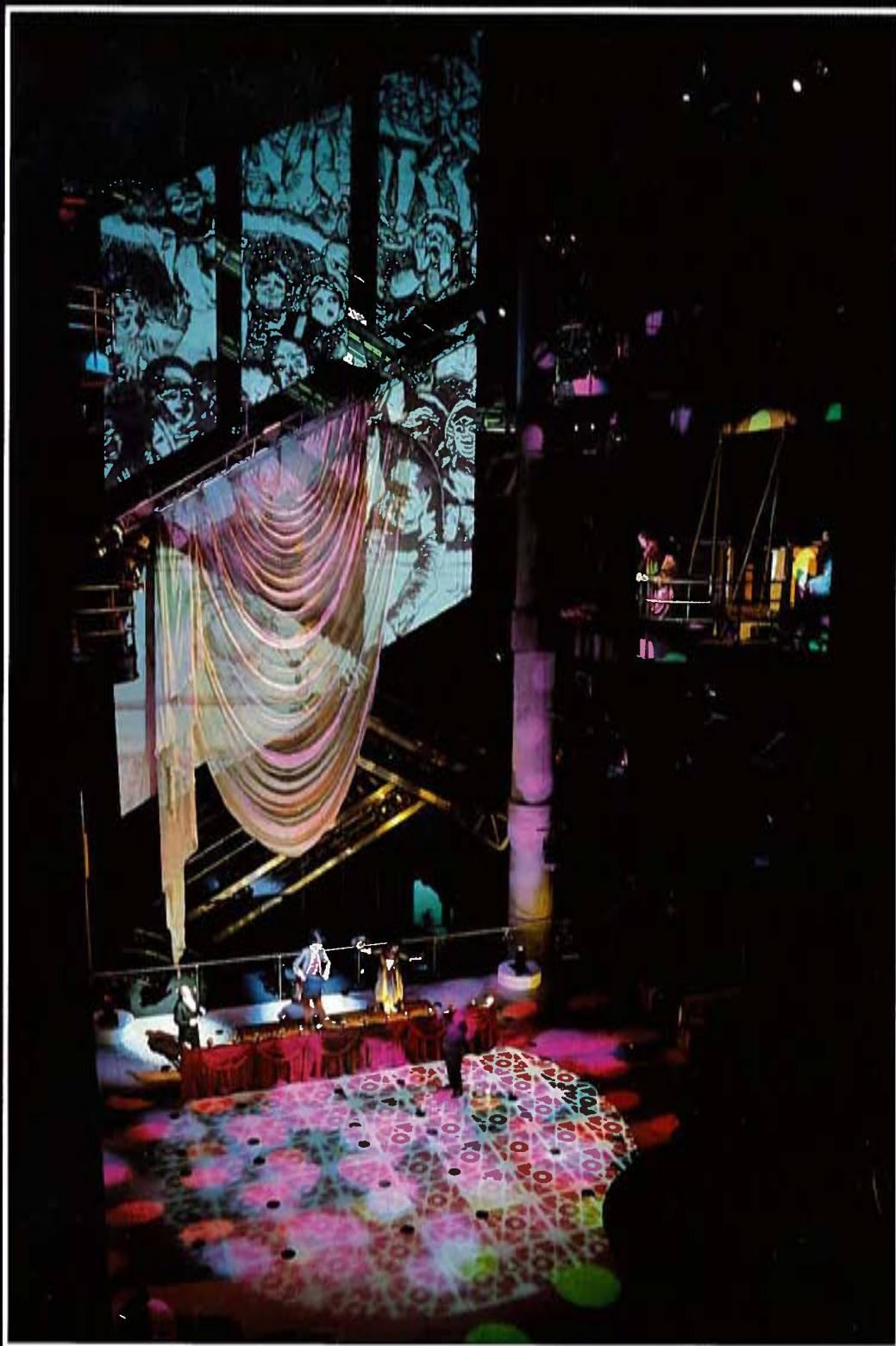


LIGHTING+**SOUND** *International*



Tercentenary Show in the Lloyd's of London building - see cover story page 5

PLASA

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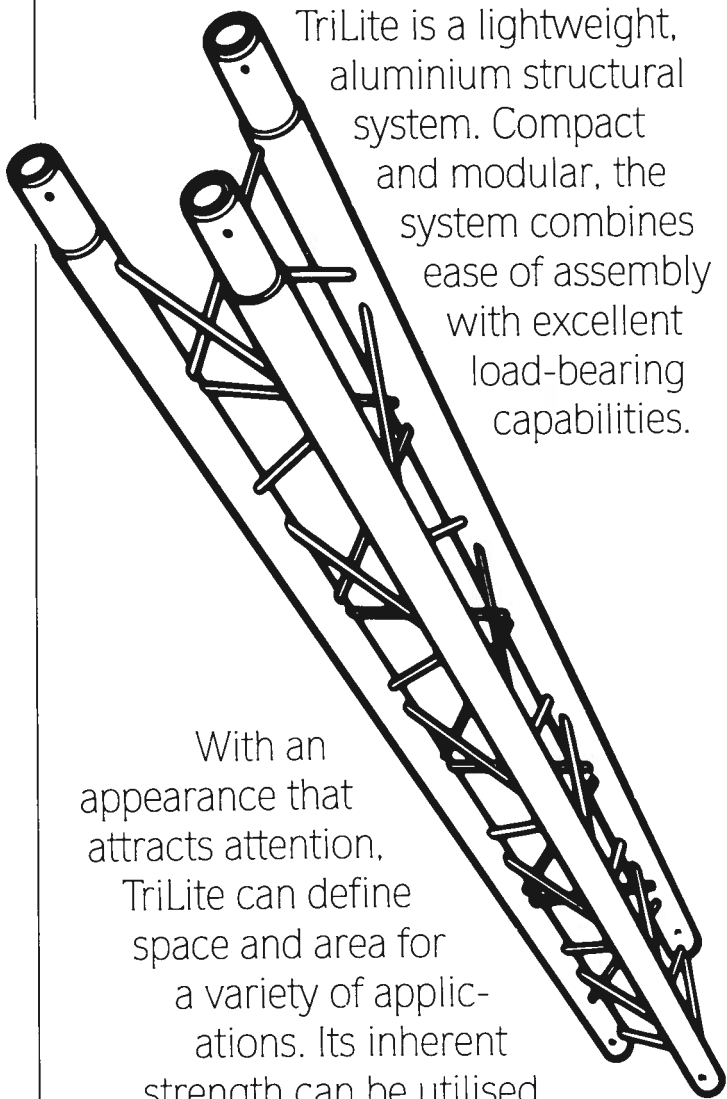
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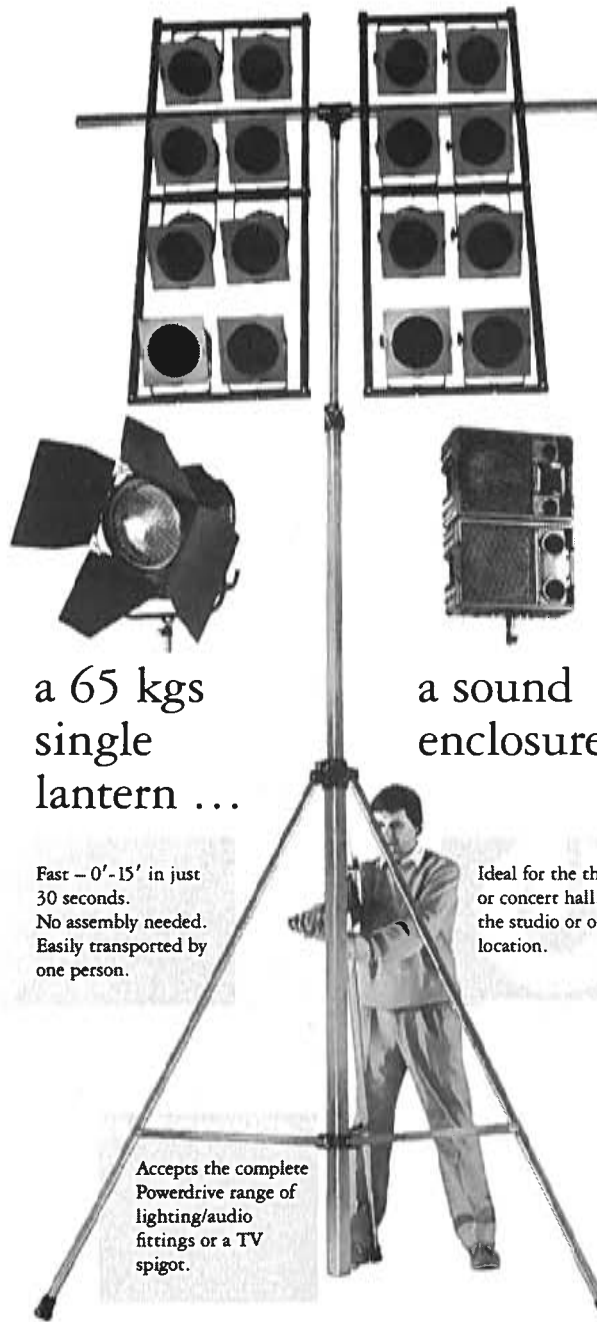
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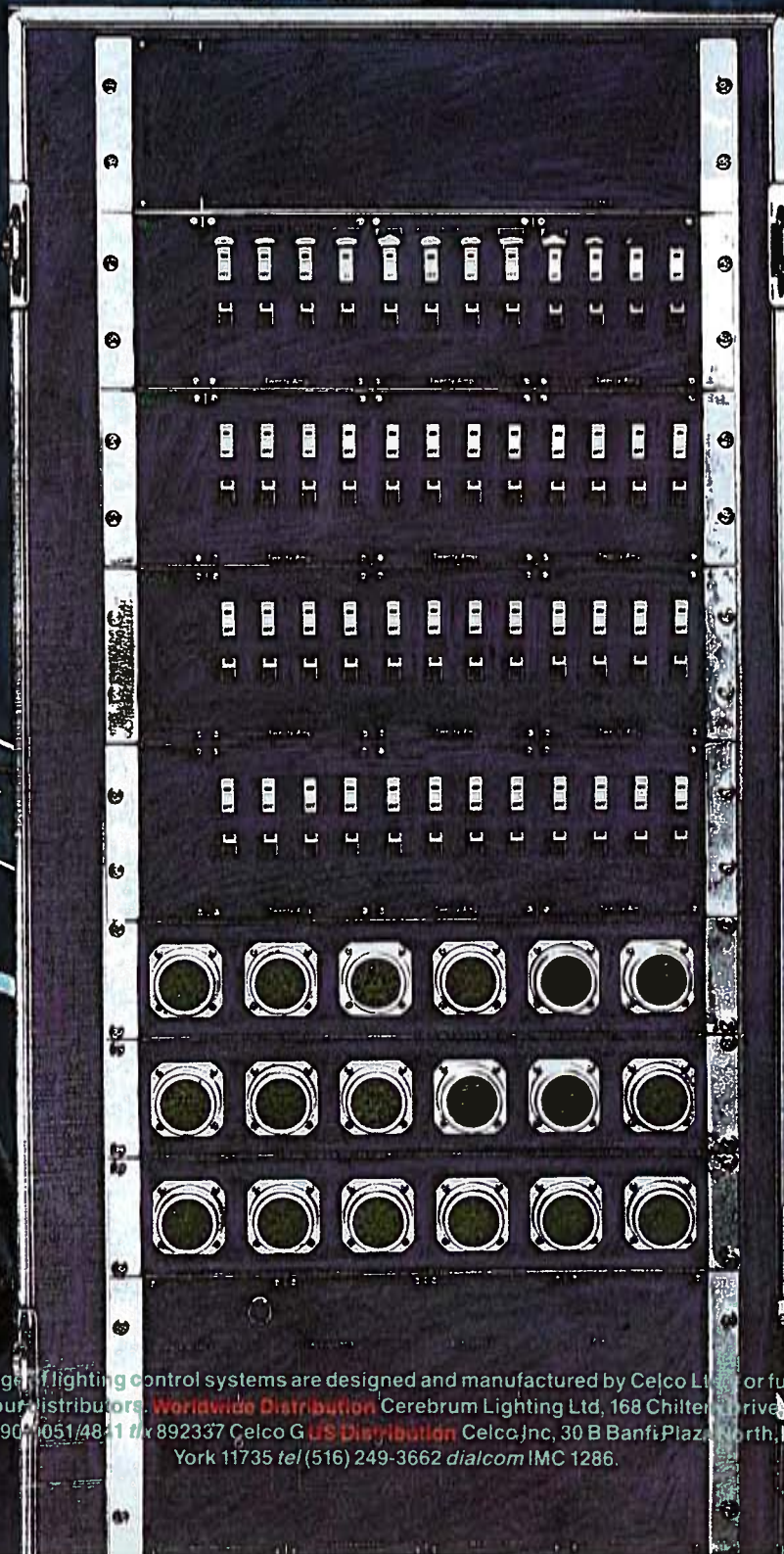
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Cover Story - Lloyd's Tercentenary Show

