a couple of albums, but you wouldn't necessarily go and see him.

SOUND

Carrack opens with 'Can you hear me?' His voice is sweet and pure, music well detailed and, in terms of balance, sounds all around rather than beneath him. Then 'Another cup of coffee' - a much huskier

vocalisation altogether, accompanied by a bright acoustic guitar pitched right on level with his voice. By the time we were into song four I realized that house engineer John 'JT' Turner was going to mix like this throughout.

It was loud too, and this is a big band, three-piece horns, as well as keys, guitar and rhythm, so there's lots in there to listen to. I found myself really enjoying the sensation of having to listen, concentrating to pick out the instruments. Don't misunderstand, to do so was not a struggle, it was just different not to have the lead voice emphatically on top of everything. Turner is helped by there being no nasty surprises, all the solos are well telegraphed.

All this from an EAW KF850-based PA, a good system, but not one that's been singled out for fantastic fidelity (you don't find John Pellowe using one for Pavarotti), which says something about JT's ability. At his hand he has a Midas Heritage 1000, "just for the EQ". He also uses KT360s for the system and has an Mx800i processor, "for the odd notch, raising the stage subs +6dB and protecting the 15"s in the air." Turner has been touring almost as long as Berry's been a Searcher, and with Carrack for the past three years, so venues pose few surprises for him, but even so the City Hall is not an easy room.

Yorkshire Audio has provided the system, company owner Bob Collinson being Carrack's monitor man. In collusion with JT, they decided to hang a centre cluster rather than each side above the floor



SIDE BARS

Carrack was with pub-rock group Ace in 1972; he wrote and fronted their debut single 'How Long.'

When Carrack joined Squeeze it was to replace keyboardist Jools Holland. An alternative version of the group's video for 'Tempted' exists, featuring the band standing behind Paul Carrack while assorted objects, including elephants float past.

John Turner hails from Barnsley, Bob Collinson Leeds, and Paul Carrack from Sheffield. "It's an engineers dream to work with a band like this," they both said. It's a Yorkshire thing.

Paul Carrack has single-handedly revived the fortunes of M&S.

stacks. Upon reflection I'm amazed I've not seen this done here before: this oval concert hall has some of the weird acoustic characteristics of the RAH. A mono hang makes for great coverage across the two balconies, and avoids much of the problems the curved walls can make. Height is the reason why not, there's simply not enough of it, with just a two-deep cluster, the bottom row still has to project through the front lighting truss. Putting a deeper box like, say, Prism on centre would just not be aesthetically acceptable.

"It is a lot easier with the mono cluster," said JT. "We've also flown a wedge right off to each side just to catch the first few seats at each level," the broad balconies having sharp sideburns running almost to the stage. "There are four sub bass cabinets up there as well, so I can run the same full mix upstairs and down. This is very much a live band, and it does all revolve around his voice, but Carrack does like it to push along sometimes. He likes it raw and doesn't like the mix to be swamped by guitar and vocals."

There are plenty of plusses on Turner's side: Dean Dukes on drums tunes his kit beautifully, making it reverberant, but with quick decay. And the brass section know just



how to modulate their effect, working the microphone to horn-end relationship with precision - wonderful to watch, exhilarating to hear. And talking of microphones: "Paul has an endorsement deal with Sennheiser, so all the stage mics are from them, save a 52 and 91 combination in the kick drum." JT revealed he will be travelling to Germany in the new year to assist Sennheiser in developing a plate mic for drums to fill this hole in their range. "The 421s I'm using for brass are excellent, nice and tight, and the 500 series I'm using really complements Paul's voice."

Overall, a nice open mix, with little in the way of compression: Drawmer DL 251s, a rarity in these pages but good enough for what JT is doing with them, applied delicately to Carrack, backing vocals, sax, bass and keys. On the effects side, JT has the familiars: PCM70, SPX and Roland 330, "for occasional vocal thickening; pitch shift for the brass, and to add a touch of reverb to the snare and toms." But generally it's all pretty natural, and although loud, not overpowering, especially for an audience typically dressed in Marks & Spencer stretch corduroys.

MONITORS

On stage, Collinson provides eight separate mixes to a total of 14 wedges, plus side-fills and drum fill, and this despite 500 series in-ears for keys, sax and Carrack. "They all just like different things," explained Collinson. "Paul Copley on Keys and backing vocals uses just one plug when he moves around stage, same for the sax, and Paul has stereo, but often pulls them out." There's a story to all of this chopping and changing: "Everything is pretty much full mix, predominantly drums, keys and Paul, for the wedges, ears, the lot. Which is funny really, at the start of the tour there was just one wedge and a drum fill, everyone was on ears, but as things progressed we've added more and more." Something possibly predicated by Carrack's

band, the 'Dynamite Brothers', who when not with Carrack, ply the Northern club circuit. Collinson is sanguine about the growing monitor world, "my Allen & Heath ML5000 is full now, so there can't be any more."

Collinson, like Turner, benefits from a band who control their own dynamics and are temperate in performance. "It is complex to set, but if I've got it right during sound check, chances are I'll have little to do other than mute/un-mute during the show. General levels on stage are pretty static, which is great as it leaves me free to concentrate on Paul, but even he just needs the odd touch of reverb, or maybe his level pulling back."

That straightforward description beggars the question of why Collinson has only recently joined the Carrack camp: "I was out at the NAMM show last January and JT introduced me to Carrack there." It must have been a good introduction, "he promptly invited me to do monitors and I've been with him ever since." But then the absence of facilities like tour catering seemed to point to an under-funded tour, which was surprising considering the stature of artist and strength of ticket sales. He's lucky to have Collinson, I'm sure there's many a monitor man who'd decline under the circumstances.

LIGHTING

Well, here it is, front truss, back truss and black backdrop - very workmanlike and all pretty ordinary, except for one little feature, a pair of hemispherical mirror-balls (surely an oxymoron, but what else do you call them?) tucked behind the back-line and lit from close range by ETC Source Four profiles on sticks. Not revolutionary, but visually 10 times more striking than a single flown ball.

"In many places I've been using house systems," said LD Mark 'Taz' Wheatley, "normally we just carry four bars of Pars, four MAC 500s and four sets of ACLs. The mirrors were something special requested by Paul for

Far left, Carrack's monitor man - Bob Collinson of Yorkshire Audio. Centre, Paul Carrack and his band on stage at Sheffield City Hall. Right, house engineer John 'JT' Turner (left) with Keith Birtwhistle of Yorkshire Audio



'The Living Years'. Most of the house rigs have been pretty good and it's always fun patching into house dimmers," he added with a smile. "That's one of the reasons I like the Celco Ventura desk I'm using. A very underrated desk if you ask me. Anything I've programmed in is very easily overridden, even on the fly, which is useful when you're plugged into different systems every day." Wheatley is undaunted by most things. When I arrived he was bellowing like a gut shot rhino from atop the truss as he endeavoured to call focus channel changes in the midst of sound check. How like my own youthful career 20 years ago, I reminisced.

That said, lighting company DLD/LX Co have pulled out all the stops for Carrack's hometown gig. There's over 100 Pars up there today, extra MAC 500s and half a dozen MAC 600s for good measure. "The ACLs are the only white I've got on stage, apart from the followspots." Wheatley's

choice, but Carrack has input to the look. "Paul was very specific, he didn't want it to be all focused on him - it's a complete band show." Which proved to be the case.

Wheatley doesn't fail to please, five big colour washes from the Pars ensure that no-one hides in a shady pool. Considering the absence of colour changers, some of the colour combos he produces from judicious use of the MACs are spot on. How about bright yellow and magenta from the MACs with alternating amber and red washes from the Pars? Sounds dubious, looks great.

Choices like these enabled Wheatley to make a distinction between the rock band songs, and the more structured cabaret-style numbers.

"There are parts where I have to isolate him, particularly when he solos from the piano. I was going to use just followspots, but James [Dan, Mr DLD] suggested putting a couple of profiles up on the front truss which proved much more discrete." An admission that points up Wheatley's youth, but what little tricks he lacks from inexperience, he more than compensates for with a willingness to try. For example, I thought the ACLs in classic heavy metal fan focus, would be entirely inappropriate, but flashed at less than full fade, making the beams orangey rather than full-on white, moderated the effect perfectly.

He also had groundrows across the back, focused against the black backdrop, using them intermittently in conjunction with parts of the Par washes focused more heavily upstage, so that the backdrop was fully coloured. Okay, no big deal, but without them the eye would have only ever seen the band against black, no matter what was happening above. At least this broke the monotony.

Photos: Steve Moles/Simon Camper

superior lightweights

the new
GL-Series

www.shermann.com

Shermann

Fine audio systems
for
industry professionals

tel
+44 (0)1686 622 997

fax
+44 (0)1686 622 616

email
sales@shermann.com

www.flashlight.nl

without lighting
you'll miss the magic.

Flashlight Rental bv
Lighting and Rigging facilities
Vlampijpstraat 75
P.O. Box 9280
NL-3506 GG Utrecht
The Netherlands
Phone : +31 (0)30 - 242 88 88
fax: +31 (0)30 - 242 88 92

Flashlight

e-mail: info@flashlight.nl

It's all about performance

www.handheldaudio.co.uk

handheldaudio

HEALTH WARNING: GOOD RADIO MICS CAN
SERIOUSLY IMPROVE YOUR SHOW

Following my state-of-the-industry piece last month, I picked up a story this week which shows that the creative juices are, indeed, still flowing and that new and innovative ideas may yet provide a stimulant for theatre business in the West End.

ACCORDING TO several newspaper reports, two of the UK's most prodigious talents, Stephen Fry and Andrew Lloyd Webber, have joined forces with Nicola Horlick, herself a ferocious financial talent, and producer Michael Coddron, to set up a company called Theatreshare. This company will attempt to raise £2million in £2,500 chunks, with a view to producing new plays and musicals. While £2m is a relatively small sum in this context, Really Useful expect to spend anything from £25-30m on productions annually. Those who may be interested in divvying up the odd two and a half

metal-halide lamps, those high colour-temperature light sources beloved of the automated luminaire manufacturers and many lighting designers. Recently, in the US, several states have taken it on themselves to progress laws which restrict the use of products containing mercury in such a way as to render metal-halide lamps obsolete. According to our friends at ESTA, most of these laws are so ill conceived that they will almost certainly have the reverse effect to that intended.

ISN'T THIS THE COUNTRY that pulled out of the Kyoto Accord to limit the harmful effects of greenhouse gasses and emissions? Just so, and there lies the twist: metal-halide lamps are environmentally very efficient. The amount of power that would be needed to replace these lamps would be huge and, perversely, could well lead to the discharge of far more mercury into the environment. The obvious solution is for such bulbs to be recycled via their manufacturers, or even major distributors, in a way that would meet the guidelines of the US Environmental Protection Agency.

I WOULD recommend the system adopted by my friends at Barco in Belgium. When they entered the market for high power video projection, they were confronted with the issue of how to deal with the xenon lamps that they needed because of the xenon's characteristically small pinch. In this case, it was not so much an environmental issue, as one of handling the risk of explosion, nevertheless the effect is the same.

ALL SUCH LAMPS are provided in sealed boxes that can be installed into the projector with no dangerous handling. A spare is also provided. When a lamp goes down it is returned in the same container to Barco to be re-gassed. Metal-halide lamps are expensive enough for the manufacturers to adopt this process, which would provide them with a continuous replenishment income without the need to blow more glass. This has to be a win, win situation for

all concerned - no waste, lower consumption, and the retention of these precious light sources. By the way, before you mention it, xenon lamps are not a viable alternative to solve the mercury problem in that they are barely more efficient than an incandescent.

COMPREHENSIVE further information on this subject can be found on the ESTA website at www.esta.org. If such laws were enacted in New York, Broadway would go dark on the stroke of a pen! We should also be alert to the danger that similar crackpot ideas could be afoot in the EU; lamp manufacturers should set up recycling systems before the event, rather than wait for the axe to fall. Anything else would be total madness.

WHILE WE'RE ON well known phrases and sayings, there follows an 'Every Cloud has a Silver Lining' story: Unbeknown to most of us, because by the time it became public most of us had closed our offices for Christmas on 21st December last, VFG Plc's bankers appointed joint administrative receivers and requested suspension of trading in their shares on AIM. Timing with a certain Dickensian edge to it, you might think, but always a good ploy timing-wise if bad corporate news is afoot.

VFG PLC is the Pinewood-based film, television and lighting equipment hire company that, not so many moons ago, acquired Michael Samuelson Lighting, and more recently, the Electric Light Company in Bow. It seems cyclical in corporate Britain that companies go around gobbling up others, increasing debt as they go, and then subsequently announcing that they are shedding 'non core' interests to repay that same debt, and often to management who believe they know the fundamentals better than the bankers and bean-counters. Precisely that was in train at VFG, with some assets already having been sold in 2001, before their bankers, apparently, ran out of patience.

THIS MOVE CLEARLY focused minds wonderfully because, despite the time of year, and before you could say 'Ebenezer Scrooge', on January 17th the receivers announced that the rental assets had been sold for £9m to a new private company, VFG Hire (aka VFG Trading and VFG Holdings), which represents the management and is backed by HBoS and ING Barings. This was really good news for both staff and trade creditors, as the management team and their backers have taken the highly unusual step of assuming some of the trade debts of the previous company. This, the more surprising, because in his statement, new chairman Bill Gore, quite unnecessarily blamed the problems at Plc on 'over investment in new equipment', when he could easily have pointed the finger at other distractions.

"It seems cyclical in corporate Britain that companies go around gobbling up others, increasing debt as they go, subsequently announcing that they are shedding 'non core' interests to repay that same debt."

grand, will have the added incentive of eight free theatre tickets per year.

THE ORIGIN OF THE EXPRESSION 'Mad as a Hatter' is fairly well known to have originated from the deleterious and delirious effect on the health of milliners which resulted from the practice of using mercury to stiffen the brims of stovepipe hats during the 19th century. Now, it seems that a new kind of madness has been induced by the wondrous substance: it is a vital ingredient in the composition of HMI and other

Lightfactor Sales

source & application

a complete service

European made
Parsafe-2

Keep old Par-cans safe and up-to-date.
Single mould, insulated lampholder.
Complete with approx. 1m silicon cable.
Fit most popular model cans.



www.lightfactor.co.uk
Tel: 020 8575 5566 Fax: 020 8575 8678 Email: info@lightfactor.co.uk

YOU HAVE

NEEDS



4:1 CONTINUOUS Zoom

- 11° - 45° range
- Continuous focus retention

Modular Construction

- Custom configuration
- Quickly swap components
- Easy maintenance

Feature Packed*

- Up to 21 LithoPatterns*
- TRIPLE MORPHING™ effects
- Precision framing shutters
- Variable CTO and CTB
- ACN and Ethernet ready

Precision Optics

- Even field
- Focal range spans 3 gobo wheels
- f2 lens ensures maximum output at all beam angles

Innovative

- Bright graphics display
- Light Burst™ technology
- Electronic and mechanical strobe
- LithoMotion™ gobos*

Bright Yet Quiet

- 13,000 lumens
- Minimal fan noise

WE HAVE
THE FIX

XSPOT
AUTOMATED LUMINAIRE

High End Systems, Inc. / Austin, TX 78758 / Phone: 512.838.2242 / Fax: 512.837.5290
sales@highend.com • www.highend.com

Austin / New York / Los Angeles / London / Singapore / Germany / Orlando

High End



SYSTEMS

*features vary by model

Lost in Space?