Leading design and presentations company Imagination recently staged a spectacular theatrical show on the floor of the underwriting room inside the Lloyd's of London building. It formed the highlight of Lloyd's tercentenary celebrations, and an exciting finale to a special Foundation Dinner. (Lloyd's tercentenary year was launched in February with the switch-on of exterior lighting - see L+SI April).

"We were presented with a very open brief," Imagination producer David Schaller told L+SI. "It gave us a wonderful opportunity to create an entertaining and inspiring show to match the scale and excitement of the building." The script, written by Imagination's Chris Whatmore, encompassed the 300-year history of Lloyd's of London - from Edward Lloyd's 17th century coffee shop, right up to the present day. The cast numbered 55, with John Woodvine as narrator.

A multi-levelled set, incorporating specially created scenic material, was designed by senior designer Martin Grant to make best use of available space, and the action took place on three different levels: the floor of 'the Room', on three performance platforms cantilevered into the atrium, and on the escalators.

Eight giant screens were suspended from a height of 17 metres down the side of the escalators, while rigging for flying set pieces - such as ship's sails and a music-hall proscenium - was hung from a height of 91 metres above the escalator well. Pani projectors were used to project over 60 slides on to the screens and on to the floor of the atrium. In addition, in one section of the show, cine projection was called for, and this involved tilting the projector on to its side so that images slotted into the right area of one of the screens.

The building presented sound producer Julian Scott and sound designer Robert Aitken of Auto-graph with a real challenge. Maintaining vocal clarity was especially important, and eight radio mics were used. As well as presenting sound from the floor of the atrium, two 24-track tape recorders were used as a replay system to provide 'sound-in-the-round' - from above, below, in front and behind the audience. The system also provided subsonic effects for earthquake and storm sequences. Over 50 speakers were employed, positioned almost 30 metres up in the atrium, and on three corners of the underwriting floor, at two levels. A quadrophonic system was positioned above the atrium floor and stereo system on either side of the screens.

Lighting for the show was designed and operated by Andrew Bridge, who used 20 Vari-Lites situated around the atrium and in the escalator well.



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early 1990's, but when the delivery delay reached 16 weeks with every square inch of space being utilised, we realised that we were stretched, and that we would have to find premises quickly!"

From the 4th July **Roscolab Limited** will have a new address. After 12 years of trading from the South Bank in London natural growth and acquisition, resulting in explosive increases in the range of products offered and booming sales, have necessitated a move to a larger building.

The new premises in Sydenham, South London, will give Rosco the benefit of five times the floor space of their previous address, plus the added advantage of ample parking space for both cars and trucks.

To coincide with the move Rosco have created a liveried van service to offer twice-daily deliveries to their network of distributors and users in Central London.



Rosco's new base at Sydenham, South London.

The Unusual Rigging Company has had a name change, and has also moved its base of operations. As from June 20th it became **Unusual Rigging Limited** and moved across London to Stanmore, Middlesex and a 9000 sq.ft. warehouse. Three times the size of their previous home, the new premises will enable the company

to gather all its equipment in one place and also cope better with an ever expanding demand for its services.

Meteorolites Productions have also moved. Having considerably outstretched their previous home at Stevenage where they had a 6000 sq.ft. unit and other buildings totalling 12,000 sq.ft., their new base is in Borehamwood, where 21,000 sq.ft. of space will give the company bigger and better facilities in all aspects.

Director Ronan Willson told L+S that apart from the question of space, they were now within the London area, and closer to the source of much of their business. In the near future Meteorolites will be establishing a technology rental department offering moving lamps and colour change systems. They will also be taking advantage of the extra space to considerably expand their existing TV lighting hire department.

Business Briefs

- As part of its strategic move into the theatre market, **Lee Colortran International** is to open a new theatre lighting shop in Nottingham.
- **Donmar** have announced the first complete UK Arri system for Southampton's Guildhall where an Image control is backed up by Arri dimmers.
- **Zodiak Disco** of Huntingdon has taken over manufacture of **Manhattan** lighting effects and smoke machines under a licence arrangement.
- **Soundtracs** has appointed **Shuttlesound** as their specialist UK sound reinforcement distributor.
- **Lytemode** have launched their first catalogue to combine Green Ginger stage lighting controls and the Lytemaster architectural controls.
- **The Live Sound Show** will be held at the Heathrow Penta from 5-7 August. Details from 01-686 2599.
- The new range of **Klotz** pre-made mic and loudspeaker cables is to be distributed in the UK by **Beyer Dynamic**.
- **System Freestyle** has been selected by the Design Centre London. It can now display the prestigious Design Centre label.
- **John Hornby Skewes** have been appointed as the new UK and Eire distributors for all DOD Digtch effects units and Audio Logic rack mount products.
- **Wigwam Acoustics** has won distributor contracts for Klotz Cables and Sennheiser microphones, and are now exclusive northern distributors of **Soundcraft** sound reinforcement consoles.



Stag Roar Induction

Tannoy provided the equipment for a recent experiment in New Zealand to show how playback of red deer stag roars induces early ovulation in hinds.

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Working towards Equal Opportunities

People

Lee Colortran has announced a re-structure of its sales force, to be headed by former Lee Filters managing director **Haydn Edwards**, and the strengthened organisation will be offering luminaires, filters and lamps for the film, TV and theatre industries in the UK, the rest of Europe and the Far East.

The re-structure also involves the appointment of a number of regional sales managers and specialist product line managers. Key appointments are: **Gordon Smith**, UK sales manager; **Peter Boott**, export sales manager; **Pat McGuane**, southern sales manager; **Ray Hall**, central sales manager; **Neville Stokes**, northern sales manager; **Chris Cook**, product manager dimming and control; **Fred King**, lamp sales manager; **Steve Glover**, lamp sales representative; **Richard Atkins**, field project manager; **Bob Massey**, office product manager; and **Mike Pollard**, sales office manager.

After seven years of exclusive distribution by Cerebrum Lighting, Celco Ltd, manufacturers of Series 2 dimmers and the Celco 88 range of lighting control boards have announced that they will be handling all sales direct as from 1st April 1989.

To head up their new sales team, **Colin Whitaker** has been appointed sales director and will be bringing to Celco a wealth of experience in professional sales and product distribution. Prior to his appointment at Celco, Colin was sales director of Cerebrum Lighting Ltd.

James Bishop is soon to leave Donmar Ltd in London's Covent Garden. He is off to the West Country to join Stage Electrics in Exeter, where he takes up his new appointment as regional sales manager for the South West on August 1st. Prior to joining Donmar, where he has spent over three years, James was deputy chief electrician at the Theatre Royal Haymarket for five years.

Steve Smith recently left Shuttlesound to join The Sound Department Ltd as managing director. He will be spearheading a major expansion into professional audio sales. He has joined **Rick Clarke** to consolidate the company's theatre sound design and hire business, and is currently working on a sales portfolio of new products.



Michael Goldberg.

After nine years as UK sales manager for Roscolab Limited, **Michael Goldberg** has left to set up his own distribution company. Called M & M Lighting Limited, it will be the sole UK distributor for two Swedish companies, Camelont AB and Abstract Electronics.

Camelont are the manufacturers of 'Rainbow', the silent colour changer which was launched at the recent ABTT Trade Show, and Abstract introduced their latest product, the 'Eagle' remote control spotlight system at Showtech in Berlin in May.

M & M Lighting will commence trading on August 1st and will be exhibiting at the PLASA Show at Olympia 2 in September. Contact number is 01-722 4147.

Carlsboro Electronics has appointed **Ivan Boniface** as sales and marketing director. Previously with the Gooding Group, he formed part of the management team sent in to revive the ailing home appliance manufacturer, Servis.



Neville Wake.

Neville Wake will be leaving HW International at the end of July to set up his own public relations and marketing consultancy. He plans to use his knowledge of the music and disco industries to offer a new service to companies operating in these areas.

To further strengthen Dynamic Technology's future as a major supplier of integrated broadcast system design services and products, they have made three key appointments: **Stephen Edmunds**, previously joint managing director, has been appointed managing director; **David Bower**, general sales manager, takes over management of the sales department; and **Peter Rainger** has been appointed research consultant with responsibilities for co-ordinating and extending the R and D activities of DTL.

David Craddock, previously joint managing director (marketing), has resigned to form a new consultancy company and part of his new activities will be to provide consultancy service to DTL.

David Hopkins, managing director of Delta Sound (PA) Limited of Hazel Grove, Stockport, and chairman of the Sound and Communication Industries Federation, has been awarded an OBE in the Queen's Birthday Honours.

New managing director at Eurotec Optical Fibres Limited is **Barrie Slinger**. Other new appointments as part of the new management team include Ken Burrows (sales and marketing), Paul Timson (technical), Eric Shipley (production), John Golding (quality control), and Julia Brunyee (accounts).



Brian Fitt.



Michael Wood.

Fane Acoustics have appointed **Michael Wood** to oversee their sales and marketing operation. In the United States they have appointed **Bryan Newman** to head up their recently formed US subsidiary based in Des Plaines, Illinois.

Brian Fitt has been appointed studio technical consultant at Lee Colortran International, and he will be based at the company's luminaire manufacturing plant at Thetford in Norfolk. Prior to joining Lee, Brian's career has been centred on the BBC, which he joined at Lime Grove in early 1955 as vision control operator. He worked on many pioneer shows before joining the planning and installation department in 1968, and since then he has been involved with the development and installation of BBC lighting systems throughout the UK.

He was responsible for the BBC's luminaire and dimmer specifications, and more recently lighting console developments. Prior to joining Lee Colortran he was project manager for a new 600 sq.m. TV studio and its associated facilities in Belfast.

Klark-Teknik has announced two new appointments for Midas: **Peter Cornell** has taken up the position of technical support manager, and **Yoel Schwarzc** the position of product manager. They are both based at Klark-Teknik's Kidderminster offices.



John Webb.

President of the Electrical Contractor's Association for 1988/89 is **John Webb**, joint managing director of R. F. Webb Limited. He was officially installed at the opening session of the ECA's annual conference at Gleneagles in mid-May.

The Electrical Contractors' Association has appointed **Alan Frost** as the first technical inspector for its 'Inspection On Demand' scheme. He has had 20 years' experience in electrical design and engineering with the East Midlands Electricity Board, Sheffield Regional Health Authority, and, most recently, as an inspecting engineer for the NICEIC.



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Laserpoint in the Headlights

Roger St. Pierre talked to Laserpoint's Andy Holmes about the company's latest production: the launch of the new Rover 800 Vitesse Fastback at the NEC in Birmingham.

It may come as a shock to hear Andy Holmes' view that too much money has been wasted on lasers, especially since he owns Laserpoint, one of the world leaders in the field. So let's quickly qualify that viewpoint.

What Andy is saying is that the important thing is "not what you do but the way that you do it".

"People have gone out and spent a fortune on lasers, simply because it seemed the 'thing' to do, without spending enough time working out the application," he told me. "Thankfully, all that is changing rapidly. The understanding of lasers and what they can do and, consequently, the way they are used, has become far more inventive - people are getting a lot more from their systems these days.

"We put a lot of emphasis on really getting to grips with the way in which potential customers can get the best return for what is still a considerable investment, even though prices have remained stable despite the effects of inflation. Never mind more power, brighter colours and so on. 'What do you really need from your laser?' is the question we ask potential customers. The effect itself is only half the story - where it is fitted, and how it is controlled and how it is used; that's what really counts," he continued.

Established in January 1978, Laserpoint - still based in Cambridge but now boasting sales offices in both London and Copenhagen - is into its second decade and can claim to be the oldest laser display company in the UK: "Laser Media in America pre-dates us by three years and there was a previous British company which went bust," said Andy. Britain's second oldest company in the field is Laser Creations, set up in 1980 by Chris Matthews, who was Andy's original partner in Laserpoint.

"We now have 28 people on our payroll at Cambridge, four in London and four in Copenhagen - our office there was set up 18 months ago and is doing well for us. One of their big jobs is laserscanning for a spectacular show featuring 12 strippers - and Scandinavian strippers are good!"

Exports have always figured heavily in the Laserpoint story - currently accounting for around 80 per cent of turnover. "We got into Europe very early on and now our Spanish connections give us a good bridge into South America while the Danish office has opened up Scandinavia to us and from London we have great connections into the Far East and the old Empire. We are currently collaborating with Belgian and French companies in a major Olympic Games project in Seoul, South Korea.

"Within the company we have people who can speak Italian, French, German, Danish, Spanish and one of our service engineers is married to a Brazilian girl while another has a Korean wife. It's proved a great way to get into export markets! At the moment we have a contact setting a company up in Sao Paulo, Brazil.

"In our first year we had a turnover of £40,000. This year we have topped £3m in our UK operation alone and £4½m overall. We've shown a regular annual growth of 70

per cent and that is helped by having 28 agents in as many countries.

"Really, when it comes to selling big laser installations there are only the British and Americans in contention. We are far more likely to find ourselves quoting for a job against say Laser Creations than against a German or Japanese company, or even, for that matter, the Americans, wherever in the world the potential client is located.

"Half our work is with clubs and discotheques, the rest with major trade shows, exhibitions, stage productions and the like. We buy-in the laser tube but we build the effects head and control systems and create the software in-house, producing all our own metalwork, printed circuits and so on.

"Servicing is a major part of our job and we have service engineers working in Brisbane, Madrid and on a Broadway show, right at this minute," explained Andy.

Laserpoint's most exciting recent project was at Birmingham's National Exhibition Centre over the May bank holiday weekend.

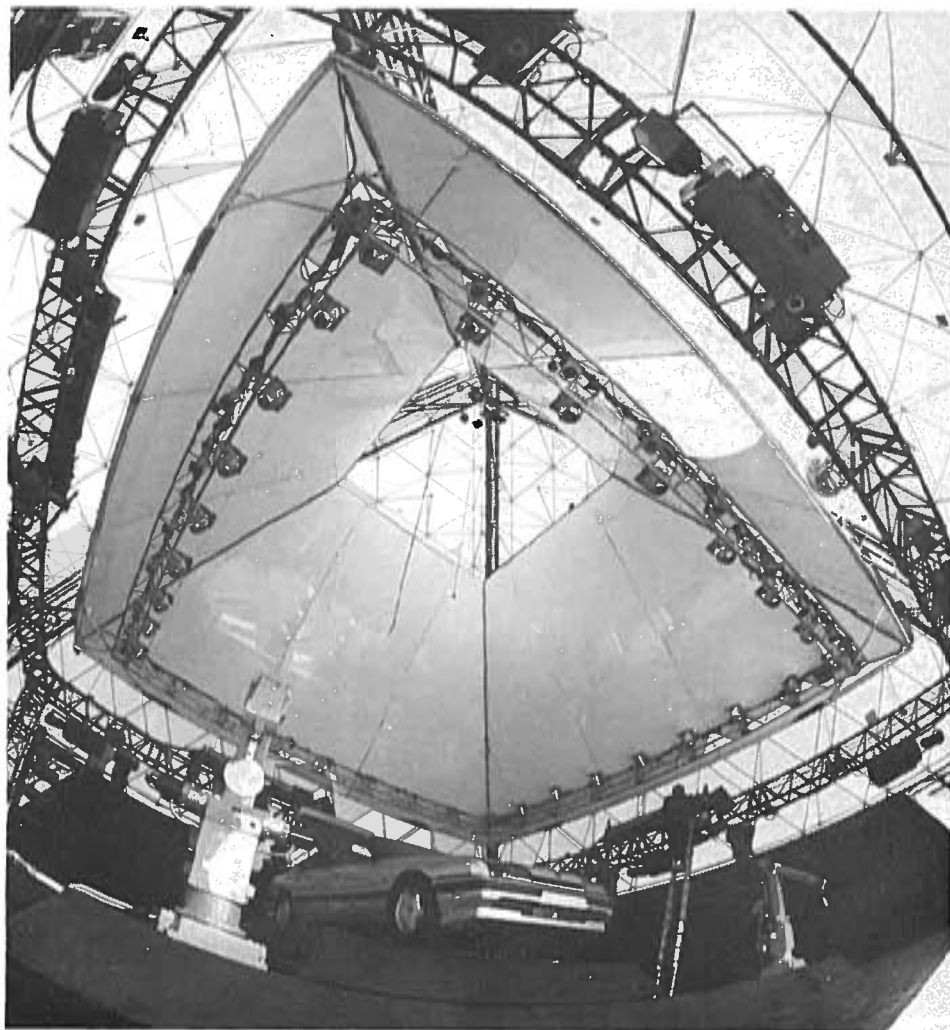
"As part of the worldwide launch of the new Rover 800 Vitesse Fastback, we were asked to create a spectacular laser and lighting extravaganza to coincide with independent television's Telethon charity event," said Andy.