Let a **LODESTAR** from PCM Be Your Guide!

(and not some man in a white jacket waving a stick thing!)



Prenton Way, Prenton, Wirral CH43 3DU
 Telephone: +44 (0) 151 609 0101
 Fax: +44 (0) 151 609 0200
 email: anyone@askpcm.com
 www.askpcm.com



WILKES IRIS



Wilkes Iris Ltd, Widco Works,
 London Road, Bexhill-on-Sea,
 East Sussex, TN39 3LE, UK.
 Tel: +44 (0)1424 217 630
 Fax: +44 (0)1424 215 406
 E-mail: sales@wilkes-iris.com
 www.wilkes-iris.com

Cirrus

LOWSMOKE

At last, an authentic looking low level dry ice type effect without cumbersome freezing equipment.

The CIRRUS LOWSMOKE simply fits to any EFFECTS COMPANY SUPERSMOKE machine, transforming its output into a consistently low atmospheric fog. This together with the high quality of design and build associated with THE EFFECTS COMPANY, the CIRRUS LOWSMOKE is quite simply...

...EFFECTIVE!

OUTSTANDING FEATURES:

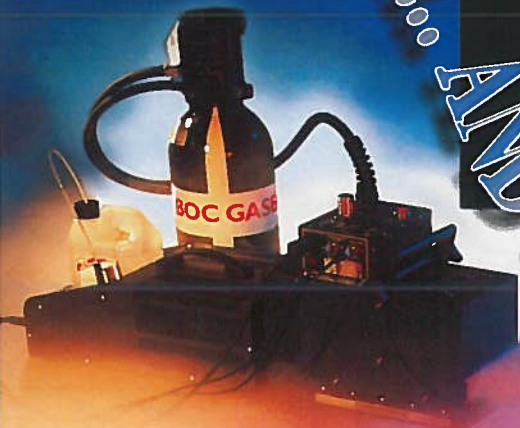
- 45 MINUTES OF DRY ICE EFFECT FROM ONE 34kg CYLINDER
- GENERATES LOW AND STAYS LOW
- USES ECONOMIC AND POPULAR CO₂ CYLINDERS
- 1 to 10v or DMX CONTROLLABLE



The Effects Company,
 Ladycross Business Park,
 Hollow Lane, Dormansland,
 Surrey RH7 6PB ENGLAND
 TEL: +44 (0) 1342 870111
 Fax: +44 (0) 1342 870999

CHILL OUT!!

AND KEEP A LOW PROFILE.



PRODUCTION VALUES

Mike Mann interviews Ian Whitehead and Steve Levitt

Ask most seasoned professionals on tour about their happiest moment and they will usually trot out a tale of onstage (or backstage) shenanigans. For the partners in Production North, however, their clients antics cannot compete with the number one love of their lives - Leeds United Football Club. "Our greatest hour? Ian Smith's goal against Southampton in the first match of this season," affirms Ian Whitehead, who, with ex-soundman Steve Levitt, runs one of the UK's most prolific live production organisations.

Both are Leeds season ticket holders, and use the beautiful game to vent their work-related frustrations. "We can shout at people there - it's a big let-off of steam," agrees Whitehead. "The only problem is that booking agents don't look at the home fixtures list when they're arranging tours!" "We were thinking of writing something about that into our contract," chips in Levitt - and from the look in his eye, he's only half-joking.

Steve Levitt and Ian Whitehead make a formidable team. Both native Yorkshiremen, they have been working together on and off since 1989, forming their own company Production North two years ago. Their speciality is boy and girl bands - an odd choice for two people who started out in mainstream rock.

"We met when SSE asked me to mix monitors for a tour with a rock band called Little Angels," recalled Levitt. "Ian was doing production, acting as the drum tech, and so on."

"I'd been pushing flightcases for the band since University," confirmed Whitehead, who dropped out of a degree course in Economics and Industrial Relations to run the northern office of Little Angels' management company.

These days, the pair are more likely to be found running a Steps or Westlife show, having provided tour production for many young acts including Boyzone, the Spice Girls and All Saints. Production North, says Levitt, is slightly different from other outfits. "We do things that other production people won't touch - we act as management on tour for most of our acts, for example."

Even though every band has its own manager, Levitt points out that they will rarely have much touring expertise.



Ian Whitehead (left) and Steve Levitt (right)

"Management fall into two categories - artistic and business. What we do is work with either or both when they don't want the grief of handling a large-scale tour." This, they explain, means sorting out everything from dancers' contracts to catering - with input from the record company, manager, and even the bands themselves. "We excel at politely throwing out the bad ideas and making a reality of the good ones," laughed Levitt.

While a freelance lighting designer is an accepted part of most tours of this ilk, a set designer is still a comparative rarity - which has led to the pair becoming involved in the more mechanical aspects of tour production. "We didn't start out wanting to do things like designing sets," explained Whitehead, who was responsible for Hear'Say's recent 'pinball' stage, "but we know about these things, which means we can make it all happen - and of course we have a good idea of costs."

Levitt pointed out that there is no contest between artistic whim and hard fiscal reality on this type of production. "For all the gigs we get, the bands are as interested in the profit line as the show itself," he revealed. Far from restricting design options, though, this can open them up, argues Levitt. "If we have given a band the basic budget for a show, we can offer them a 'shopping list' of extras - they know the additional cost of anything they might want to do."

One of this year's larger projects has been the debut tour for TV 'Popstars' band Hear'Say - a £1.4million multi-arena show which, like everything else in the pop world,

was expected to show a return. "These days, records sell gigs, not the other way round," claims Whitehead. "Record companies will very rarely agree to cover a shortfall on a tour, which is why it's become so important to keep track of costs." Whitehead believes that his fiscal studies at university have helped him in his chosen career - but that most financial nous is a matter of common sense. "You're either good with money or you're not. Luckily, we both are, and we believe we can do a better job of managing tour accounts than many accountants. Plus, being from Yorkshire, we're both tight bastards!"

Production North's clients have a reputation for using some fairly heavyweight technology on tour - and Levitt and Whitehead are very aware that production gimmicks can start to look the same after a while. "What we don't want is for any tour to look like the last one," points out Whitehead. "Luckily, while some people seem to want a gimmick per song, most ask for a series of looks with a common theme - and it's the band themselves that can really make each tour different. We've never run a tour where anyone has accused us of copying something else."

No discussion about the boy/girl band genre would be complete without a comment on miming. Enter Steve Levitt - this is clearly an issue that he has had to deal with more than once. "Every band goes out with a rackful of samplers and sequencers - but they still get out there and sing for real. The times when samplers became necessary are either because of a complicated studio sound or just plain biology - how the hell can you



£1.4million was pumped into Hear'Say's tour

dance up and down like a lunatic and still hold breath to sing? Of course, you can't compare their voices to the very best in the world - but there's much more to their performance than just the vocal. I've seen the best artists in the world mime for all sorts of reasons, dating right back to when we had to use Fairlights in the 1980s - but even when we have to use samples, they're recorded especially for the live show. The majority of sampled vocals are backing tracks - you can't generate 36 tracks of BVs live. From a sound point of view, you have to remember that this market is 60% show, 40% gig."

The pair have no problem working in a field that receives a lot of flak from the music press. "The only people who ever complain are the ones who haven't paid to get in," insists Whitehead. "One of the amazing things about this type of music is the age range of the audiences. We've done theatre shows to young teenagers, festivals in front of twenty-somethings and gigs where the mums enjoyed it more than anyone else! Some of the shows are becoming so theatrical that older people will come to them as an alternative to the West End."

Being part of a disposable industry does not necessarily damage a band's longevity, according to Whitehead. "Look at the Monkees. Every so often a band will come along that has staying power - who'd have thought that the act that gave you 5-6-7-8 would be going strong five years later (it was Steps, for those of you who have been on another planet since 1996)." There are other factors, explains Levitt, that can contribute to a boy/girl band's notoriously short average lifespan. "People call it a day because they grow up and burn out. TV and other media are much more instant and short-lived than radio and records - so the turnover may become faster." The pair make the point that most young bands' fates are almost completely in the hands of their management and record label - who do not necessarily take a long-term view.

Stories of acts being deliberately submerged to make way for a new set of faces are legion - and Levitt agrees that the individuals in the bands are worked very hard in the name of market saturation and profit. "It's getting very intense. With Hear'Say it's as bad as it's ever been - but similar things happened with Steps

and Boyzone. It's very, very hard work - but they do make money." Not as much, though, as might be assumed. "East 17 and Take That were probably the last bands to be real singer/songwriters - which means that new bands who don't write have much less influence and earn less from their first couple of albums. By the third or fourth record they will have the influence they need - if they last that long. Longevity changes everything."

Between them, Levitt and Whitehead have dealt with just about every genre of modern music - including the notorious Jesus and Mary Chain and, recently, Amy Mann on a low-budget unplugged soft-seater tour. Despite the poor opinion of their clients held by the 'serious' music press, the pair are fiercely proud of their achievements, and refuse to make value judgements on an act. "What sets our clients apart is that, even when everyone else is in it for the money, the bands themselves just want to get up and entertain people - that's why the shows are so good. Whoever the band is, it's that moment of anticipation from 12,000 fans who don't know what you've got in store for them that makes it all worthwhile," says Whitehead. "I used to live for mixing," confesses Levitt, who has now largely hung up his headphones, "but now my favourite occupation is to make a band's manager feel that he's getting the best thing since sliced bread - all he needs to do is add the act."

So do the Production North duo see themselves as some kind of musical dream factory? "Not at all. Up there on stage is fantasy - what we deal with is the reality behind it."

Photos: Mike Mann

colourhouse

LIGHTING PRODUCTION
FOR CORPORATE EVENTS
DESIGN & RENTAL

The Best Service
The Brightest Solution

TEL: +44 (0)20 8254 4880
FAX: +44 (0)20 8254 4881

design@colourhouse.co.uk
www.colourhouse.co.uk

Alistage

MODULAR STAGING SPECIALISTS

Perspex topped "Light Decks" now available

sales@alistage.co.uk
www.alistage.co.uk
T: 020 8808 5005
F: 020 8801 9851

Rubber Box Co.

THE RUBBER BOX CO IS A SPECIALIST MANUFACTURER OF RUBBER POWER DISTRIBUTION BOXES FOR THE SOUND, LIGHTING AND EVENTS INDUSTRIES.

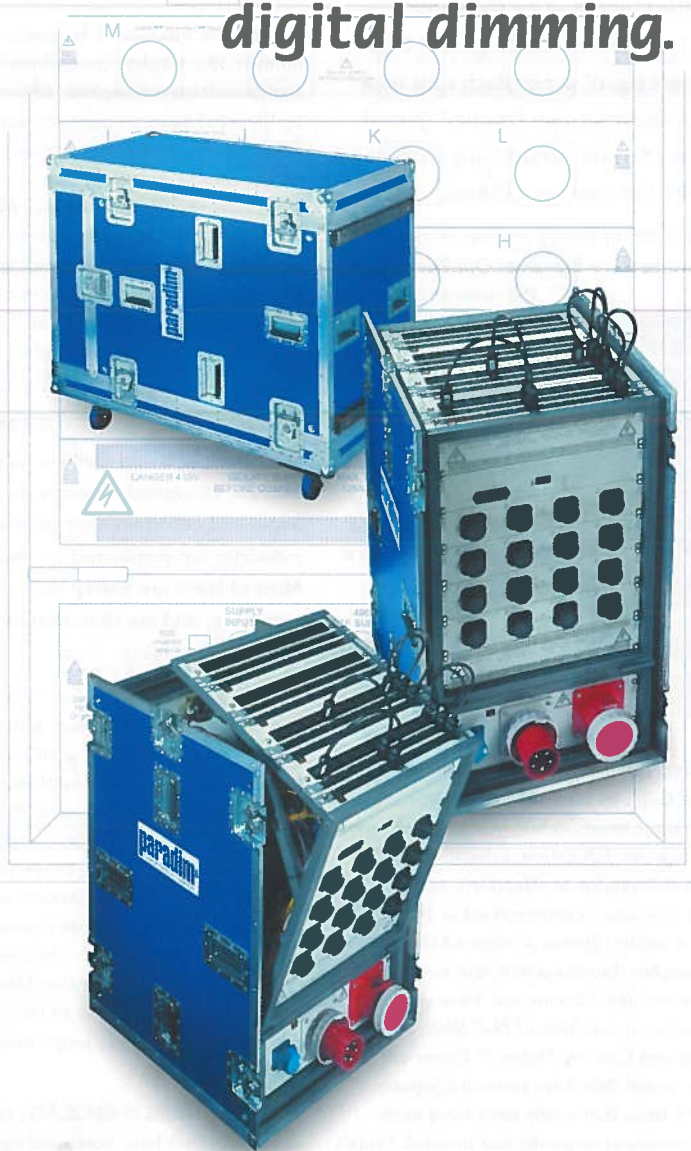
FROM 16A TO 400A, DOUBLE INSULATED AND WEATHERPROOF

TEL/FAX: +44 (0)1282 830965
E-MAIL: INFO@RUBBERBOX.CO.UK
WWW.RUBBERBOX.CO.UK

paradimTM

QPACK DIGITAL DIMMER

Setting the
standard in
digital dimming.



- 48 channel source including 36 x 10Amp digital dimmers plus 12 non-dim circuits
- Fully patchable to 96 outputs via hot-patch (all leads supplied)
- Socapex or Harting type output connectors
- Switchable 30mA RCD protection
- Back-illuminated LCD status displays
- Quality heavy duty roadcase
- Phase healthy & earth/neutral fault indicators
- Clam style chassis.
- 125Amp 3ph Ceeform power input and link
- Battery-operated load tester
- 16Amp Ceeform accessory power outlet
- Fully buffered DMX input & link line with switchable 120 ohm termination
- Independent pre-heat level & dimming curve for each channel
- Roadcase available in choice of colours

 **LightProcessor**[®]
BRINGING TECHNOLOGY TO LIGHT

Phil Ward.