On the expansive lakeside setting at the

NEC Laserpoint in conjunction with Park Avenue Productions built a 15-metre high white pyramid, inside which a very special version of the Rover car was mounted on a computer-controlled revolving stage. What made the car so special was that it was packed full of lasers and lights as the centrepiece of what was one of the biggest and most innovative laser events yet staged in Britain. The car was stripped of its engine, seats and brakes to make room for all the laser gear.

Two four-watt Argon lasers were built into the engine compartment, with single-scanner pairs mounted inside each of the headlamp units. These produced staccato beams, fans and cones of laser light from the headlamps. Two further four-watt Argon lasers were built into the passenger compartment of the vehicle. One of these was fitted with a vertical scanning head, designed to project a multitude of effects from the remotely-controlled electric sun-roof. The second laser was fitted with a conventional single scan effects-head, firing beams, fans and cones out of the rear hatch of the vehicle, which was opened by the largest of the three robots used in the display.

An assortment of conventional lighting mounted inside the vehicle gave an eerie, unreal feeling to the setting while, within the structure of the pyramid itself, were placed



Inside the pyramid, showing some of the Vari-Lites, Telescans and high powered lasers in the truss.

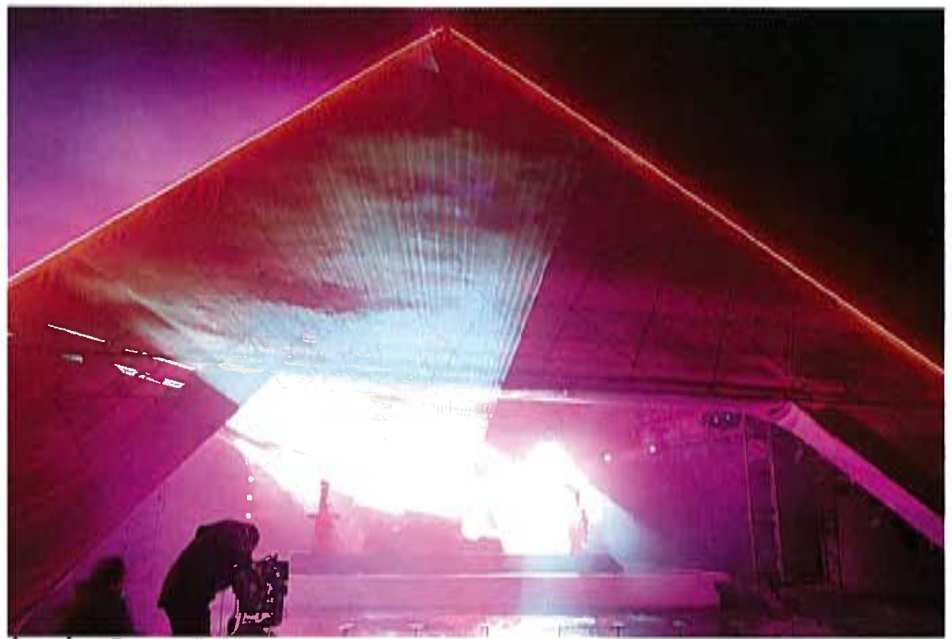
two 20-watt Argon lasers and one five-watt Krypton laser, positioned high up inside the roof to give an exciting laser display around the car and robots.

The three ASEA industrial robots positioned around the car were programmed to perform a series of functions, from the positioning of the mirrors and diffraction gratings into the laser beams, as part of the visual aspect of the show, to opening the rear hatch to allow the laser to fire out. These robot characters were carefully choreographed to bring a surrealistic but almost human element to the all-action show.

A further two 20-watt Argon lasers were used for aerial work across the skies of suburban Birmingham and the surrounding countryside - one of them mounted on the roof of Hall Five of the NEC, and the other on the roof of the Metropole Hotel, adjacent to the exhibition complex. They were supported by a five-watt Argon laser on the roof of the arena building, overlooking the lake, and, finally, this amazing visual experience was completed by a Coherent 70-4 with twin-scan image-projecting effects, writing giant messages on the side walls of Hall One!

The 11 lasers used in this fantastic display were backed up with an impressive display of supportive lighting equipment, including 30 Vari-Lite One's, 12 telescans and four 2.5k Sky Tracker searchlights.

With the entire pyramid trimmed in red neon, the overall result was a spectacular display of precision movement and light. The complete show was programmed and cued through an AVL Genesis and X15 play-back modules which synchronised the 11 lasers,



A cautious TV crew limbo in with camera at the ready.

45 moving lights, the rotating-and-tilting car and the opening inner pyramid!

"We were able to let our imaginations run riot," said Andy. "We had started talking about the show towards the end of April, got the go-ahead on May 9 and had just over two weeks to get the whole thing designed, built, and rehearsed in a movie studio at Shepperton. It was a really exciting challenge and we were delighted with the way it turned out."

Credits

Client: Michael O'Hara
 Austin Rover Group Ltd
 Agency: Dorlands Advertising
 Production: Derrick Tuke-Hastings
 Park Avenue Productions plc
 Lasers: Andy Holmes/Simon Molseed
 Laserpoint Limited
 Lighting Designer: Simon Tapping
 Set Designer: Mike Desmond
 P.A.: Lars Brogaard
 Electrotec



The new Rover 800 Fastback in position on its rotating and tilting turntable. The industrial robots hold their mirrors aloft.



With the engine removed, the two 5 watt argon lasers fill the top half of the under bonnet space.



Special windows were cut in the headlamps to accommodate the laser outputs.



Another view of the Rover's laser headlamps in action.



The headlamp lasers shine out across the NEC.

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Video and Gobos put the 'Go' in Zhivago

International lighting designer Tony Gotellier, fresh from the London Empire re-vamp, heads North and looks at two recent innovations in situ.

I suppose to most people Darlington is the end of the line between Kings Cross and York; the place where William Peese founded his Light Railway Company and around which industry the town grew. Today, however, hard pressed sound, lighting and video people are more likely to be found commuting on the 737's from Heathrow to Teesside, than the 125's from Kings Cross.

So why was Darlington chosen to first-edition two major new innovations which will, no doubt, impact themselves on the discotheque scene in the months to come? The answer lies in the ebullient character of Tom Finnegan, the larger than life financier behind a new night club called Zhivagos. As he says: "I don't do things by half measures and after several years in the industry I have learned that you have got to offer the public something exceptional if you want a project to have longevity." This attitude probably explains why Zhivagos could claim 12,000 members before the doors opened for the first time.

The video story goes back some three years or so when Tim Davies, son of Rupert and a provider of Rock-n-Roll support services, got together with software writers, video artists and substantial financial backing to form Robodevco. These people had a common purpose: to discover and invent the successor to video wall which was just then beginning to happen as a high-cost spin-off from video effect generators.

By about two years ago a working system was in place and I well remember visiting a converted warehouse in Kentish Town for an early demonstration. I can also remember being considerably impressed, though somewhat disconcerted by the disembodied welcome of a remote voice activated robot which persisted with asking leading questions throughout.

All such peripheral gimmickery has since gone out of the window and we are now dealing with the core of the system which could be described as son-of-video wall or videorama - a surround video system with the ability to move vision and sound around in the most disturbing and impelling fashion.

If I found my induction disconcerting, imagine the scene, if you will, with Tom Finnegan and wife Sylvia clambering over packing cases and negotiating a warren of scruffy corridors to discover Robodevco's offspring Davies Vision. For following a very public launch, some weeks after I had first met the system, Robodevco dissolved into its constituent parts with Tim and his creative team retaining the rights to sell and install the system, while the original company plans to concentrate on performance opportunities.

However, completely spellbound by what they saw at the end of the trek, Finnegan recognised that this was the USP he had been looking for to put the 'Go' in Zhivagos. Nevertheless the question needs to be asked as to why it took the market three years to recognise the potential of such a unique

and innovative concept. In an industry supposedly dependent on its willingness to experiment with the cutting edge of technology, why was this system left in the wilderness for so long - and why was it left to a stranger to the business to recognise its potential? During all this time the closest they got to any real exposure was a proposed Jagger tour but even he, eventually, got cold feet.

The system as installed at Laura's Bar, the fun pub/video cafe below the nightclub proper, consists of 28 JVC monitors stacked in eight ascending columns, each one higher than the other and radiating away from two small video walls in the centre. The sources are an assortment of video players, laser disc and camera all of which can receive overlaid effects from a Fairlight compact. The Compact is the new budget unit designed especially for the discotheque market with economised facilities but capable of generating all the standard video effects and graphics plus over 4000 colour hues. All effects can be triggered from a music source. It costs half as much as the full Fairlight effect generator and is certainly a very attractive proposition at the price for any club with a video projector or wall.

The real secret, however, of the system is the software and custom-made equipment provided by Davies Vision. Hardware wise we are dealing with a fairly large processor and front-end software system routed through two seemingly standard disco touch panels which, heavily modified via a custom interface, allow the operator to recall and use a range of sequences from, one screen to one source, up to several thousand events at the same time. The idea here, apparently, was to provide the V.J. with a hands-on system which he would readily understand

and thus allow video scratching with a minimum of training. So effectively they are used by Davies as dumb panels.

The ability of the system to call up, and change at the touch of a key, four video sources from a total of nine available and direct them to up to 32 independently controlled video outputs, is the recipe for its impact. Video images and animations, including complex chases and sequences can be chopped and changed at will. It is even possible to strobe the monitors, since a CRT is readily switchable at high speed.

At present, the output stage is achieved through Davies Visions' matrix system, which although adequate for its present application is to be expanded to a full framestore facility in the future to enable composite images throughout.

All these animations can be driven from an audio trigger, at which point it is relevant to examine the essential role of Mark Burgin's Shuttlesound in the feature, although this is the subject of a full article, by Ben Duncan elsewhere in this issue. However their involvement in the total video experience is too fundamental to ignore. Firstly they have installed a series of speakers throughout the room so that wherever you stand you always hear full range stereo and this opens the door for a whole range of audio effects.

In order to implement this, Shuttlesound took an Akai AX73 Synth and Image Sampler and replaced the original notes with a series of sound effects. For example a helicopter flies through the room and lands; a shell is fired and explodes; a train speeds through; and wherever you stand you get the benefit of this 3D audio imagery achieved by the strategically placed speakers.

All of this is certainly exciting stuff but it did leave me wondering why it was that audio



Wrap-round video at Zhivago's, Darlington.

and video are not actually synced for these special effects. After all both systems are Midi driven, which does seem a bit over the top for a simple sound activation as in the case of the video, so presumably Davies must have something more up their sleeves for the future.

Now, in the hope that I have not lost those with a lighting interest, on to the other new special effect to make its debut at Zhivagos - this time over the dance floor.

As readers of this journal will know I have followed the development of so-called intelligent lights with close interest and forecast a few years ago the emergence of a series of Vari-Lite budget look-alikes for the disco arena. Therefore I consider myself fortunate to have had the opportunity to have been instrumental in specifying the latest of these developments into this scheme and to be able to say from first hand experience that these instruments have finally come of age.

At Zhivagos the dance floor system installed by Hi-Tec contains eight Clay Paky 'Golden Scans' as well as many other effects such as 32 heavily modified Minilights. These Golden Scans are the first in the U.K., resulting from an original prototype which I was privileged to inspect several months ago. I am bound to say that as a prototype it was one of the best engineered luminaires I had ever seen, complete with cast aluminium ratchet-operated remote controlled iris. All that was missing at that stage was the on-board processor, to be designed for Clay Paky by Pulsar, to provide the essential control element.

Sensibly they set about developing the electronics with the proviso that the ultimate machine should be controllable either digitally or from 0-10 Volt analog source. In this way the Golden Scans can be hooked up to any industry standard control desk or, as in this case, to Oska - Pulsar's on-screen touch control system.

On test in a real situation the Scans proved a brilliant success with the added advantage of micro-stepping which ensured a smooth passage from A to B. The 575 Watt HMI discharge source provided the anticipated white hot colour temperature and, for once, the manufacturer's selection of dichroic filters were really stunning. With pan, tilt, colour change, gobo change, remote iris and fast shutter control, the Golden Scan has a lot to offer. I found that the remote iris provided an additional range of subtle effects not achievable with comparable machines and that the high speed shutter could be used to generate almost stroboscopic movements.

All in all I found the units hard to fault, although there are a few initial calibration problems which will be overcome with current software, and access to the control board has not been made as easy as it might be. Otherwise a welcome new tool for the lighting designer's kit.

At the end of the day I am still left asking myself how it is that two such significant innovations in our industry have been left to a small independent nightclub owner in County Durham to premiere. Wake up night club majors - you have some responsibilities in this direction!

Client's lighting designer/Consultant:
Tony Cottelier, Wynne Willson Cottelier Ltd
Lighting contractor: Hi-Tec Electrical Services
Contractor's lighting designer: Lizard Lighting
Sound supplier: Shuttlesound Ltd
Sound installer: Level Acoustics



Zhivago's - the main dance floor.

Video supplier/installer: Fairlight Vision
Video software: Davies Vision

Lighting Specification:
32 Minilights
2 smoke machines
16 Par 56
16 MiniMoons
8 Spartans
48 70W Halogen Bullets
4 Megastar Strobes
24 Mode Arcline
1 Clay Paky Astroggi
18 Thomas Parcans
32 pcs. Neon
8 Clay Paky Golden Scans

Control Equipment:
Oska 256 channel control system with fader unit
2 Minilight controllers
1 Arcline controller

Video Equipment:
28 JVC FST 21" monitors
2 x 2x2 Cameron video walls
2 Panasonic MVG40 VHS player/recorders
1 Panasonic FIO CCD camera with pan, tilt and remote
1 Pioneer 60/100 laser disc
1 Polar Video R-TBC
1 Fairlight CBI compact
1 JVC colour preview monitor
2 Satellite dishes



Oska overlooks its domain.



Golden Scans get to work.



Reflections in the marble dance floor.



VJ's at play - note the Akai keyboard in background.



A close-up of the first UK installation of Clay Paky Golden Scans.

PLASA NEWS



Power Changers

At PLASA's June executive committee meeting Rob Peck of Icelectrics (second from right) was elected to take over from Peter Brooks (left) as chairman of the Association on January 1st 1989. Kevin Hopcroft (second from left) of NJD Electronics will be 'under-study' to treasurer Ken Sewell (right) and is expected to take over PLASA's financial affairs early in 1989.

PLASA AGM

A lower turn-out than usual of around 40 attended the 1988 AGM of the Professional Lighting and Sound Association held at the Novotel in Hammersmith on June 16th. Following luncheon, Roger Louth of the Department of Trade and Industry Technology Division gave a talk on the 'Single European Market 1992'.



PLASA general secretary Tony Andrew (left) with Roger Louth of the DTI.



PLASA's 1988 AGM at Novotel, Hammersmith, with Peter Brooks in the chair.



PLASA Members Go West

Members of PLASA's state-side touring party pictured in Las Vegas during the recent National Club and Bar Expo: (left to right) Nick Mobsby (Eurolight), John Jeffcoat (Optikinetics), Freddy Lloyd (Zero 88), Tony Andrew (PLASA), Sandra Cockell (Formula Sound), Paul McCullum (Wembley Loudspeakers), Hazel Simpson (HIT), Kevin Hill (Soundtech) and Derrick Saunders (Pulsar). The group also visited Lighting Exposition 88 in Toronto on a tour organised by Tony Andrew and sponsored by the Dept. of Trade and Industry.



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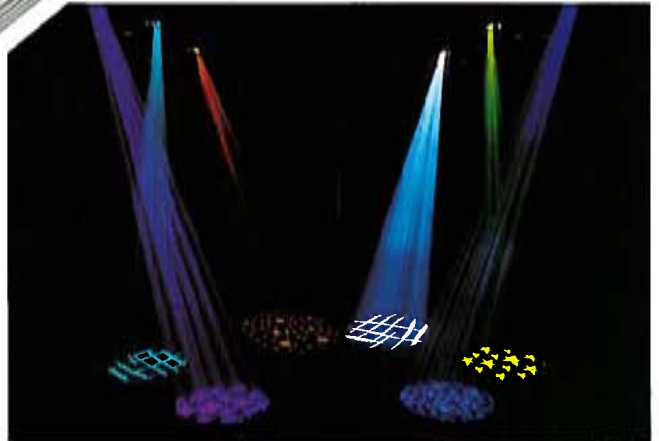
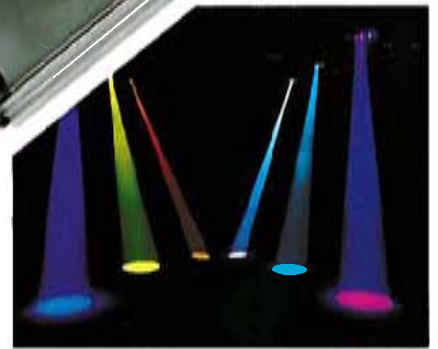
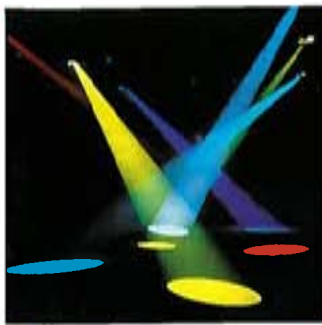
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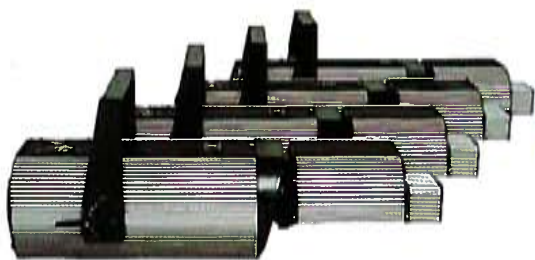


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Zhivagos: innovative technology breeds a new club atmosphere

Ben Duncan reports

The town of Darlington, lying immediately north of the Yorkshire Dales, marks the borders of 'Geordie' territory, the metropolis of the North-East. The town where passenger railways began 160 years ago now boasts **Zhivago's**, the UK's most recent hi-tech night-club. On the sound side, installation was by Level Acoustics. Shuttlesound came up with the concept, designed and orchestrated the system.