... Audio File

The appropriation of classical music by advertising has had a dramatic effect, not least on the music's identity. It's a process that arguably began with Hamlet cigars' use of Bach's Air on a G-String - albeit Jacques Loussier's jazzed-up version - forever connoting a plume of smoke with JSB's baroque chimes.

IT REMINDS ME of a story a friend of mine told when he worked in a branch of Our Price during the summer of the World Cup in Italy - the one when Gazza's tears captured the heart of the nation. Such was the pull of that TV coverage, introduced every night by operatic favourite Nessim Dorma, that it led to frequent customer enquiries in my friend's shop along these lines: "You got Pav-rotty's 'World Cup' mate?"

NOT EVEN, NOTICE, "the World Cup song" - just 'World Cup', by Pavarotti, a new title, new identity, instant smash. A hundred years of Tony Blair's 'Education, Education, Education' could not establish Turandot as effectively as that. Packaging, it seems, is as important as the contents. A second glance at some of the more recent examples throws up delicious new shop-counter ironies like, "Excuse me, have you got Elgar's 'Buxton Spring Water? No? Well, how about 'Daewoo Cars' by Mahler?" Other current campaigns reveal their true cultural signposts, and suggest titles that surely must have been what the composer originally had in mind. Fauré's 'Lou-Lou Perfume', for example, and 'Kenco

Coffee' by Cantaloupe. How about Saint-Saëns' 'Nissan Primera', and - a rhapsody, of course - Gershwin's 'Galaxy Chocolate'?

WHEN THE PRODUCT features a sequential number, like classical compositions do, the transformation is complete: hence, 'Chanel No.9' by Vivaldi. Future researchers hunting down Chanel's 1 to 8 in the oeuvre may be excused, surely. And when the queues have died down for Holst's rousing 'British Airways', Mozart's 'Citroën ZX' and 'Alton Towers' by Grieg, someone will ask my friend in Our Price what that stirring chorale is, currently booming out of the in-store sound system. "That?" he'll say, "why, that's Beethoven's 'Pirelli Tyres', mate . . ."

Notwithstanding Harman and Mackie, which, like queen ants and Gulliver, appear bigger because all around them are so small, the pro audio and entertainment technology industries are dominated by small businesses. Most of them are entrepreneurial, not corporate, and are therefore subject to small-business economics.

AT THE MOMENT, the Centre for Economics and Business Research is saying that last year's small-business borrowing went up by 14% - largely to counter poor cashflow in the pre-September 11th recession and the post-September 11th panic. This compares with only an 8.5% rise in borrowing in the six years from 1995 to 2001. The conventional wisdom is that small businesses miss out on consumer booms - such as occurred last year - because their customer base is usually other businesses, not the end consumer. The effect of this is exacerbated during recession, as the larger business clients tighten their belts.

THE PROGNOSIS IS GLOOMY, then, for any companies that have borrowed significantly in order to ride out the recession - if the economy

fails to pick up. London has already seen the first rise in small-business failures in three years, and tends to set the trend for the rest of the country - especially when the trend is downward.

TRADITIONALLY, though, pro audio has benefited from consumer booms in entertainment - bucking the trends outlined by the Centre for Economics and its ilk. Most manufacturers and service companies in pro audio are never too far away from the end consumer, even if that consumer is a highly specialised professional. It has always made the industry special, in a way that no one in petrochemicals will ever understand. The question is, therefore, one that invites the maximum use of angling metaphors: can the minnows of entertainment technology swim close enough to the warm waters of consumer confidence to keep the sharks at bay?

I'm increasingly interested in a subject hardly anyone has talked about despite decades of high-profile, parallel development. A couple of recent moves have highlighted exceptions that have - so far - proved the rule: that domestic speaker systems inhabit the planet chalk, while professional speaker systems seem indigenous to the planet cheese.

IF YOU CONSIDER what's been going on inside the cabinets all this time, this is weird. Everyone I've ever known willing to spend a four-figure sum on their hi-fi speakers has always held up the example of 'studio' or 'pro' quality as a yardstick, overlooking the complementary fact that many a studio would pay considerably less for its speakers and be perfectly happy. Notwithstanding the technical niceties, this should at least mean that people who know what they're doing can sell to both markets. I wouldn't expect to see Genelec on sale in Dixon's, but . . . hang on, yes I would. Even Genelec has honed its art down to magnetically shielded 'multimedia' models that you can rest on a beer mat.

WELL, IT COULD BE that things are changing. In the footsteps of Dynaudio Acoustics, Japanese firm Fujitsu Ten recently launched its Eclipse TD monitors at Abbey Road, no less, transplanting its in-car audio experience to pro in "a return to first principles" of acoustic design. Meanwhile, IAG Professional has consolidated its Wharfedale brand into zeitgeist-defining pro divisions: Wharfedale Professional, for live performance, and Wharfedale Systems, for installation. I'm sold on this, even though the brand name itself conjurs up an indelible image of my Uncle Ken sitting with his pipe in an armchair in Lancashire, listening to 'Sing Something Simple'. If he's happy and I'm happy, the world is yours.

"Domestic speaker systems inhabit the planet chalk, while professional speaker systems seem indigenous to the planet cheese."

Lightfactor Sales

source & application

a complete service

LDR Italian
**Stage
Luminaires**

Quality range including profile, fresnel, pc, linear flood & follow spot.

www.lightfactor.co.uk

Tel: 020 8575 5566 Fax: 020 8575 8678 Email: info@lightfactor.co.uk



MIRAGE WIBVGE

Colour Mixing System

**65,000 COLOURS
AT THE TOUCH
OF A BUTTON**

Colour is an everyday choice, what colour wall coverings? what colour furniture? what colour curtains? Not only are we faced with these decisions, we actually enjoy making them! But styles change, moods change and even the time of day can effect the choice of colour at that moment. How wonderful it would be to be able to alter the decor at the touch of a button to suit your mood.

"Cool Blue" for those hot nights, "Warm Red" for the cool ones, "Pale Pink" to soften a hard day and Oh! if only those artificial plants could look a more vibrant green.

Imagine this thought pattern:
I think I'll have this room Red tonight. Mmmm! that's nice but a little paler I think. Excellent! but not as bright as that I'd like it to be more subdued. Perfect. !!! I'll change it again later when we have the party!! Maybe I'll even have the lights changing in time with the music!

This is not fantasy or imagination, this is MIRAGE. A new light fitting with almost limitless applications.

**IF YOU'RE SEEING EVERY COLOUR OF THE RAINBOW
IT'S PROBABLY A MIRAGE!**

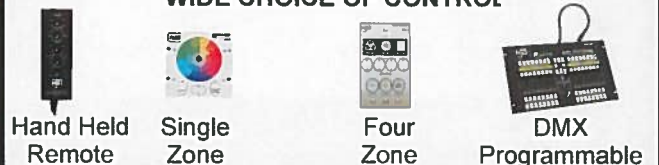


Over 65,000 colours produced from one head. Fully Dimmable. Mains version controlled by DMX or a choice of remote controls. 12V version controlled by DMX, 0-10V, MIDI and a choice of remote controls. No moving parts. Can be surface mounted or used with a choice of fixings including Downlighter, Uplighter, Uplighter Shroud, Hanging bracket, Truss Mounting. Choice of lamps and beam angles. Up to 64 heads on one mains power pack Extruded aluminium case.

WIDE CHOICE OF FITTINGS



WIDE CHOICE OF CONTROL



N.J.D. ELECTRONICS
10-11 Ascot Industrial Estate,
Lenton Street, Sandiacre,
Nottingham NG10 5DJ United Kingdom
www.njd.co.uk

Tel: +44 (0) 115 9394122 Fax: +44 (0) 115 9490453
E-mail: info@njd-electronics.demon.co.uk

MB120
500g
707 Facets
120mm

MB200
1Kg
1964 Facets
200mm

MB300
2Kg
4418 Facets
300mm

MB400
4Kg
7855 Facets
400mm

MB500
6 Kg
12273 Facets
500mm

MB800
15.5 Kg
31420 Facets
800mm

MB1200
34 Kg
70695 Facets
1200mm

MB1500
57 Kg
110460 Facets
1500mm

MB1800
90 Kg
141880 Facets
1800mm

Mirror Balls

Manufactured from top quality materials. 8mm mirror glass facets. The smallest facets available from any manufacturer for more reflections per ball.

Available in 120, 200, 300, 400, 500, 800, 1200, 1500 & 1800mm diameters (5", 8", 12", 16", 20", 32", 48", 60" & 70").

Also half mirror balls, mirror display accessories etc.

Mirror Ball Rotators

240V AC with secured output shafts for maximum security.

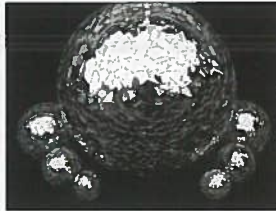
Std. SWL 5kg (Tested to 50 Kg)
or 400mm mirror ball (16")
1 rpm or 2 rpm 110/240v AC
Dimensions: 99mm Dia Base x 40mm H
Weight: 200g Order Ref: **MBR1/2**

H/D SWL 25kg (Tested to 650 Kg)
e.g. 500 or 800mm m'ball
20" or 32"
Dimensions: 187mm Dia Base x 82mm H
Weight: 1 Kg
1 rpm or 2 rpm 110/240v AC

Order Ref: **HDMB1/2**



Order Ref: **SHB** _ _ _



Shatter Balls

Shatter Ball specials built to special order. All sizes available.

Super H/D SWL 100kg (Tested to 1600 Kg)
1200, 1500 & 1800mm Mirror Ball
2 1/2 rpm 110/240v AC
Dimensions: 205 x 140 x 113mm
Weight: 4 Kg

Mirror Sculptures available.
Limited only by your imagination.



Order Ref: **TSS**
Twisted Sausage
300mm dia x 500mm H
500mm dia x 800mm H

Order Ref: **DOD**
Dodecahedron
800mm dia



S D E A

LIGHT ENGINEERING 64 EDEN ROAD, LONDON E17 9JY TELEPHONE +44 (0)20 8520 2336 FAX +44 (0)20 8509 1332



DON'T TALK WET! ...but you can now, with the NEW GRIVEN GOBOCLIP!



FULLY WEATHERPROOFED (IP55) FOR EXTERNAL USE!

Goboclip's ability to project images, messages or logos in an outdoor environment opens up a whole plethora of new potential applications. The combination of a 9000hr 150w metal halide lamp and a selectable 19 or 30° projection angle produces a bright and clear image, even over long distances. The image can be static or rotated at three selectable speeds, and Goboclip uses standard 'D' size gobos, metal or glass.

Contact us for full information on Goboclip and Griven's range of colour changing and other architectural lighting.



Ambient Lighting -
UK distributor for Griven SRL Italy.



AMBIENT LIGHTING LTD

Unit 3, Little End Road, Eaton Socon, St. Neots, Cambs PE19 8JH England
Tel: +44 (0) 1480 407427 Fax: +44 (0) 1480 405600 Email: sales@amblight.co.uk www.griven.com

Sennheiser UK to distribute Lab Gruppen

Sennheiser UK is to take on sole distribution of Lab Gruppen's range of power amplifiers and loudspeaker processors. The Swedish manufacturer enjoys an enviable reputation for the quality and performance of its range of power amplifiers; and particularly for its high efficiency switch mode technology models, first introduced in 1987. Sennheiser has grown its sound installation and live sound reinforcement business significantly over the last four or five years, expanding, in particular, the market for the range of DAS speaker products. The addition of Lab Gruppen will enable the company to compete across a wider range of applications.



Tel: +44 (0)1494 551551 www.sennheiser.co.uk

OHM plans new PA range

Pro audio manufacturer OHM has announced preliminary details of a forthcoming range of PA products. The LM series of enclosures will be built in the OHM tradition, with painted birch ply cabinets, and high quality driver and crossover components. A special high efficiency HF compression driver has been used in the 12" and 15", two-way designs, protected by OHM's HF protection system. The portable LM-S sub adds full-on LF extension to the system as required. The range is complemented by the powerful HQ 2002S 1000W stereo switch mode power amp, and heavy duty tripod speaker stands.

Tel: +44 (0)1565 654641 www.ohm.co.uk

Autograph Launches Meyer MM4

Autograph Sales has introduced the latest Meyer Sound product to the UK - the MM4. This compact, wide-range speaker measures just 102mm square and is ideal for providing high quality distributed sound, for delay and fill purposes in theatre-style venues, for example. The MM4 has already been specified for both fixed installations and theatre shows, and will make its UK debut at the Piccadilly Theatre, London, on a new musical production My One and Only - installed under the balcony, as second row delays.

Tel: +44 (0)20 7485 3749 www.autograph.co.uk

DAS Wireless PA

The new DS-12RF from DAS Audio provides an instant plug-in and go solution to a whole range of wireless communication links applications. The DS-12RF is a fully integrated, UHF wireless equipped, two-way self-powered speaker cabinet. The high pressure injection-moulded cabinet boasts a high power handling, low compression 12" low/mid driver and 1" HF compression driver, coupled to a constant directivity HF horn. Internal amplification circuits deliver 150W RMS to the low/mid driver and 50W RMS to the HF compression driver.



An integrated Sennheiser evolution 100 series switchable frequency UHF receiver system can be used with one of a selection of hand-held transmitters or a belt-pack transmitter and clip mic system. A line input can be balanced with the RF receiver signal, using the master gain, line level and mic level controls.

Tel: +44 (0)1494 551551 www.sennheiser.co.uk

Sony's new additions to wireless range

Sony has introduced launched the latest additions to its WL800 Series UHF radio microphone system, using recent innovations to provide increased operating frequencies, bringing greater flexibility for users.



The addition of the 'B' versions comes at the same time as two new products: for ENG use is a new single-unit, camera-mounting dual-channel diversity receiver (the WRR-862B), while a new handheld transmitter (the WRT-847B) with five interchangeable capsule options (female vocal, male vocal, speech, shotgun and ENG) brings greater flexibility to a range of applications. The new additions are all compatible with the existing WL800 'A' and Freedom models, but can operate in any 24MHz frequency block between 470MHz and 862MHz, including the lower TV channel ranges.

New 'B' models include the WRT-822B belt-pack transmitter and the WRR-855B SX camcorder-mounting receiver, which replace the WRT-822A and WRR-855A respectively. New to the Freedom range of products are the WRT-805B belt-pack transmitter, the WRT-807B hand-held transmitter and the WRU-806B multi-channel receiver, which replace the respective 'A' versions. The WRR-805A/B is available in 16 or 24MHz ranges. The existing WRR-820, 840 and 850 multi-channel receivers are now replaced by a new rack-mount receiver, the MB-8N, and a modular receiver plug-in module, the WRU-8N. This system boasts high-speed Ethernet-based communications, auto channel-assignment and simple installation, and does not require an antenna divider for 16 channels or less. Any Sony wireless transmitter (WRT) is now compatible with any Sony wireless receiver (WRR or WRU).

Other new additions from Sony include a new lavalier microphone, just half the size of the popular ECM-77 head, and the SRP-X700 - a combined audio mixer, wireless microphone receiver rack, RGB/video switcher, equaliser, active feedback reducer and power amplifier in a single, compact unit. The SRP-X700 is designed for modern presentation systems which are required to process and switch multimedia sources including microphones, video, DVD and computers. It utilises DSP technology to deliver its extensive range of functions and features industry-standard connectors.

Tel: +44 (0)1256 355011 www.sonybiz.net/proaudio

Dynaglide from Hall Stage

The brand new DynaGlide winch range includes a new concept in 'semi-manual' winches, the DGM system, which provides working loads up to 1000kg, can be driven manually or with an electric hand-drill via a secondary gearbox input, saving time and a lot of effort! The DGH curtain winches now come with a variable speed control system as standard.

Tel: +44 (0)20 8953 3611 www.harknesshall.com

Tomcat UK Increases Prostar Range

Tomcat UK is now stocking an increased range of CM Prostar electric theatrical chain hoists. The 136kg and 272kg swl models are now complemented by 226kg and 452kg swl units. These have the same features as the original versions and also boast the extra capacity without an increase in external size. Different speeds and voltage options are available, including extra fast 10m/min versions.

Tel: +44 (0)151 482 3100 www.tomcatglobal.com

Soundcraft digital console

Soundcraft has introduced the 328XD digital mixing console, which offers dynamics processing on every channel, group and mix path. With the 328XD, Soundcraft has further broadened the desk's functionality from straight sound mixing to production and control of sequencers and desktop synths. This will enable it to be the production control centre for computers, DAWs and dedicated hard disk recorders, including dynamic automation and moving faders.

Designed for use straight out of the box, the 328XD control surface needs little explanation, and virtually all functions are easily accessible through the mixer's unique 'E-Strip'. This can act as a horizontal channel strip, controlling EQ and aux sends, as a dynamics control panel, or as level controls for the tape returns.

The 328XD also boasts a new dynamics feature set, including a gate and compressor/limiter on every channel; configurable direct outputs; two high-resolution Lexicon effects processors; the ability to route effects to groups for recording; total status recall at power-up and improved connectivity.

Tel: +44 (0)1707 665000 www.soundcraft.com

HK Audio VT1 15X bi-amp module

For bi-amped monitor applications utilizing HK Audio's VT1 15X multi-function 15"/2" cabinets, HK has introduced a dedicated VT1 15X Monitor Application Module. This is run in conjunction with the AC 22 Controller and VX2400 power amps.

When run in bi-amp mode, the VT1 15X delivers more headroom and 'cut through'. The AC 22 stereo controller with the VT1 15X Monitor Module provides two channels of two-way frequency crossover with +24dB/octave system frequency correction, with circuit protection from onboard dynamic limiters.

Tel: +44 (0)113 286 5381 www.hkaudio.com

Spherical Projection

Hardware Xenon's new projection balloon is an innovative solution to the problem of high quality projection in lit areas and will be of interest to those in the events and conference sectors. The standard model is two metres in diameter and is placed at the top of a mast 3.4 metres high - ideal for exhibition stands.

At the heart of the system is a 4000W OLS projector, equipped with a wide angle lens which creates a sharply focused and evenly spread image. The projector can hold 100 images which can be scrolled and rotated in all directions.

Tel: +44 (0)20 8848 1387

Praesideo from Philips CSI



Philips CSI has launched the Praesideo public address and emergency sound system, which they believe to be the first fully digital PA system of its kind. It complies with all industry standards, offers easy installation and

software-driven configuration, great flexibility, unlimited zoning and I/Os, message storage functions, remote access, continuous monitoring from central controller and easy integration with other systems and audio sources.

Tel: +44 (0)20 8730 5300 www.philipscsi.com

New ChromaPanel added to Pulsar's ChromaRange

Pulsar's new ChromaPanel is a versatile fixture that is ideal for use in any architectural or entertainment application. The 590mm square panel utilizes 132 LEDs to create a vivid panel of colour, making it ideal for 600mm grid suspended ceilings or decorative wall displays. The high brightness LEDs allow endless colour mixing with effortless crossfading from an infinite colour palette. Each panel features fast response electronics that can be strobed and the LEDs have a rated life of 25,000 hours at full power.

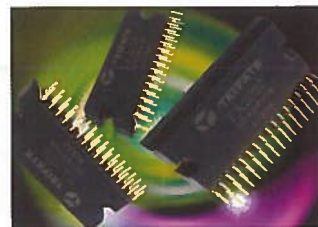
Tel: +44 (0)1223 366798 www.pulsarlight.com

Audio Power ICs from Profusion

Profusion has launched a new audio power IC that will help digital amplifier manufacturers develop digital power audio products.

The launch of the TA2022 Class-T digital power amplifier IC, which uses the company's digital power processing technology (DPP) and offers the audio fidelity of Class-AB and the power efficiency of Class-D amplifiers, has proved to be the most popular addition to the company's new semiconductor range. The compact 32pin SSIP package is a fully integrated solution with internal FETs, benefiting from high quality signal fidelity.

Tel: +44 (0)1702 543500 www.profusionplc.com



Lightfactor Sales

source & application

High End MSR575 series

Studio Color & Studio Spot

Flicker-free electronic ballast, positional feedback, macro-effects. Silent convection cooling.

www.lightfactor.co.uk

Tel: 020 8575 5566 Fax: 020 8575 8678 Email: info@lightfactor.co.uk



We are planning to expand our coverage of the latest developments in new technology. If you have recently launched, or are about to launch, a new product, send details and a photograph to news@plasa.org

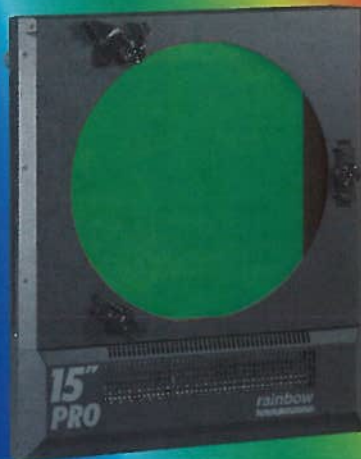
Details of the latest product releases can be found on our daily online news service www.plasa.org/news

rainbow

COLOUR CHANGERS

As State-of-the-art tools, Rainbow Colour Changers are not only fast, silent and precise, but are also reliable, robust and easy to operate. The Rainbow range also represents optimum flexibility - offering different sizes for various luminaires and unique characteristics:

- ✓ Colour Changers for colour strings up to 33 single colour frames
- ✓ Solid aluminium housing with hinged front for optimum access to the scrolls
- ✓ Direct control via DMX 512 with single or multi channel operation
- ✓ Free-addressable, independent channels for colour, fan, motor speed and remote control
- ✓ Variable mounting possibilities via back plates and adaptor frames or universal adaptor
- ✓ Comfortable, easy operation via built-in display (key-operated menu guide)



Worldwide Distribution:

Rainbow Colour Changers GmbH

An der Talle 26-28, 33102 Paderborn, Germany

Tel: +49 5251 14092-0, Fax: +49 5251 14092-90

Email: info@rainbow-colour-changers.de

Website: www.rainbow-colour-changers.de

Rainbow -
the industry standard
for professional colour
changers

prolight+sound show: Hall 8.0 Stand B16

John Watt

Second Take...

John Watt's view from beside the camera

Oh crikey, it's that time of the month already when the editor's tones get a bit more insistent. Hacks and yesterday's lighting designers must learn to make their own fun, which isn't that difficult given the wealth of material to be seen on screen.

IF YOU DO nothing else, watch Frost on Sunday mornings for an object lesson in what not to do with a gobo. Book one: vertical-glazing bars

produce vertical shadows on vertical walls. The other eminently watchable Frost (the sleuth one) nearly forgot another rule about acting with children and animals: last night he was upstaged by a scruffy dog who licked his nose, scratched and panted a lot. I lost the plot as images of several gaffers and scaffolders drifted by. Never mind, Peter Jackson's photography was unobtrusively spot-on. Which is more than can be said for Coronation Street which is currently drifting, picture-wise, in to the murk. A black sky does not a night scene make.

"Like the man said, learn from my mistakes, then you can go out in to the big wide world and make original mistakes of your own. I should know, I've been doing it for years!"

MAYBE THE POOR BLIGHTERS are subject to the same pressures I witnessed first hand down at what used to be Pebble Mill the other week. There they produce 'Doctors', half an hour of which nearly had me being taken away on a stretcher. A full spec' BBC studio lies empty and forlorn whilst the team struggle to transform a collection of old offices and corridors into something that they're not, all within an

impossible schedule. Mind you, why they insist on parking the tea trolley, which attempts to emulate a suite of control rooms, in full sunlight, I'm not sure. Perhaps they too would be depressed if they could actually see the pictures. If there are moving pictures stuck to the tape, then it's onwards to the next set up, only 27 more scenes to do before supper. In case I seem unfair to this team, it's not intended. I imagine all soaps are shot this way, just don't expect me to like it.

I CLAIM AN EXCEPTION FOR EASTENDERS, where the lighting is about the only believable element in the whole thing. A lighting opportunity is being missed here, as the designers haven't realised that a surreal approach is what's required to match the bizarre story lines. It's high time some moving lights were rigged in Albert Square, together with a row of Dominoes facing to camera (as in most LWT audience participation shows). Pyrotechnics could be used with great effect; I suggest a few rockets every time Phil says "you're doin' my 'ead in". How about a followspot or two mounted on an open-topped bus to highlight Peggy's syrup (overseas readers note: syrup is cockney rhyming slang for wig - syrup of figs, wig - simple innit?). Oh, and it should always end in silhouette, then spin away in a quad split whilst the next programme is promoted over the credits, never mind who lit it, who was in it?

THE 'IN' PLACE to be seen last month was at the official opening of White Light's new premises in Wimbledon. I arrived almost before the first cork was out and so got the choice of the chicken legs and a personal tour by the governor himself, John Simpson. This gave him the chance to rehearse before the real luminaries like Rick Fisher arrived. Testament to the buoyancy of the marketplace (he didn't say that) outside of television, this vast warehouse with truckloads of kit was very impressive indeed - there's even space to pre rig-bars, which apparently is the way the West End likes to do it these days. A display of Robert

Juliat followspots took my eye and I made a note to myself to find out more - they might very well do for Eastenders. Even the squillions of miles of cables were methodically coiled and hung, as Mr Micawber (I think) might have said, look after your cables and the lamps will look after themselves. Upstairs boasted yet more space - filled by tranquil offices with some to spare for visitors. There was even an office cat: true it was stuffed, but I couldn't help but feel this was strangely appropriate. I felt some empathy anyway.

ANOTHER UPDATING SESSION for me was a visit to ARRI's facility down at Heston. I have always had a soft spot for their equipment, which in many ways seems to set the standard. Having taken over from Derrick Ross, general manager Renos Louka told me of their imminent plans to move to larger premises, having stretched Spitfire Way to breaking point. Adrian Bottomley, who I'm hoping to meet soon, is the new general manager for lighting sales. Perhaps he can explain the photograph in their broadsheet? I think it's the answer to all our prayers, as the lights shown manage to bend the light round corners. Like André Previn nearly said, all the lights are there, but not pointing in the right directions.

INSIDERS TELL ME that in the last month or so, no less than five lighting people have resigned from Television Centre. I'm a bit surprised that there were five left. Whether the Beeb can withstand this constant haemorrhaging of talent I rather doubt, though the words 'stable' and 'door' come to mind. It seems that their solution is to upgrade console operators and the like, rather than engage experienced lighting directors. I don't blame the console ops for grabbing the opportunity, they would be crazy not to, and indeed some will prove to be creative designers in their own right. Long term, however, it's a shame that the experience, and dare one say, traditions, of the family of designers at the BBC, once second to none in the world, can't be passed on. Not only did the constant quest for excellence in picture making ensure a standard for them, but it also provided a benchmark for the rest of the network. Like the man said, learn from my mistakes, then you can go out in to the big wide world and make original mistakes of your own. I should know, I've been doing it for years!

NOW TO ADD INSULT TO INJURY, Ian Dow, the doyen of the outside broadcast has gone and retired - he must have been lying about his age to work his ticket this early - he's 'nowt but a lad. Anyway, what Wimbledon and Windsor and the Channel Tunnel and a myriad of other OBs will do without this versatile man's organising and lighting, I really don't know. Have a good retirement Ian, lighting will be the poorer without you.

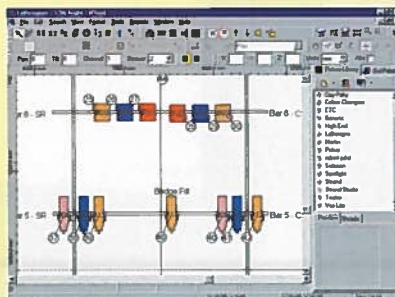
LxDesigner - CAD for Lighting Designers.

Looking for a dedicated P.C. based lighting design package? Does it have to be as easy to use as pencil and paper and reasonably priced?

If so make **LxDesigner** your first choice.

With it's easy to use interface, dedicated lighting design features and report generation **LxDesigner** will reduce your rig design time by hours.

The new *Lite* version offers an ideal entry level package for only **£99.95**.



For full details, prices or to download a copy of the latest version visit our website today.

Tel/Fax: +44 (0)1926 864181 Website: www.lxdesigns.co.uk Email: sales@lxdesigns.co.uk



400

GIOTTO SPOT 400 _ GIOTTO WASH 400 _ GIOTTO PROFILE 400

Behind every great show there are great products.



GIOTTO SPOT 400

- Hot restrike 400W MSR lamp
- Motorized 9°/24° zoom
- Motorized focus
- Variable Iris
- CTO and 1/2 CTO filters
- 30 colour combinations
- Effect wheel (customizable)
- 8 Indexable rotating gobos
- Variable frost
- 2 rotating prisms
- Strobe/shutter
- Electronic ballast
- Absolutely silent operation

GIOTTO WASH 400

- Hot restrike 400W MSR lamp
- Motorized 9°/24° zoom
- Advanced CMY colour generation
- Linear colour conversion filter
- Colour wheel
- Variable dimmer
- Internal rotating shutters (0°-180°)
- Strobe/shutter
- Electronic ballast
- Absolutely silent operation

GIOTTO PROFILE 400

- Hot restrike 400W MSR lamp
- Motorized 9°/24° zoom
- Internal rotating shaper
- Motorized focus
- Variable Iris
- CTO filter
- Colour wheel
- Indexable rotating gobos
- Strobe/shutter
- Electronic ballast
- Absolutely silent operation

Visit us at: **PROLIGHT+SOUND 2002** _ Frankfurt _ 13th-17th March _ Hall 8.0 _ Stand B70 _ **SIB 2002** _ Rimini _ 24th-27th March _ Hall A3 _ Stand 155-160 / 161-166


LIGHT TECHNOLOGY

SGM • Italy • Tel. +39 0721 476477 • Fax +39 0721 476170 • <http://www.sgm.it> • E-mail: info@sgm.it
Lightfactor Sales Ltd • UB6 8PW Middlesex • Tel. 2085 755566 • Fax: 2085 758678 • e-mail: info@lightfactor.co.uk

PERFORMING ARTS TECHNOLOGY



Production Lighting

Event & Communications

Stage Equipment

Hire & Sales

Installation

Technical Support



When it comes to performing and presentation technology, put simply, Northern Light does it, all. You'll find our hallmark on projects throughout the UK and abroad. Now into our fourth decade, we're confident that we've got the expertise. You specify, we'll supply.