Zhivagos is a statuesque, purpose-built venue. There's certainly not going to be a problem with escaping decibels, since it stands in the corner of a car park, between the town's ring road and the back of the shopping centre's chain stores. Downstairs, the atmosphere is very different to the conventional nightclub interiors and ambience. On reaching it, you might imagine you'd misread the sign - and arrived at a continental bistro/bar by mistake. Inside, the decor includes potted floor palms, wicker chairs and a dance floor with white piazzo tiles. Large areas of daylight complete the airy feel by day. Then at night, the focal point is a multi screen videorama wall. Zhivagos owner, Tom Finnigan says "We want to take people off the street gently, so they can have a few drinks, some fun and a chat with stimulating sound and interactive videos. That's before they tackle the full blown disco environment upstairs!"

At the heart of this philosophy, Zhivago's ground floor revolves around a multi-source, 4 channel sound system with versatile panning, together with a powerful new tool for the DJ's - a **Sampling Rig**.

Club Sound: A modern plan

Kicking off at the front end of the system, the usual Technics turntables, CD and tape players are joined at the mixing location by cables from the VJ half of the booth, bringing in a mixture of video, local and satellite broadcast TV sound, sweetened with a BBE processor. The main body of video gear is described in detail by Tony Gotellier elsewhere in this issue. A radio mic provides for free-style performances out on the floor, or star presentations up front of the the videorama wall.

What about the sampling rig? Adam Maitland was responsible for setting up the samples and proving the concept to the DJs on the first night. He stresses there's nothing revolutionary in the technology itself: "The system uses an Akai S900 sampler, a 'stockblock studio standard' 12 bit sampler. What's unusual - to us - is the use of such technology out of the studio. For the first time, we're bringing a 'production team' into the disco environment. The sampler lets you cue up all sorts of custom designed sound, all digitally sampled. Then on instant cue, you can play them - on a keyboard - over records, over videos, or in between. "The samples can be played live - or by preparing a script of samples which are recorded on the latest Akai Sequencer." Over 30 recorded sound samples were installed for the opening, including a Spitfire drone, a helicopter, crowd roar, bombs, death cries

- and a fanfare.

Before the opening night, the DJs were trained to use the sampler. Subsequently, a local musician has been recruited to provide further tutoring on how to 'play' the rig. An SPX 90 multi-FX unit completes the DJ's 'tool rack'.

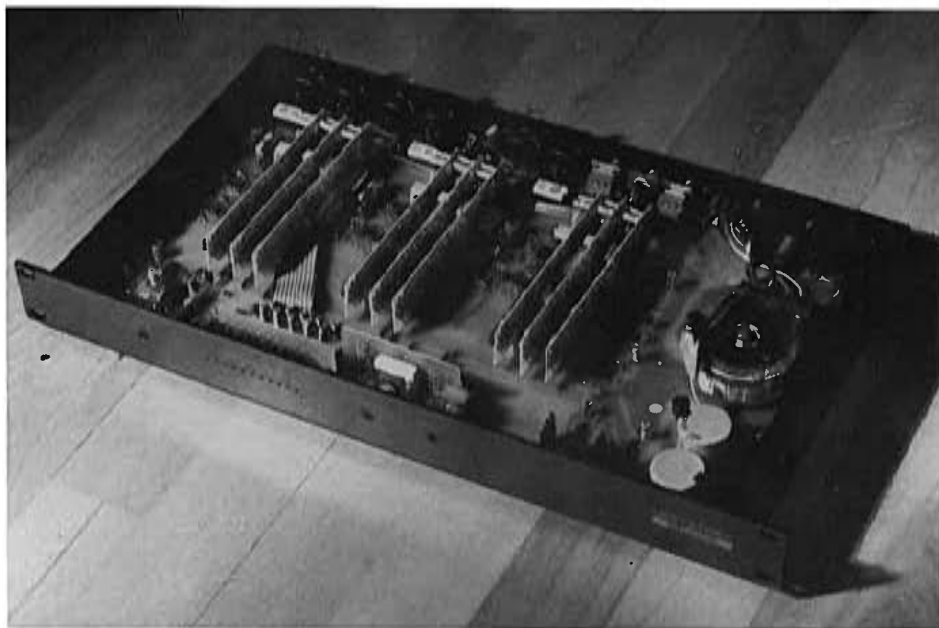
Altogether, there are three mixers. The DJ's mixing is done on a pair of Formula Sound units, one being dedicated to the video sources and ancillaries. They're followed by a Soundtracs 16/4/2, which brings everything down to a mono source. But not for long: 4 channel sound is produced and controlled by a series of Rebis rack-mounted units, beginning with the RA215 program panner, and including at least one custom specified module. The DJ's control surface is adorned with a joystick (for manual panning) and a

series of buttons, to select different 'hands off' auto-panning patterns, including rotating effects. The VCAs (Voltage Controlled Amplifiers) used to fade the sound level up and down are triggered by one of the music sources. Variable, frequency-selective tuning means that the panning steps can be made to respond to specific instruments or rhythm lines.

Sound Level Control

Altogether, there are three mixers. A pair of Formula Sound units deal with the sound and video/film derived sources. The Rebis Rack's 4 outputs are followed by a Soundtracs 16/4/2, necessary to mix down the sample-rig's outputs into the 4 channels.

To permit social conversation and maintain a ground floor are strictly kept to moderate



The Greystone Inflexor.



levels. With good, enthusiastic DJs, this is easier said than done. At Zhivago's, SPLs are governed by three means. The first is subtle, psychological stuff: each channel is passed through an **Inflexor** unit. The Inflexor is a dynamic tonal compensator based on a novel interpretation of psycho-acoustic principles. Set up for club use, it has the effect of making music more exciting at low SPLs. At the same time, high SPLs seem less attractive. If the DJs don't heed The Inflexor, the more usual, more physical restraints come into play. First, a Furman compressor-limiter provides effective, rapid protection for the drive-units. If DJ enthusiasm leads the SPL to consistently exceed 101 dBC, a conventional, brute-force 'cut-out' attenuates the system to a safe level.

Despite constraints on SPL, the groundfloor amplification totals several kW, powered by Crown MA2400's and MT1200's. The dancefloor is surrounded by 4 x Electrovoice 606A (1 x 15" ported enclosures) on bass. Shuttlesound's own design Motivator II cabinets fitted with EV parts (1 x 12" + DH 2305 HF driver + HT94 horn) are 'flown' from a low ceiling, to deliver the mid and high frequencies. 4 channel monitoring in the DJ booth is provided by a ring of Electrovoice S.80 compact mini monitors, with the volume fader tracking the dancefloor.

Off the floor, the 'social' areas are covered by the nearfield sound from 2 further sets of 4 x S.80 mini monitors. Their level is set independently from the dancefloor and booth. Altogether, the back end of the sound system displays plenty of headroom and broadly helps to protect the speakers and people's ears from clipped signals. In addition, because nobody is ever more than 4m from a speaker, the perceived soundfield is predominantly direct, not reverberent, and sounds better for it. The provision of distinct sources of nearfield sound also simplifies house equalisation - achieved throughout this venue with Micro-Audio's uA2800 Real-Time Analyser plus 'pod' programmer.

Dancefloor No. 2

The main dance floor area upstairs is suave, dark and traditional. In the cockpit, Sampson diversity radio-mics free the DJ's/VJ's, for more wacky entertainment. The mic fader is wisely fitted with a switch to mute the DJ's monitors, to prevent howlround. The dancefloor is surrounded by 4 TL606DX (2 x 15" ported bass), 6x Motivator II's, powered by Crown MA2400's and MT1200. Off the floor, a total of 10x S.80 mini monitors provide nearfield sound at lower SPLs. 10 doesn't divide by four; you guessed - the entire upstairs system is in plain stereo. Again, there's an emphasis on keeping most people's within earshot of the substantially direct soundfield, while an 'Inflexor' unit enables the DJs to build up a sense of excitement early on in the evening, without building up the decibels. For a change, it makes the whole business of going to club (especially one with the intimacy of a low ceiling) a pleasant experience to the ears.

Sound Equipment Summary

Ground Floor

Speakers: 4 x Motivator II Speakers, 4 x TL606 ARX 12 x S80 Speakers.

Amplification: 4 x Amcron Power Base I, 2 x Amcron MT2400.

Control & VCA's: 4 x VU 40 B Meters, 1 x 4 Way VCA Controller & Amps.

Processing & Control: 4 x Micro Audio 1.1 Eq Pods, 4 x LCX-B Furman Compressor Limiter, 2 x Greystone Industries Inflexors.