Northern Light... the integrated solution.

EDINBURGH
Tel: +44 (0)131 553 2383
Fax: +44 (0)131 553 3296

GLASGOW
Tel: +44 (0)141 440 1771
Fax: +44 (0)141 445 4406

INTERNATIONAL
Tel: +44 (0)1491 577 870
Fax: +44 (0)1491 637 611



email: enquiries@northernlight.co.uk
www.northernlight.co.uk



Highly rated

The NEC has one of the UK's largest stocks of Rigging equipment available for dry hire or installation by professional riggers.

High quality silver or black trussing plus hoists, can be quickly and easily distributed to your event, anywhere in the UK.

the nec
birmingham

www.necgroup.co.uk

For more information please contact:

Derek Wilson +44 (0) 121 767 2223
Dean Smith +44 (0) 121 767 2673
Fax +44 (0) 121 767 3840
e-mail rigging@necgroup.co.uk



avolites.com

modern art

art 2000 Art 2000 - 48 Way

48 Channels at 16 amps each • 12 Channel, hot pluggable modules • Flexible dimming or mains distribution modules • 100% duty cycle on all channels simultaneously • 240µs rise time suppression chokes • Dual isolated DMX inputs with merge and patch • Individual channel faders for Setting Levels or for controlling the Internal Memories • User selectable Voltage Limits and fade profiles • Smooth dimming of low voltage, low wattage or inductive loads • Cost effective, dimming solution

UK -
Tel: +44 (0)20 8965 8522 • Fax: +44 (0)20 8965 0290
USA -
Tel: +1 865 938 2057 • Fax +1 865 938 2059

email: sales@avolites.com





STATE OF GRACE

This winter saw the opening of an extraordinary multi-national production in a brand new, purpose-built theatre in Amsterdam. Mike Mann reports

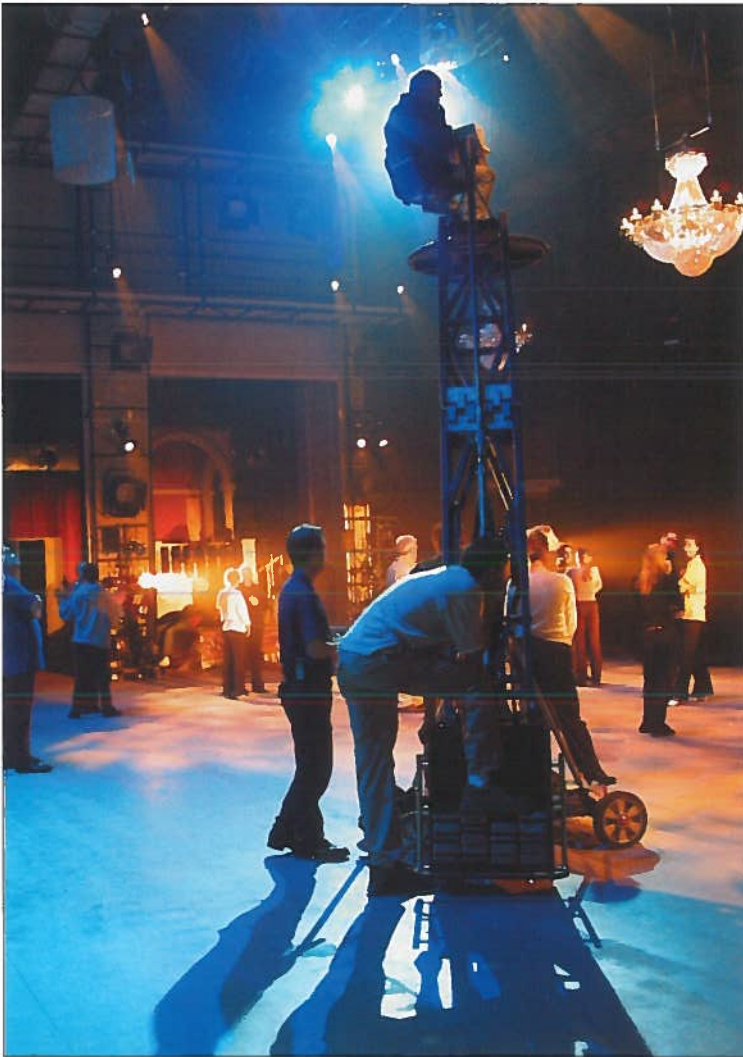
Business entrepreneur Bert Maas has always wanted to pay tribute to one of Hollywood's most glamorous stars - and he finally realised his ambition this year at the opening of *Grace - The Musical* in Amsterdam. Having no previous experience in theatre - other than as a paying customer - Maas argues that his lack of personal and professional baggage was an asset to him in the development of the project. "It's very difficult for someone from outside the theatre world - the business has its own language and they all thought I was crazy at first. But because I didn't have to worry about any past relationships or loyalties to people, I could be completely free to choose my team."

The chosen group is as diverse a bunch of talent as has ever been seen working together in a theatre; American award-winning composer Cy Coleman, Dutch playwright Seth Gaaikema, choreographer Patricia Birch (who was responsible for the memorable moves in the original movie *Grease*) and director Frans Weisz, whose background is entirely in film-making. "I felt that if I approached the musical like everyone else, there would be a thousand people who could do it better than me," he explained. "My goal was to get the best people in the theatre world, and to make it a truly international mix with creative people from America and Europe. The influences of both continents have created something very special."

Having assembled his team, Maas was faced with a problem of location - no suitable theatre space was available for rent to the

unknown producer. "There are two theatres in downtown Amsterdam which already had long-running shows in them, and both belong to Joop van Ende (Holland's biggest theatre impresario). I realised I'd have to build my own," he stated with surprising calm. "I discussed my plans with the Amsterdam planning authority - and they were so enthusiastic that I had a choice of seven locations within a couple of weeks!" Maas used his unique charm on the city planners and obtained permission for a temporary structure adjacent to the Ajax football stadium in South-East Amsterdam - well away from theatreland, but served by excellent public transport and with parking for 25,000 cars on site!

Realising that there were few, if any, high-class restaurants in the area (and that his target clientele would be less than ecstatic about using the nearby burger stalls!), Maas attached an 800-capacity à la carte restaurant to the new theatre, importing a Belgian chef with two Michelin stars to his credit to run the operation. Meals are pre-ordered from a wide-ranging menu, and are paid for at the time of booking tickets to the show. In fact, on the night, no money need change hands at all - this was one of Maas' pet hates about going to 'traditional' theatres. Instead of having to fish around in pockets for change for the cloakroom, programme and interval drinks, they are all included in the fixed ticket price of 125 Guilders (about £34). "The idea is that our guests are treated as they would be at the Royal Palace of Monaco," claims Maas, who has gone further than most to



Left, the stage of the Grace Theatre during rehearsals. Above, the Hitchcock sequence from the production

create an all-enveloping theme. The Grace Theatre's foyer is decked out in marble with light provided by crystal chandeliers; outside there is a miniature 'harbour' with a couple of resident 1950's wooden speedboats and period cars. Once inside, theatregoers are greeted with a glass of Kir Royale, and are served champagne at the intermission. Even the seating (designed by Peter Donders, who was responsible for the entire interior scheme) is unconventional. "I hate it when you have to sit completely upright in uncomfortable theatre seats," exclaimed Maas, "so we have sofas, with a lot of leg space (a generous 1.4 metres, to be precise). I could have put 400 more seats into the theatre - but if it's like everything else it's not special enough."

Although the members of the artistic team speak with a mixture of mainland European and American accents, the Grace Theatre has a largely British technical fit-out - though the set was fabricated in Italy by Arte Scenico, the company that provides Italian broadcaster RAI with much of its scenery.

Stage Electrics' Matt Lloyd was given the task of meeting LD Rogier van Rossum's equipment list in under two weeks, following a contact via the Internet. "I went over to Amsterdam to meet Bert and he confirmed the order two days later," recalled Lloyd. "We had just sent out eight big shows, but somehow we still managed to get all the initial kit onto a truck by the following Thursday." Lloyd confirmed that all three 28-foot trailers were at the venue by the Saturday of that week - a Herculean effort that owes much to the response of key manufacturers. The six-day turn-round also gave Stage Electrics' managing director David Whitehead the chance to re-acquaint himself with a soldering iron as part of the cable-making team!

The list includes eight Martin MAC 600NTs, a further 10 MAC 2000s, over 360 generics (including several Bambinos and Iris 4s not normally

seen outside the studio environment) and some 'period' Strand Patten 149 double and triple scoops. The system also incorporates the largest number of Avolites ART 2000 dimmers installed in a European theatre - no less than 480 channels, plus a couple of brand spanking new CEE17 24-way 32A racks - supplied to the theatre at the same time as the product was being officially launched at the PLASA show! Controlled from an ETC Obsession II console, the system also, for the record, incorporated 11km of multicore and over 5km of TRS cable.

Having shown such commitment to the new production, Stage Electrics was also awarded the exterior lighting contract, illuminating a huge canvas mural by French artist Catherine Feff, which was used to convert the steel-clad theatre building into a replica of the Royal Palace of Monaco. Exterior illumination comes courtesy of 11 Studio Due 2.5kW City Colors.

London-based Orbital was appointed as sound supplier, to an in-house design from Drew Mollison. "I visited a lot of sound companies," revealed Maas, "and I really felt at home at Orbital. Chris [Headlam, Orbital's managing director] was very supportive, giving me all kinds of advice - and he realised that this would act as a showcase for his company on the mainland." One of Orbital's first meetings was with interior designer Peter Donders. Donders is a musician himself, and took a keen interest in the audio process. "Strangely, with so much space, size matters - I wanted to integrate the mixing position into the design of the auditorium, but we needed to keep it as small as possible because of the space we required for the sofa seating," he explained. "I asked the Orbital guys where they wanted the console and they said 'right in the middle of the auditorium' - so that's where it is!"

Once on site, Drew Mollison had to deal with the acoustic problems presented by the new building. "The theatre is built as a two-skin structure along the lines of an industrial building - so we knew from the start that it wasn't ever going to sound like a concert hall. The auditorium is heavily draped and carpeted, but there is a huge void under the raked seating that is largely unused." Having deadened the room itself, Drew incorporated an LCS VRAS virtual acoustics system to allow him to create a more sympathetic ambience. This can be adjusted to suit the setting on stage, giving the designer a large degree of control over speech intelligibility and the fullness of the orchestra sound.



Above, the Yamaha PM1D digital console. Right, sound designer Drew Mollison.
Photos: Mike Mann/Louise Stickland

Sound reinforcement for the show itself is based on a d&b system that appears at first to be rather small for the size of room - though this is not a 'loud' musical, and early tests confirmed the predicted SPLs at every point in the theatre. A centre vocal cluster of two C4 cabinets flanking a single wide-dispersion C7 and MAX downfill (with a trio of C4 subs flown directly above) is bolstered by proscenium left-right systems comprising just two boxes per side (a C7 for the nearfield and a C4 for the further reaches of the audience). d&b C690s and eight small front-fills at stage level provide coverage for the front few rows, and two layers of eight E3 delays are used towards the rear of the 30 metre long auditorium.

The choice of a Yamaha PM-1D digital console for Grace was partly influenced by space restrictions - though this product is rapidly becoming Orbital's mixer of choice, having been used successfully by the company for a little over a year. "The architecture of the PM-1D means that we can split up the inputs," explained Mollison. "There are three input racks (giving 48 lines) in the orchestra pit, two at the radio rack and another in the amp room almost directly underneath the console."

With no outboard units of any kind at the FOH position, Mollison did not need to run audio to this point, other than the standard complement of monitor feeds for the console operator. The show requires some 80 scenes from the automation - not too dramatic by West End standards, but with each scene containing (potentially) every control for every input and output, programming was a complex task. Ironically, given the PM-1D's usefulness as a digital distribution system, all outputs are fed straight to the central amp

room and radiate out as high-level speaker feeds. "It would have been nice to use the desk's distribution facilities," admitted Mollison, "but with the construction project running late, there was not time to split the system up and run separate feeds to multiple amplifier locations." One possibility was to site the racks next to Stage Electrics' dimmer racks at the top of the flytower, but, with a very limited sound crew, Mollison preferred to have them at a more accessible height!

The generously-proportioned amp room houses the PM-1D's DSP engine, the LCS Matrix 3 racks that form the heart of the VRAS system and the d&b and Crown amplifiers - but during the fit-up period it gained a further occupant. Bernard Maas' typically unconventional solution to a temporary insurance difficulty was to bring four Alsatian guard dogs onto the site - and following a petty theft from the amp room, one of the dogs was stationed there every night. The crew very soon learned not to go in to switch the system on before the dogs had been fed!

Following its opening - on schedule - at the end of October, Grace - The Musical received mixed reviews from the critics. Most, however, missed the point of Bert Maas' 'gift to the people of Amsterdam'. Grace is not just another musical - it is an attempt to break the theatrical mould and to offer the paying public a better all-round experience - one which is not just limited to the action on stage. "I think I must have broken almost every rule in theatre," laughs the irrepressible Maas, "but this was my dream - and if other people feel the way I do about going to the theatre, there's nothing that can stop this being repeated all over the world."

www.orbitalsound.co.uk

ORBITAL

Sound hire Sound design Sound advice

FOR RATES ON CD, TEL 020 7501 6368 OR E-MAIL hire@orbitalsound.co.uk. YOU WILL LIKE WHAT YOU HEAR!

CLASSIFIEDS

.....

Don't forget to check out the classifieds section on our website for weekly updates... www.plasa.org/media

DYNAMIC COMPANY SEEKS MOTIVATED INDIVIDUAL

Many of the key players in the industry use Lighting&Sound International to recruit new members of staff. If you are looking to appoint new people, then look to L&SI as the place to do it.

For further details contact Barry or Jane on +44 1323 418400 or e-mail media@plasa.org



Taylor-Phillips

Recruitment Consultants

P O BOX 230, Smarden, Ashford, Kent TN27 8ZG

Tel: +44 (0)1233 770867

Fax: +44 (0)1233 770176

Mobile: 07899 968 616

E-mail: julie@taylor-phillips.co.uk

We are a Recruitment agency specialising in recruiting High Calibre staff. Are you looking for a change in direction?

We have access to unadvertised positions within some of the most prestigious national and international organisations in the industry.

For employers we promise to:

- ◆ Only put forward quality candidates
- ◆ Subscribe you to our monthly candidate e-mail list
- ◆ Give you our service free, you only pay if you employ a particular candidate

For candidates we promise to:

- ◆ Listen to how you want to develop your career
- ◆ Put you forward for positions which fit your requirements and skills

For all the following positions please call Richard on 020 8986 7980 or e-mail: richard@taylor-phillips.co.uk

Pro-Audio Field Sales: North

Salary £22-30K plus Comm

This world-leading manufacturer of studio recording and processing products is seeking an experienced and aggressive UK sales professional with a sound understanding of digital audio technology and studio practice, and the energy and commitment needed to succeed. Job ref: AS199

Export Sales Manager: Bucks

Salary £35-45K+

This leading British manufacturer of broadcast electronics now seeks a technically well-grounded sales manager to manage and develop their business in the Asia region. Extensive travel, together with substantial autonomy, offered for the right candidate. Job ref: BES1815

Audio Product Manager: M4 Corridor

Salary £30K+

This brand-leading professional and consumer audio manufacturer seeks a technically qualified product manager to support existing market channels and develop new ones through the effective liaison between customers, sales, marketing and product development functions. A thorough understanding of digital audio and a willingness to travel are both critical. Job ref: AM1859

Technical Service Supervisor: Middlesex

Salary £22-30K+

Our client seeks an experienced technical service manager with hands-on experience to establish, maintain and monitor a national network of out-sourced service operators. Job ref: AT1859

Audio R&D Engineer: Oxford

Salary £18-22K+

This leading British manufacturer of recording and mixing consoles is seeking to recruit a graduate or similarly qualified engineer to join an established product development team. Working in a multi-disciplined environment will provide an ideal opportunity to develop individual speciality. Job ref: ADE1824

Video R&D Engineer

Salary £25-35K+

Our established client supplies leading electronic control and processing systems to a global network of television and broadcasting organisations. They now seek an experienced video development engineer to join the existing engineering team. Job ref: VDE1815

For all the following positions please call Ian on 01233

770161 or e-mail: ian@taylor-phillips.co.uk

Commercial Audio Sales: London

Salary £30K subject to experience

Our client, a fast growing audio systems supplier specialising in sound reinforcement, installation and AV systems, is seeking to recruit a professional with stadium and retail environment audio experience. The role involves both office-based and field sales work and requires a professional, enthusiastic and results-driven approach, combined with appropriate skills and experience. Job ref: TPAS1330

Sales and Marketing Vacancy: Scotland

Salary £20K+

Established theatrical supplier is looking for someone to develop both sales and marketing for the company. The ideal candidate will need to be capable of standing on their own two feet and applying common sense. Applicants must be skilled in marketing, and a basic technical knowledge would be an advantage. Job ref: SIM Scot

Project Manager: London, Venue

Salary £30K+

This established rigging company is seeking a very experienced contracts manager to oversee all aspects of the company's London contracts. The successful applicant should be highly experienced in overseeing all aspects of temporary contracts from health and safety, get in/get outs, rigging and power. Job ref: CM280

Project Manager: Northern England

Salary £25-30K

This established installation company is seeking a very experienced contracts manager to oversee all aspects of the company's lighting contracts. The successful applicant should be highly experienced in installation contracts, the positioning of intelligent lighting, and commissioning. Job ref: TPCM262/2

Health and Safety Manager

Salary £25-28K

An experienced H&S officer is sought to handle all aspects of this busy rigging company's work, including the daily overseeing of warehouse and on-site health and safety issues. The role also involves the investigation of the company's safety practices, advising the directors as to changes in the law and increasing the safety awareness of all employees. Job ref: H&S

For all the following positions please call Julie on 01233

770867 or e-mail on julie@taylor-phillips.co.uk

Field Service Engineer: Midlands

Salary up to £22K dependent upon

experience

A highly professional installation and service provider is seeking very high quality candidates capable of solving product and contract problems/issues. The successful candidate must have at least 2 years' relevant experience on fault-finding of various forms of lighting and sound equipment. Training will be provided on products that the candidate may have not used in the past. All candidates must be capable of working under their own initiative and of organising their own priorities when necessary. Job ref: SE506/2a

Project Manager: 1 x North, 1 x South

Salary £25-30K

This successful company is seeking professionals who are able to specify and design audio, visual and lighting systems in entertainment, as well as commercial applications. The successful applicants must have previous track record/experience in system design and applications. Job ref: PM506

All applicants should send a CV, along with a hand-written covering letter, explaining why you would suit the position, along with latest salary package information.

For the latest positions check our website www.taylor-phillips.co.uk



Essential Lighting Group provides a complete lighting service including design, equipment rental, crew and logistics to the conference, exhibition and special event industries. We also stock a wide range of automated lighting and control equipment, and are currently recruiting for the following position

Automated Lighting Technician

Responsibilities will include maintenance, preparation and servicing of a broad range of automated fixtures, control and ancillary equipment. Whilst training would be on offer, candidates would be expected to have a good working knowledge of current automated lighting. The applicant will require good IT skills, the ability to process and maintain paperwork systems. Basic analytical and faultfinding skills are essential as is attention to detail and the ability to work under pressure.

Good communication skills and initiative are needed in order to assist in technical support in on-call situations. If you require more information about this role please call Martin Lubach on 020 8335 6000.

This is a great opportunity for a positive and self-motivated individual to join a dynamic and dedicated team. Salary is negotiable, depending on experience.

Please apply in writing, enclosing a current CV to:
Helen Peacock, Office Manager, Essential Lighting Group Ltd
 Unit E, Imber Court Trading Estate, Orchard Lane, East Molesey
 Surrey, KT8 0BY www.essential-lighting.co.uk

AUDIO STOCK CLEARANCE

Due to a massive stock clearance, we have the following audio equipment available for sale

Ashly 3 x Processors 1 x VCM88	Community 6 x Speakers
Audio Telex 7 x Stereo Mixers 1 x Microphone	Sound Advance 6 x Speakers
Carver 2 Amplifiers	Ultimate 1 x Support Stand
	Crest 4 x Amplifiers

THE EQUIPMENT IS NEW AND STILL BOXED

We're not looking for the list price, but we are interested in offers. Contact us now, via the PLASA Office, on +44 1323 418411 or e-mail sales@plasa.org



Supplying professional dimming, control and custom products to projects encompassing theatres, TV studios, schools, opera houses and cruise ships throughout Europe, ETC prides itself on its commitment to service and to its staff, who work with both dealers and end-users. We are looking for two motivated and focused individuals to join our team:

Project Manager (ref PM)

We need a highly motivated and focused individual with proven project management, system design and client liaison skills, who is comfortable working in an international environment.

The right applicant will have a natural ability to work in an organised manner, meet deadlines and work intuitively. Experience with ETC equipment would be beneficial.

CV, with salary and notice requirements, to Valerie Price, ref PM, ETC Europe Ltd, Unit 5 Victoria Industrial Estate, Victoria Road, London, W3 6UU.

Field Service Engineer (ref SE)

We also need a customer-focused Field Service Engineer who will provide on site service, customer training, in house phone support, upgrades and installations.

The ideal applicant will have a background in theatre lighting and strong engineering and/or electronics experience. They will exhibit strong interpersonal, computing and organisational skills and be keen to travel. Knowledge of ETC products would also be beneficial.

CV, with salary and notice requirements, to Richard Lambert, ref SE, ETC Europe Ltd, Unit 5 Victoria Industrial Estate, Victoria Road, London, W3 6UU.

Closing date for both positions is 30 March 2002.

L&SI DIRECTORY

Centre Stage Engineering Ltd
engineering with expertise and experience

- > Motorised & manual winches tel: +44 (0) 1842 752 020
- > Power, c/w & hemp flying systems fax: +44 (0) 1842 752 081
- > Elevators and revolves e mail: info@centre-stage.co.uk
- > Maintenance & LOLER inspections web: www.centre-stage.co.uk

P.A.music
Lighting-Sound-FX-Video

Whatever you are doing!
We have the Lighting,
Sound & FX Technology
to make it a Success!

Hire & Sale
Repair, Mail Order & Export
172 High Rd, London N2 9AS
+44(0)208 883 4350

FOR SALE
GRIVEN SPILLO HMI 1200

Fixed position
(manual vertical angle adjustment)
searchlight which projects a
single beam that moves in a
fixed angle oval arc.

On board speed control.
HMI 1200 lamp (not included).
Highly suitable for lower budgets,
particularly for fixed installation
in retail shops, discotheques,
cinemas etc.

As new, unused!
£1,000 ono

For more information call
+44 (0)1323 418400
or email: barry@plasa.org

Le Mark GROUP

Tel: +44 (0)1480 494540
Fax: +44 (0)1480 494206
Email: info@lemark.co.uk
Web: www.lemark.co.uk
Web: www.pallabel.com

PRODUCTS FOR THE GLOBAL ARTS AND ENTERTAINMENTS INDUSTRY

Self-adhesive Tapes and Accessories • Custom Gobos in Steel or Glass
Manufacturers of Printed Labels and Effects • PAL labels
Distributors for GAM and City Theatrical

harkness hall online
visit our all
new web site

FOR:

- PRODUCTS and SPECIFICATIONS
- PRICES
- ORDERS
- QUOTATIONS
- LATEST NEWS

Find out more about
the biggest name
in stage and screen
www.harknesshall.com

www.plasa.org/news

**LIGHTING
HIRE
SALES
SPECIAL F/X**

STAGE CONTROL LTD
STATION PARADE
WHITCHURCH LANE
EDGWARE, MIDDX. HA8 6RW

TEL: +44 (0)20 8952 8982
FAX: +44 (0)20 8951 4178
E-MAIL: MAILROOM@STAGECONTROL.COM

PLASA Check out all the
news & reviews from
the **PLASA Show**

LIVE AT EARLS COURT
9-12 SEPTEMBER 2001

Log-on to www.plasa.org/show
for post-show news & reviews, award winners, full
exhibitor listing and details on next year's event

W
WIMBLEY
LOUDSPEAKERS

Professional Loudspeaker
Repair Specialists for all
Makes of Power Units

Manufacturers of the
P.T.P. Series: Professional
Range of Chassis
Loudspeakers,
Tweeters and Horns.

Whether you are a
first-time musician, church,
school, disco, theatre,
cinema, showman, sound
company or superstar...
we can help!

Unit A4,
Askew Crescent Workshops,
Askew Crescent,
London, W12 9DP

Tel: +44 (0)20 8743 4567
Fax: +44 (0)20 8749 7957
email: paul@wimblespeaker.demon.co.uk
website: www.wimblespeaker.demon.co.uk

AVW Controls Ltd

Specialist
Stage Machinery
& Motion Control
Engineering

Tel: +44 (0)1379 898340
Fax: +44 (0)1379 898386
www.avw.co.uk

Dial
Sound & Lighting

Abstract - Allen & Heath - Andolite - Anytronics
AVR Downlighters - Bose - Citronic
Clay Paky - Cloud - Crown - Denon - Doughty
Electrovoice - ETC - Fabtronic - Formula Sound
Griven - Inter M - JBL - JEM Smoke - Le Maitre
Martin Audio - Matrix - Mode - NJD - OPTI - Osram
Panasonic - Peavey - Powerdrive - Precision Devices
Pulsar - QSC - Rane - RCF - Rosco - Sabine - Sanyo
ShowMagic - Shure - Soundlight - Stanton - Technics
Trantec - Tri-Lite - Wharfedale - Yamaha - Zero B8

Unit 4G, Euroway Trading Estate, Wharfedale Road, Bradford, West Yorkshire, BD4 6SG
Tel: +44 (0)1274 651600 Fax: +44 (0)1274 651190
www.dlainsoundlight.com e-mail: info@dialsoundlight.com

The
**Fibre Optic
Lighting People**

Par Opti Projects Ltd
67 Stirling Road, London W3 8DJ,
Tel: +44 (0)208 896 2588
Fax: +44 (0)208 896 2599
www.parepti.co.uk e-mail: parepti@cs.com

the staging specialist

Visit us at our
easy-to-use
website at

**WWW.
maltbury
.com**

*Staging, seating and structures
for the performance & event
industries throughout Europe*

**MALTBURY
STAGING**

People who understand performance

0845 130 8881

The
**Fibre Optic
Lighting People**



Par Opti Projects Ltd
67 Stirling Road, London W3 8DJ
Tel: +44 (0)208 896 2588
Fax: +44 (0)208 896 2599
www.paropty.co.uk e-mail: paropty@cs.com

The industry's leading
public relations and marketing
agency for over 21 years

**harmer
public
relations**

eastgate house • eastcastle street • london win 7pa
T +44 (0)20 7580 6334 • F +44 (0)20 7323 4817
E mail@harmerpr.com

Varia Aluminium Rostra



These versatile units can be used to create
stages • podiums • catwalks • walkways



Tel: +44 (0)20 8549 8590
Fax: +44 (0)20 8549 8290



Gecko Image Projectors
Custom Gobo Service
Over 900 Gobo Designs
Colour & Monochrome
Glass Gobos
Digital Light Curtains
Animation Effects
Projection Slides - all formats
Fibre Optic Equipment

284-302 WATERLOO ROAD
LONDON SE1 8RQ
Tel: +44 (0)20 7771 2900
Fax: +44 (0)20 7771 2901
Email: sales@dhalighting.co.uk
www: www.dhalighting.co.uk

S.W.L.