Ground Floor 2

Mixing Desk: 1 x 12 Chanel Formula Sound



The Electrovoice S80 monitor.



The EV Motivator 2.

PM 80/12, 1 Pair Beyer Headphones, 4 x Line Input Modules, 1 x Barcus Berry 802 Processor.

Pan Controller: 1 x 4 Way 1 Input Pan Controller including 2 Stereo VCA's.

Input Devices: 2 x Technics SL 1210 Turntables, 2 x Stanton 680 SL Cartridges, 2 x EMO RIAA Amplifiers, 1 x Denon CD Player or SPL 1200, 1 x Samson Hand Held Transmitter & Receiver 1 x Pair Samson High Gain Antenna.

Ground Floor 3

Effects Generation & Summing: 1 x Akai S900 Image Sampler, 1 x Akai AX73 Controller & Synthesizer, 1 x Akai ASQ10 Sequencer, 1 x Yamaha SPX90, 1 x Soundcraft Series 200 16:4:2 Mixer, 1 x PL 80 Microphone, 4 x 40B Rack Meters.

First Floor 1

Mixing Desk: 1 x Furman VU 40B Stereo Mixer, 1 x 12 Channel Formula Sound PM 80/12 Main Frame, 1 x Pair of Beyer Headphones, 4 x Line Input Modules, 1 x Barcus Berry 802 Processor.

Input Devices: 2 x SL1210 Turntables, 2 x Stanton 680 SL Cartridges, 2 x EMO RIAA Pre Amps, 1 x Tascam Cassette Deck 112, 1 x Tascam Reel to Reel Tape 32, 3 x Samson Hand Held Transmitters & Receivers 1 x Samson DA-4 Distribution Amp, 1 x Samson Pair of Tuned High-Gain Antenna.

First Floor 2

Speakers: 6 x Motivator II Speakers, 12 x S80 watt Compact Speaker System, 4 x TL606DX 15" vented enclosure.

Amplification: 1 x MT1200 Power Amplifier, 2 x MT2400 Power Amplifier, 2 x MT 600 Power Amplifier.

Signal Processing: 2 x Micro Audio 1.1 Eq Pods, 1 x Electro Voice XEQ 2 Crossover, 1 x Greystone Industries Inflexor, 2 x LCX-B Compressor Limiters.



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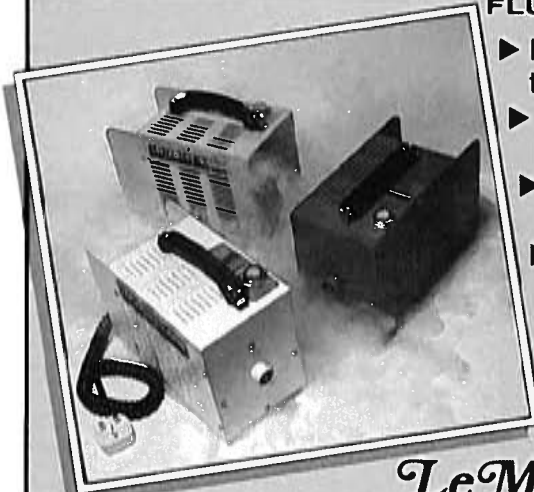
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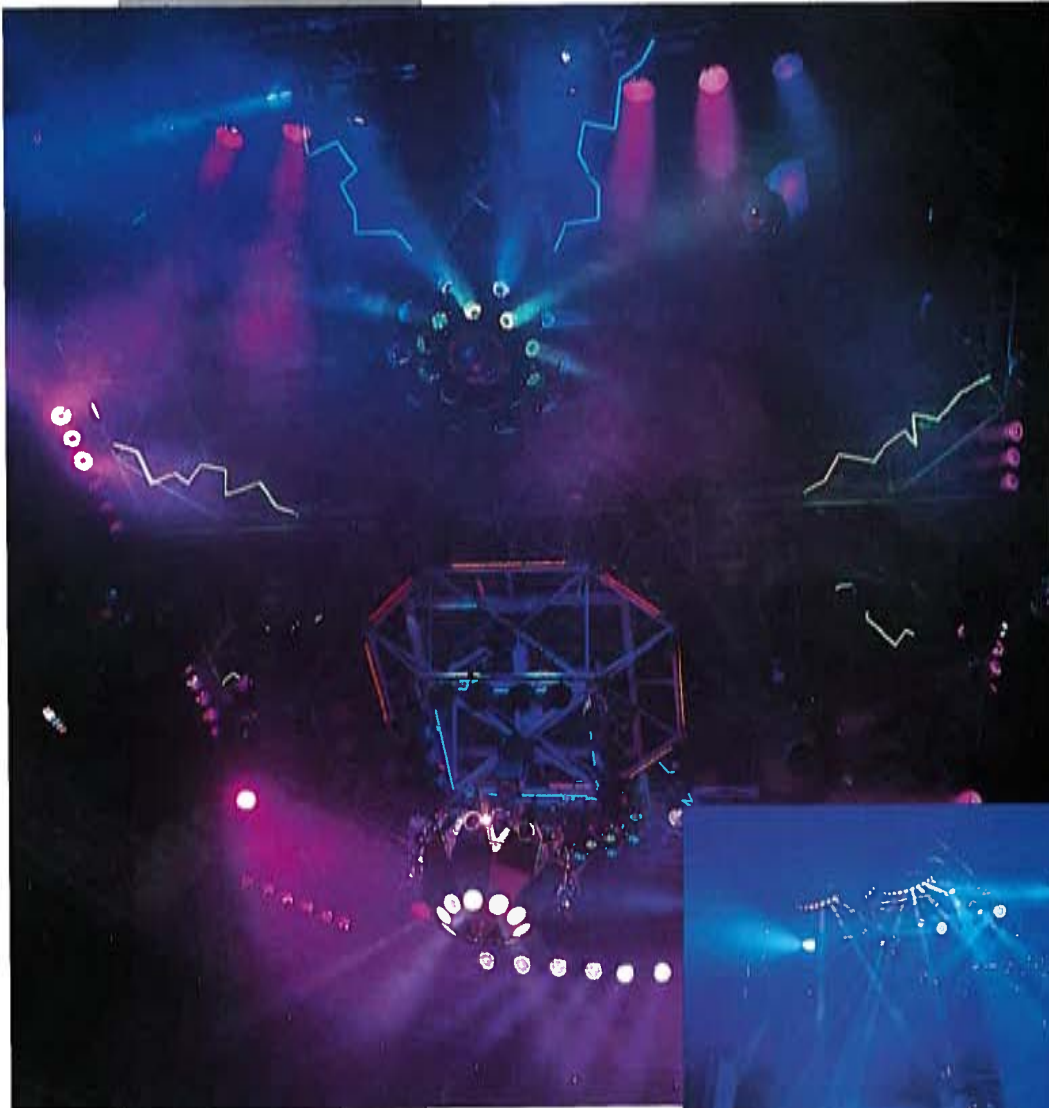


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THE ATMOSPHERE CREATORS

Colchester's Hippodrome Showplace

Tim Chapman describes the creative teamwork behind the revival of a major entertainment venue.

If you had to guess the location of a new 1200 capacity multi-purpose venue which has just undergone a 3 million pound refurbishment; that houses one of the most comprehensive lighting and sound systems seen in a UK club; that has a broadcast-ready sound recording and video post-production suite - where would you choose? Birmingham? London? Manchester? Glasgow?

Let me give you a couple of clues.

The town is situated in the east of England and is Britain's oldest recorded. It's an hour by train from London and only a few miles from the coast. It was the site of the first Roman colonia and was the capital of Britain in 50AD. 10 years later, Queen Boedicea, a little miffed by the Roman invasion, burned the place to the ground. The town has thrived however, and is now, to quote the tourist board literature, "an absorbing mix of old and new, with a rich cultural and artistic tradition".