SAFE WORKING LIMITED

PSA Accredited
Training courses for
the entertainment
industry

**RIGGING
ROPEWORK
SAFETY**

Mark Armstrong
Tel: 01234 77 22 56
Fax: 01234 77 22 78

www.safeworking.com

OAKLEIGH CASES Ltd

FLIGHT CASES AND BAGS
CUSTOM MADE

Tel: +44 (0)1707 655011
Fax: +44 (0)1707 646447
E-mail: sales@oakleighcases.com
Web: www.oakleighcases.com



TOURGUIDE SYSTEMS
PROLYTE TRUSSING
ROSTRA
RADIO MICROPHONES

www.gradav.co.uk

UNIT C6 HASTINGWOOD TRADING ESTATE,
35 HARBET ROAD, LONDON, N18 3HU.
Tel: +44 (0)20 8803 7400 Fax: +44 (0)20 8803 5060

WL
WHITE LIGHT
**Lighting Hire
and Sales**

London
Tel: 020 8254 4800
Fax: 0208254 4801
info@whitelight.ltd.uk

North
Tel: 01422 839 651
Fax: 01422 839 773
info@whitelight-north.co.uk

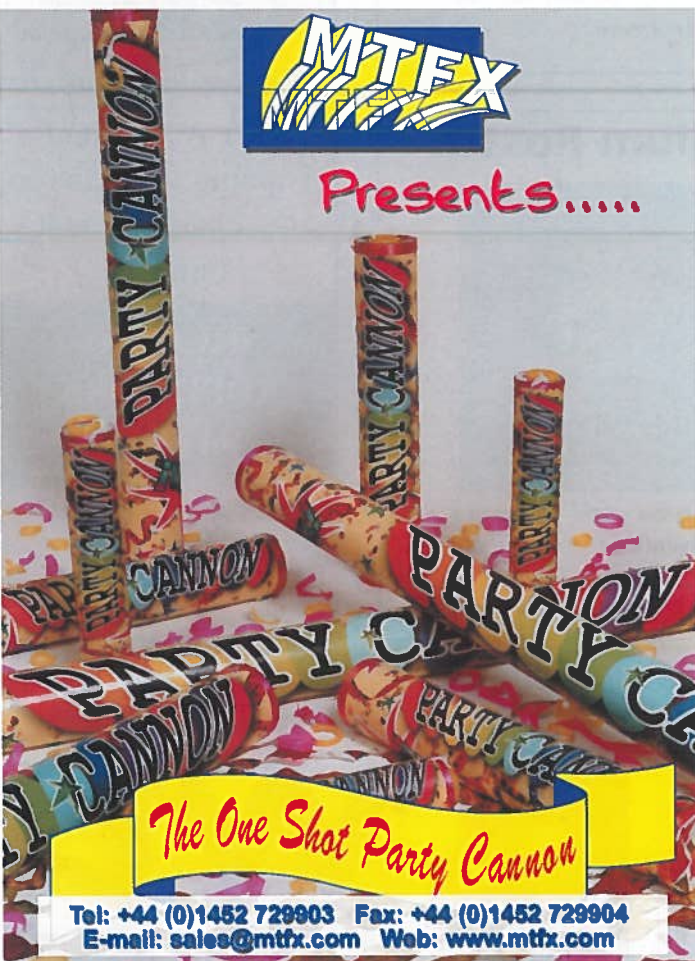
www.whitelight.ltd.uk

NITE LITE HIRE

We are open 7 days a week until late providing a high quality of service whether it's for one special effect or the complete technical production

INTELLIGENT? 4 x Mac 250+ 1 x Avolites Azure 1 x Monitor All leads included £250 week	TRILITE TRUSS £5/METRE, week JEM - SMOKIN? TECHNOHAZE ZR22 DMX £25ea/week	BRIGHT? Par 64 £4ea/week Source 4 25/50 Zoom £8ea/week	Ex-Hire stock at low prices and in good condition.
--	--	---	---

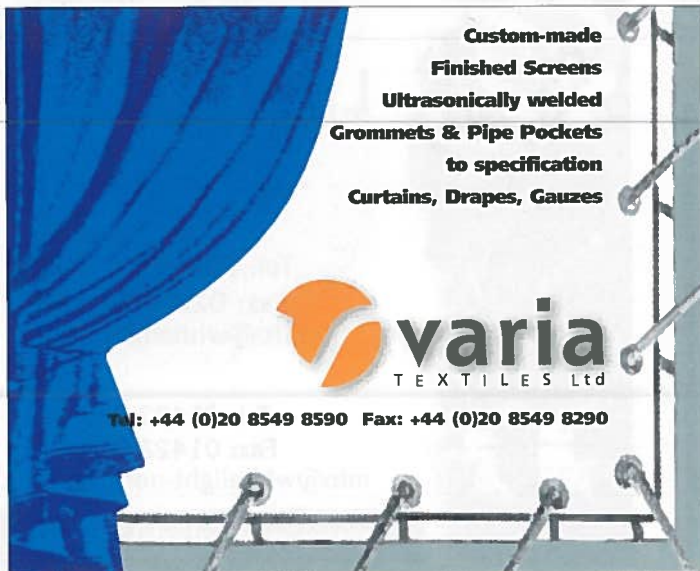
Tel: 01908 586400 Mob: 07980 927153 Sales@NITELITEHIRE.CO.UK
LIGHTING --- SOUND --- POWER DISTRIBUTION --- STAGING --- EFFECTS



MTFX
Presents.....

The One Shot Party Cannon

Tel: +44 (0)1452 729903 Fax: +44 (0)1452 729904
E-mail: sales@mtfx.com Web: www.mtfx.com



Custom-made
Finished Screens
Ultrasonically welded
Grommets & Pipe Pockets
to specification
Curtains, Drapes, Gauzes

varia
TEXTILES Ltd

Tel: +44 (0)20 8549 8590 Fax: +44 (0)20 8549 8290

www.plasa.org

ELECTRONIC SOLUTIONS

Design & Build To Your Specification

- Custom solutions for special projects
- Bespoke equipment for specialist applications
- Product design
- Electronic, electrical, PCB & software design services
- Specialist solution providers to the entertainment technology industry

Tel: +44 (0)20 8683 3433
www.ibexUK.com



RentalPoint2000
Hire Software

32 bit Windows software for Lighting & Audio Equipment, AV Hire/production/staging.

NEW VERSION

Software without compromise, nothing else even comes close!

- The service you expect Blazing speed
 Rock solid reliability

UK: Phone - Rick - Mobile 0468 316612
Canada: Tel: +519 725 4270 Fax: +519 725 3063
Australia: +3 9761 2727 Mob: 0407 541 290
RentalPoint Software: www.hirep.com

LASER VISUALS LIMITED

- HIRE & SALES for any event or occasion
- PC based laser controller (built & designed in house)
- DPSS Green Lasers * 360° Laser Projector Heads
- Scanning Systems * Stand Alone Projector Systems
- Holographic Effects * DMX Laser Controllers

Tel: +44 (0)1795 439913 www.laservisuals.com

For Daily Industry News Headlines...
Log on to
www.plasa.org/news

STAGE-TRACK LIMITED

TRACKS ACROSS THE WORLD

SPECIALISTS IN HAND DRAWN AND
MOTORISED CURTAIN TRACKS,
WINCHUNITS AND SCREENFRAMES.
MANY ITEMS HELD IN STOCK

PHONE OR E-MAIL
FOR YOUR FREE BROCHURE



HARBOUR LANE WORKS
GARBOLDISHAM, DISS,
NORFOLK, IP22 2ST
TEL: +44 (0)1953 688188
FAX: +44 (0)1953 688245
E-MAIL: SALES@STAGETRACK.CO.UK



Light Relief is a fund set up by, and for, the lighting industry, to offer assistance and support with life's catastrophes. We are appealing to companies and individuals to come up with creative ideas to raise money.

If you would like to help, or simply make a donation direct, please e-mail lightrelief@wwg.co.uk

THE GRADAV EMPORIUM

LONDON TRADE COUNTER

We accept

CREDIT CARD • CHEQUE • CASH

written orders from account holders

SLIT DRAPE • GOBOS • SCENERY PAINT
PYROTECHNICS • UV PAINT • FLAMECHECK • CABLES
CONNECTORS • GAFFER TAPE • FILTER • AUDIO MEDIA
LAMPS • FUSES • BREAKAWAYS • IRONMONGERY
GLITTER • MAKE-UP • BLACKWRAP • SMOKE FLUIDS
SASH • SNOW • BATTERIES • TUBE CLAMPS

PLEASE CONTACT US FOR YOUR FREE CATALOGUE

Nice people to talk to

www.gradav.co.uk

UNIT C6 HASTINGWOOD TRADING ESTATE,
35 HARBET ROAD, LONDON, N18 3HU.

Tel: +44 (0)20 8803 7400 Fax: +44 (0)20 8803 5060

WELD-FAB STAGE ENGINEERING LTD

DESIGN & MANUFACTURE OF TRUCKING SCENERY, REVOLVES, LIFTS, ROSTRA FLOORING & TIMBER FINISHING FOR TELEVISION, THEATRE & EXHIBITION SERVICES. VARIOUS EQUIPMENT AVAILABLE FOR SALE OR HIRE.

PLEASE CONTACT BRIAN SKIPP FOR DETAILS

HARBOUR LANE WORKS, GARBOLDISHAM, DISS, NORFOLK IP22 2ST
Telephone: +44 (0)1953 688133 Fax: +44 (0)1953 688144



Principal Furniture Ltd.

Staging & Seating Specialists

Special Offer
Quote ref. LS01 to receive 2.5% off your first order.

Call **01869 324488** for our full colour brochure.

harkness hall online
visit our all **new** web site

FOR:

- PRODUCTS and SPECIFICATIONS
- PRICES
- ORDERS
- QUOTATIONS
- LATEST NEWS

Find out more about the biggest name in stage and screen

www.harknesshall.com

total event production



mail@lasergrafix.co.uk
www.lasergrafix.co.uk
tel. +44 (0)1763 248846

Specialists in image manipulation & F/X

Screens (water & inflatable), lighting, lasers, projection systems

Equipment hire & sale

STAGE TECHNOLOGIES

AUTOMATION

Providing modular automation solutions

Theatre musicals & plays

Trade exhibitions

Visitor Centres

Product launches

Museums

Installation in theatres

& cruise liners

Equipment for sale or hire

State-of-the-art technology to meet your automation needs



Stage Technologies Limited, 22 Highbury Grove, London N5 2DQ United Kingdom
Tel: +44 (0)20 7354 8800 Fax: +44 (0)20 7359 1730 email: automation@stagetech.com

www.plasa.org/news

The **Fibre Optic** Lighting People



Par Opti Projects Ltd
67 Stirling Road, London W3 8DJ
Tel: +44 (0)208 896 2588
Fax: +44 (0)208 896 2599
www.paropty.co.uk e-mail: paropty@cs.com

LIGHTING HIRE & SALES
Philip L. Edwards
(Theatre Lighting)

5 Highwood Close, Glossop,
Derbyshire SK13 6PH

Tel/Fax: +44 (0)1457 862811
E-mail: enquiries@plethltg.demon.co.uk

SOUND & LIGHT SERVICE & REPAIR COMPANY

fast, efficient, service, repair or modification to any professional audio equipment

M 078 5516 3731
T 020 8543 2337
F 020 8542 1219
E slc@studiojo.co.uk

Royal Opera House, Covent Garden, Nederland Congresgebouw, Miami Opera, Shiki Theatrical Company, Japan, The Aotea Centre, New Zealand, Royal National Theatre, London, L'Opera de Paris, Israel Opera, Sydney Opera House, Royal Shakespeare Company, Swedish National Theatre, Hong Kong Academy of Performing Arts, City of Birmingham Symphony Orchestra, Grand Theatre de Geneve, CBS Studios, New Sadlers Wells, London, De Vlaamse Opera, The Grand Opera House, Belfast, Ballet Rambert, Dutch TV Theatre, Royal de la Minnatie, Brussels, I.M.I. Los Angeles, Glyndebourgh Festival, Opera Stadt, Schouwburg, Oost, We, Nieuw, Oost, RIAS Berlin, Royal Festival Hall, London, BBC, The English National Opera, Theatre Collection of Major Theatres

Lighting Technology
COLOUR FAST

Colour Filter Colour Scrolls Any Size Any Time

The Colour Cutting Service By Lighting Technology Group

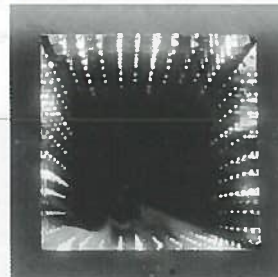
Tel: +44 (0)20 8965 6800 Fax: +44(0)20 8965 0950

welcome to the single source of light

London • Manchester • Newcastle • Paris

Email: info@lighting-tech.com Website: www.lighting-tech.com

LIGHT ENGINEERING



Infinity Panel

Unusual eye-catching illusion - this panel contains a built-in multi-programme controller. Supplied complete with wall mounting bracket and 13amp moulded plug.

Please ring for further details.

Tel: +44 (0)208-520 2336

Fax: +44 (0)208-509 1332

64 Eden Road, London, E17 9JY, UK.



the original
RAT
music stand

R.A.T. (Music Stands) Ltd
16 Melville Road, London, SW13 9RJ
Tel:+44(0)20 8741 4804, Fax:+44(0)20 8741 8949
email: sales@ratstands.com
web site: www.ratstands.com

HAWTHORN
THEATRICAL LTD

hire
DESIGN SALES INSTALLATIONS

MOVING LIGHTS

HPE'S STAGESCANS MAC250'S MAC500'S MAC600'S AND MORE!

LIGHTING SOUND STARCLOTHS STAGING

hire department open 7 days

HAWTHORN THEATRICAL Ltd. Crown Business Park, Old Dalby, Leicestershire LE14 3NQ
Tel 01664 821111 Fax 01664 821119 E mail hth@hawthorntheatrical.co.uk
Web www.hawthorntheatrical.co.uk



CTS/MOTOROLA

CERAMIC SPEAKERS

PULSAR DEVELOPMENTS LTD
MARLOW, ENGLAND
TEL: +44 (0)1628 473555
FAX: +44 (0)1628 474325

The
**Fibre Optic
Lighting People**


Par Opti Projects Ltd
67 Stirling Road, London W3 8DJ,
Tel: +44 (0)208 896 2588
Fax: +44 (0)208 896 2599
www.paropti.co.uk e-mail: paropti@cs.com

Flying by Foxy



Flying Effects for :

Films & Commercials
Corporate Events
Television
Theatre

Give us a call to discuss your ideas
as we have the knowledge and
technology to make even the strangest
requests work effectively & safely.

Tel: 020 8236 0234 Fax: 020 8236 0235

E-mail: mail@flyingbyfoxy.co.uk
www.flyingbyfoxy.co.uk

Almag

<http://www.almag.co.uk>

rise-time chokes
output chokes
emc chokes
pfc chokes

for

light dimmers
electronic ballasts
audio amp smpsus

with


low acoustic noise
options available

e-mail

enquiry@almag.co.uk

Almag Ltd

17 Broomhills, Rayne Rd,
Braintree, CM7 2RG, UK.
Tel: +44 (0)1376-345200
Fax: +44 (0)1376-551917


FOURTH PHASE
Lighting and projection equipment, service and
support for any event.

Fourth Phase London
Unit 3 Beddington Cross
Beddington Farm Road
Croydon, Surrey, CR0 4XH
Tel: +44 (0)20 8665 8500
Fax: +44 (0)20 8664 8819
www.fourthphase.co.uk

a production resource group company

Become a



member . . .

contact Jan Shepherd
Tel: +44 (0)1323 410335
Fax: +44 (0)1323 646905

E-mail:
membership@plasa.org

www.plasa.org/news

Series 2000™ SALES DEALERS:

HISPA-LITE
Madrid, Spain
tel +34 91 616 6422
fax +34 91 616 6425

LIGHT PARTNER
Herning, Denmark
tel +45 97 26 96 00
fax +45 97 26 96 99

LTV GESMBH
Vienna, Austria
tel +43 2236 9003 2110
fax +43 2236 9003 2119

NORSK SCENETEKNIKK a.s
Spydeberg, Norway
tel +47 69 83 73 73
fax +47 69 83 89 30

RMC SHOW SERVICE
Helsinki (Vantaa), Finland
tel +358 (0)9 560 670
fax +358 (0)9 560 67300

SCENETEC AND CO
Vevey, Switzerland
tel +41 21 925 3777
fax +41 24 925 3778

Getting the VL2202™ spot luminaire, VL5™
wash luminaire and the Virtuoso™ DX console
is easier than ever. The Series 2000™
and Series 300™ authorized
dealer network makes
VARI*LITE® products
accessible to
all of Europe.

VARI*LITE®
Express yourself.

The choice is yours.

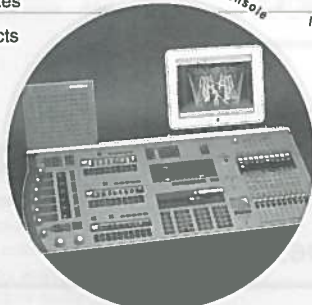
*Whether you want to
rent from a Series 300*

*Dealer or buy from a
Series 2000 Dealer.*

VL2202 spot luminaire



Virtuoso DX Console



VL5 wash luminaire



Vari-Lite Europe, Ltd.

20-22 Fairway Drive Greenford Middlesex UB6 8PW England tel: +44 (0) 20 8575 6666
fax: +44 (0) 20 8575 0424 contact: Simon Roose, European Sales Manager
web: www.vari-lite.com e-mail: info@vari-lite.eu.com

Copyright 2001 Vari-Lite, Inc. All rights reserved. VARI*LITE®, Series 2000™, Series 300™, VL5™, VL2202™ and Virtuoso™ DX are trademarks of Vari-Lite, Inc.

Series 300™ RENTAL DEALERS:

ARENA LIGHTING
Dublin, Ireland
tel +353 1 834 4121
fax +353 1 834 4161

BACK STAGE LTD
Birmingham, England
tel +44 (0)121 327 3919
fax +44 (0)121 327 5774

DELUX THEATRE LIGHTING
Zurich, Switzerland
tel +41 1 485 4242
fax +41 1 485 4244

DP AUDIO
Budapest, Hungary
tel +36 1 208 1070
fax +36 1 208 1072

LIMELITE SRL
Rome, Italy
tel +39 06 916 02081
fax +39 06 910 7732

LITE ALTERNATIVE LTD
Manchester, England
tel +44 (0)1706 627 066
fax +44 (0)1706 627 068

SPECIALISTS FOR LAMPS USED
IN THE THEATRE AND
ENTERTAINMENT INDUSTRIES.



- Premier Brands •
- Fast Efficient Service •
- Excellent Trade Terms •

Tel: +44 (0)113 256 7113
Fax: +44 (0)113 257 2358
E-mail: sales@mico.co.uk

Chameleon pro audio & lighting

HIRE SALES INSTALL REPAIRS
www.chameleon-pa.co.uk
tel. 01530 831 337
fax 01530 838 319



CONCERTS COLLEGES CLUBS THEATRES WORSHIP CORPOARTE EVENTS BALLS PARTIES DRY HIRE

Orton Ind. Est.
London Road
Coalville
Leicester. 01530 831337

EST 1979

PLASA

INTERNATIONAL DIRECTORY

To advertise in this section contact Barry or Jane on +44 1323 418400

FRANCE

Robert juliat

Route de Beaumont
F 60530 Fresnoy-en-Thelle
Tel: +33 3 44 26 5189
Fax: +33 3 44 26 9079
www.robertjuliat.fr

High performance followspots, profiles and other luminaires, digital products and fluorescent systems.

GERMANY

FLASH ART

- ▶ Outdoor Fireworks
- ▶ Stage Pyrotechnics
- ▶ Special Effects
- ▶ Trade
- ▶ Tourservice

FLASH ART GMBH
Tel. +49/(0)521/92611-0
Fax +49/(0)521/92611-21
http://www.flashart.com
E-mail: mail@flashart.com

LMP
Lichttechnik

GILDESTASSE 55
49477 IBBENBUREN
TEL: (49)5451-59 00 20
FAX.: (49)5451-59 00 59

TOUR SERVICE LICHTDESIGN

Hanse Str. 9,
33689 Bielefeld
Tel: 0 5205 22 800
Fax: 0 5205 22 889

Concert, stage, TV and industrial lighting
Design and Production Services

Controlite
Moving Head Systems

Amptown Lichttechnik GmbH - Hamburg
Tel: 40-64600440 Fax: 40-64600445

NORWAY

Compact Light System AS

CLS DMX 16 S
The world's smallest programmable
16-channel DMX mixer
Tel: +47 6134 1438
Internet: www.cls.no

SWEDEN

spectra
LJUSUTYRNING

Tel. +46-8-6692020 Fax. +46-8-6693060
www.ljusutyrning.com info@spectra-ljus.se

THE NETHERLANDS

Flashlight
RENTAL SALES

See ad on page 63

USA

RUSH SERVICE NORMAL!

TMB ASSOCIATES
PRODUCTION SUPPLIES & SERVICES
www.tmb.com
LOS ANGELES
LONDON
NEW YORK
BEIJING

TOMCAT

Staging, Lighting and Support Systems
Serving your tour and fabrication needs in the USA
Tel: (915) 694 7070
Fax: (915) 689 3805

BML Stage Lighting Co., Inc.

Trussing • Ground Support • Rigging
Intelligent Lighting • Sales • Rentals • Service
Special F/X • Transformers • Touring Systems

10 Johnson Dr. Raritan, NJ08869
Ph (908) 253-0888
Fax: (908) 253-9530
www.bmlinc.com

BML Productions Inc.

Staging • Rolling Risers • Soft Goods & Tabs
Barricade • Bicycle Barrier • Metal Detectors

10 Johnson Dr. Raritan, NJ08869
Ph (908) 253-0888
Fax: (908) 253-9530
www.bmlinc.com

STRONG INTERNATIONAL

STRONG INTERNATIONAL, INC.
FOR THE WORLD'S BEST FOLLOWSPOTS
4050 McKinley Street, Omaha, Nebraska 68112
Tel: 402-453 4444 Fax: 402-453 7238

THE COLORAM

Wybron Inc
The ones the pros use.
And use. And use.
TEL: 719-548 9774
FAX: 719-548 0432

ADI
Motion Development Industries

Tel: 707 462 5031 Fax: 707 462 5006

The world performs on Harlequin floors.

FREEPHONE 0800 28 99 32
for FREE datasheets, samples and advice.

Photo courtesy of Pacific Northwest Ballet

STAGE & STUDIO FLOORS
British Harlequin plc, Bankside House, Vale Road, Tonbridge, Kent TN9 1SJ
Telephone 01732 367666 Fax: 01732 367755

www.harlequinfloors.com

PLASA TECHNICAL BOOK SERVICE

Contact Sheila Bartholomew for a full list of books available
Tel: +44 (0)1323 418406
E-mail: sheila@plasa.org
or visit www.plasa.org/books

The Fibre Optic Lighting People

Par Opti Projects Ltd
67 Stirling Road, London W3 8DJ,
Tel: +44 (0)208 896 2588
Fax: +44 (0)208 896 2599
www.paropti.co.uk e-mail: paropti@opt.com

THE COSMIX FROM NEW HORIZONS IS A PROFESSIONAL DJ WORKSTATION.

FEATURES:

- EASY ASSEMBLY FROM FLAT PACK
- DESKTOP BIG ENOUGH TO ACCOMMODATE TURNTABLES AND MIXER IN ANY POSITION
- WIRING CONDUITS FOR DISCREET CONNECTION OF ALL YOUR LEADS
- AMPLE STORAGE FOR OVER 700 12" RECORDS
- LOWER BAYS FOR YOUR AMP, TAPE DECK, MINI DISC ETC.

DISTRIBUTED EXCLUSIVELY BY NEW HORIZONS
UNIT 6 SILICON BUSINESS CENTRE, 28 WADSWORTH ROAD,
PERIVALE, MIDDLESEX, UB6 7JZ.

WEBSITE: WWW.DIRECTIMPORTS.CO.UK EMAIL: INFO@DIRECTIMPORTS.CO.UK
TEL: +44 (0)20 8810 6020 FAX: +44 (0)20 8810 6022



James Eade was first attracted to the world of entertainment lighting whilst 'helping' his father light an amateur dramatics play at the tender age of eight. At school he became the resident lighting designer by default, and became quite proficient at pointing spotlights towards the acting area. By the age of 14, still doing several school plays each year and by now, the proud owner of a copy of Francis Reid's 'The Stage Lighting Handbook', the bug for lighting had well and truly bitten.

University, avidly soaking up every issue of a certain trade journal left lying around the green room. Serving an unofficial apprenticeship under the Chief LX, he learned a great deal about lighting, audio and stage craft in his years in the Midlands. Trying to find a lighting or rigging company with which to serve a sandwich year proved difficult. However, a well-known gobo and lighting effects manufacturer took the plunge and agreed to a summer placement for three months.

Finally graduating in Mechanical Engineering, Eade Senior suggested that a 'proper' job might now be appropriate. After suggesting various high-profile engineering firms as possible candidates, Eade senior was perturbed at James' desire for a career in the entertainment industry. In an attempt to persuade his father that the industry was no longer a collection of hairy old riggers jumping out of battered transits to hurl a few knackered Par cans in the air, they visited the PLASA Show to see the bewildering array of new technology and no small number of clean-shaven business people. With Eade senior suitably impressed, encouragement followed.

After a few fruitless attempts at trying to infiltrate lighting hire companies, his lucky break came through an old school friend whose sister happened to be a dating 'a guy who owns a large AV company'. One phone call and interview later and a job was finally landed.

Three years later, as hire and technical production manager of this busy rental company, James had mastered lighting and sound systems, mostly in the corporate arena and gained a good working knowledge of video systems. Between shows he tinkered with new ideas for widgets, rebuilding dimmer racks and implementing a computerised hire management system. However, the grass appeared to be sprouting greener on the other side of the fence and the temptations of the bigger world beckoned. After a chat with a worldly industry veteran, a suitably challenging job was sourced with a Kent-based design consultancy, promising the variations of project management, lighting and engineering design.

Brief forays followed into the technology behind children's interactive entertainment systems; design, project and patent management ensued for numerous lighting inventions; a plethora of cruise liners for Royal Caribbean involved plenty of lighting, sound, AV and control design and commissioning, as well as in land-based venues.

However, a desire to get back to doing the occasional show and the temptation of being his own boss led James to gently part company with his employers and enter the world of freelance work. He has worked now for several years as a consultant systems engineer, designing and commissioning mechanical and electrical installations for several prominent clients, whilst also spending time manufacturing bespoke lighting and sound control components, as well as the occasional mechatronic system.

During this time, he's been working towards membership of both the Institution of Mechanical Engineers and Institute of Electrical Engineers, with the aim of gaining Chartered Engineer registration with the Engineering Council. The process is ongoing and the penultimate stage of associate member has since been achieved. In support of his quest to be better informed and supportive of the industry, James is an associate member of both the ALD and PLASA, and through a client, a corporate member of the STLD. ■

Lighting & Sound

At the end of last year, L&SI appointed James Eade as technical editor to the magazine. Is he qualified to do the job? Read on...

Aged 18 and with a handsome array of school productions under his belt, Eade decided on university as a way to further his career. Not knowing of any lighting design courses in existence, he settled for mechanical engineering at Coventry University (né Polytechnic). After an incredibly brief spell as local crew at the city's main touring venue, The Student Union, he found alternative work at the local rep theatre, The Belgrade.

During this same period, and in an effort to secure some form of back-up occupation, he joined the Royal Electrical and Mechanical Engineers (V) to decide whether Army life was a way forward. Whilst mixing university, theatre and battle fatigues, he took advantage of some of the Army's fringe benefits, including several spells at the Army's engineering training depot in Hampshire and a successful weekend at the Army's HGV test centre which gained him the qualification that secured his first job after University.

Eventually becoming 'chief casual spark', Eade spent more time at the Belgrade than he did at

Advertisers' Index

ABTT	48	ETC Europe	31	Leisuretec	35	Orbital	81	The Effects Co
AC Lighting	30/38/48/60	E T C UK	34	LGH	32	Osram	IBC	TMB Associates
Aliscaff	32	Flashlight	63	Light Engineering	72	Par Opti	58	Tomcat
Alistage	68	Formula Sound	26	Lightfactor	24/44/64/70/74	PCM	66	Trifibre
Allen & Heath	41	Fuzion	56	LightProcessor	69	Philips	9	Used Flight
Aluminium Access Products	58	Hand Held Audio	63	Litestructures	59	Pulsar	29	Vari-Lite
Ambient Lighting	72	Harkness Hall	52	Look Solutions	23	Ra'alloy	32	Wilkes
Artistic Licence	6	Hayden Labs (Denon)	8/37	LX Designs	76	Rainbow	75	
Avolites	21/78	High End	3/65	Mackie/RCF	IFC	Rubber Box	68	
Bandit Lites	15	HW International (Shure)	11	Martin Audio	OBC	Sennheiser/DAS	39	Classifieds
Beyerdynamic	27	HW International (QSC)	25	Martin Professional	7	SGM	77	Web Collection
Bytcraft	40	InspHire	17	Milos	16	Shermann UK	63	
Chainmaster	20	JBL	53	Navigator	14	Shuttlesound	51	
Clay Paky	13	JEM	33	NEC	78	SIB 2002	42	INSERTS
Colourhouse	68	LDPS	58	NJD	71	Stage Electrics	43	Leisuretec
Compact Light Systems	48	Lee Filters	4	Northern Light	78	Stardraw	10	Showcase International



Millions see him. He only sees OSRAM

Whatever the special effect, OSRAM has the answer with its extensive range of metal halide lamps. With stable colour temperature, the dynamic and vibrant effect enhances any performance. Clearly the stars of the show - HMI®, HTI®, HSD® and HSR®. Contact OSRAM now for information on new additions to the range.

Telephone: OSRAM Customer Service Centre on 01744 812221

E-mail: Photo.optics@osram.co.uk



SEE THE WORLD IN A NEW LIGHT



Shaping the future...

W8L Line Array

the new system that fully
exploits the benefits of both
line array and horn technology



The Martin Experience

T: +44 (0)1494 535312
F: +44 (0)1494 438669
E: info@martin-audio.com
W: www.martin-audio.com