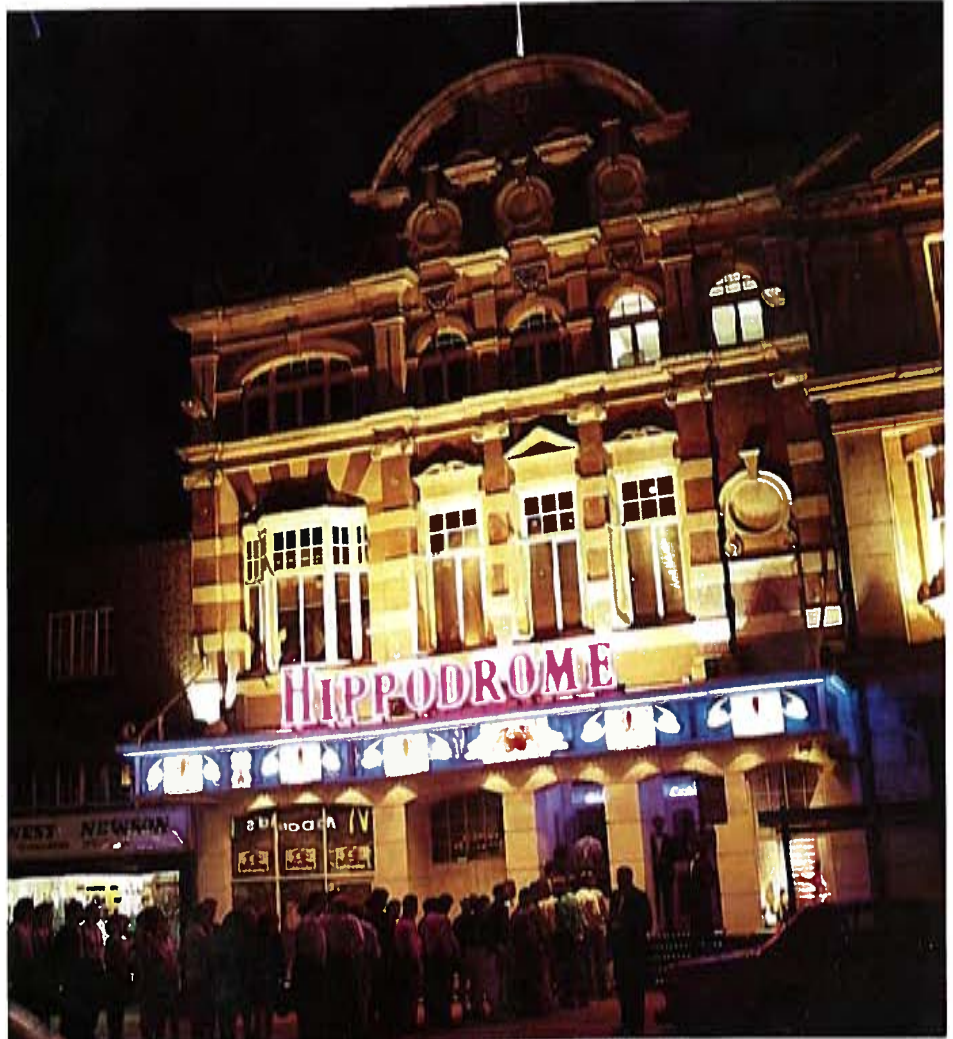
Not guessed it yet? The Town, Colchester. The venue, The Colchester Hippodrome.

The venue itself, originally known as The Grand Theatre, was built at a cost of £16,000 and opened its doors for the first time in 1905. It suffered a whole host of problems in its early years a 'Palace of Varieties' and by 1935 had finally stopped presenting live performances after a back-stage fire. This was probably a blessing in disguise, as by that time the majority of demand was for cinema shows. Just as the cinema had killed off variety, so the ignominious growth of bingo put paid to the cinema business. The building then lay dormant for many years, losing some of its grand appearance but gaining tremendously in site value.

You may be surprised, but for those of you unfamiliar with this part of England, Colchester is actually situated in a very strategic location. Apart from a large local population, bolstered by the nearby Army garrison, the town serves a very wide area of eastern England. This catchment area, and the fact that it is poorly provided with places of entertainment, did not escape the notice of The Hippodromes' rescuers and now owners and operators, Big R Leisure.

Big R have been in existence for a relatively short period of time, but between them, the three partners, Roger Williams, Richard Dixon and Morris Hawkins, have many years of experience in the leisure business and related fields. The company now operate three venues: Videotek at Peterborough, Reflex at Bury St Edmunds, and the Hippodrome.

Big R himself, Roger Williams - the financial backbone of the business - is probably best known for having created a tremendously successful trailer rental, car and truck hire operation known as Willhire. Within Big R, Roger is very much the creative catalyst. He has an artistic design flair which allows the company to formulate their venue concepts in-house without resorting to outside design consultants. This is not only cost effective but also means that Big R have been able to develop a very strong house style which is



Alive again - the Colchester Hippodrome.



Balcony and dance floor sound: two vertical clusters, each comprising six Turbosound TSE-111's and four TSE-115's, hang on either side of the proscenium arch.

mirrored in all their venues.

Richard Dixon and Morris Hawkins have been working as a team for many years and joined Big R Leisure eighteen months ago. Richard acts as group project manager for all of the company's projects. His background as an electrical engineer allows him to specify much of the sound and lighting equipment used, and to design the basis of each installation - giving a clear brief to the separate contractors. Operations manager Morris Hawkins, while being a very experienced DJ and presenter, takes care of the overall venue management, catering and bar facilities.

Combined together, their individual areas of expertise form a very broad based team at Big R. The company are proud to admit that they attach equal importance to the way that the bar is serviced as they would to what sound system is specified.

How did Big R discover the Hippodrome, I asked Richard Dixon? "Morris and I had been aware of the Hippodrome for many years and had always wanted to tackle the refurbishment. The venue is located in the High Street and we felt that it would lend itself to a number of different uses. When we joined forces with Roger Williams we had the finance needed and quickly put into action our long-formed plans. We bought the venue in June 1987 and then the fun really started!" he said.

Although they did much of the design work themselves, Big R enlisted a leading local architect to create the plans for the building work. And it involved very complicated arrangements. "By September 1987 we had achieved planning permission (The Hippodrome is Grade 2 listed building, which complicated the process) and demolition work started in early October. You wouldn't believe some of the things we found around the outside of the building and within the internal structure. When we were constructing the new side staircase we had to dig down 18 feet to put in the foundations for what is, in effect, a two storey building. We found a huge quantity of Roman remains which we passed on to the Castle Museum - pots, bones, all sorts of interesting pieces. The major building work was completed in March this year with final fitting out running right up to the opening day of May 25th. I visited the venue on the following Saturday and Richard Dixon gave me a guided tour.

We started outside. The exterior is typically Edwardian, a little tarty and showy but still impressive. They've done a great job in retaining the period feel and have used lighting to give it a modern presentation. Through the wide entrance-way we passed into a very plush reception area. Video screens showing the clubs' internal activities confront you with the result that you're immediately involved in whatever's happening inside. Before we moved on, Richard gave me some detail on the daytime operation. "During the day we only open from reception through to the first floor. We've got a cocktail bar that overlooks the front of the building and the High Street which is used more as a wine bar bistro at lunchtimes. It's fully open to the public. They can find out what's happening at the club and we use pre-recorded and in-house produced videos to create the right atmosphere."

We continued through the main doors and entered the ground floor area via an impressive feature staircase that cost over £30,000 to construct. "What used to be the front stalls and orchestra pit area is now the dance floor," continued Richard, "and it can accommodate up to 600 at a push. Behind the



The Hippodrome - fastidious attention to detail.

new stage area we've built a completely new structure where the old fly-tower houses an air-conditioned, sound-proofed, bar area and above that a restaurant facility. Both of these look out, through glass, across the stage to the dance floor and upper balconies." A large screen can be lowered to provide a backdrop to the stage or provide privacy for those in the bar and restaurant.

There is a long bar at the rear of the ground floor, under the balcony, and a further bar and seating area in the old dress circle/balcony area upstairs. I asked Richard whether this had been designated as a quiet area. "Yes, although you can actually remain in touch with the stage and dance floor area while still being above it. We've managed to balance the sound and lighting systems to convey the emotion and involvement without the ultimate power experienced on the ground floor. The lighting rig is placed above this level so that customers can look at the lights rather than through them."

On the level above is another self-contained club area with its own bar and lounge, and this is made available for private hire during the day or to members of 'The God's Club' in the evening. No expense has been spared here. The whole feel is very "lush" with sumptuous leather sofas and arm chairs. There's also a sound and video link to the main club.

The Hippodrome aims to provide comprehensive facilities for presentations and exhibitions while still retaining the right atmosphere for both live performances and discotheque use. Although many venues have tried to achieve this kind of operational flexibility in order to minimise 'down time', most have failed through poor planning, design and equipment. The Hippodrome has addressed these difficulties and adopted an uncompromising attitude to the overall design concept with fastidious attention to detail, and ensured that only the highest quality equipment was specified.

The main ground floor area has been deliberately left without fixed seating to allow maximum flexibility. The dance floor itself has been designed to take a very high loading, allowing many types of industrial product launches and presentations to take place. Big R seem to have taken every eventuality into account. "The side entrance allows a very high clearance and the very wide double doors plus the removeable centre post, mean that we can access all kinds of transport, display equipment etc," explained Richard Dixon. "In fact we have just taken a booking from a company wishing to use the ground floor as a film set! We can also fit

raked seating if required".

Apart from the general construction work, the major use of outside contractors was for the sound and lighting installations. The companies selected had both worked on other Big R projects. London-based Electromusic handled the sound system and Avitec the lighting. Let's take a look at the sound first.

Electromusic director Mike Novak explained the system: "The Hippodrome sound system is one of the most innovative installations we have undertaken. Richard Dixon's design brief required us to provide sound to the various self-contained areas within the club as well as a comprehensive system in the main club area. This part of the system had to be capable of being used either: as a discotheque, for live performance or, when low level reinforcement was needed, for conferences and during presentations. This was no easy task!"

Their first priority was to install a centrally controlled system to allow these different areas to be individually supplied with sound at the correct level. This achieved, a control system also had to be provided capable of reconfiguring the sound system in the main club area for multiple uses.

A microprocessor switching unit was used which allows the operator to select from seven different system configurations and change between 'disco', 'live' and 'conference' equalization circuits. The result is a completely flexible system capable of delivering sound to all areas and under all circumstances.

Two vertical clusters, each comprising six Turbosound TSE-111 mid/high enclosures and four TSE-115 bass enclosures, hang on either side of the central stage area. Each cluster is designed to provide an even spread of sound to the balcony and clear, powerful sound directly to the dance floor. A further pair of each cabinet, mounted at the front edge of the balcony, provide additional rear coverage. Sub-bass is provided at floor level by four 600 watt TSW-124 enclosures. A large number of compact full-range enclosures are used in the upstairs bar area and in 'The God's Club'.

Because of the dynamic range required, Crest amplifiers were selected to power the speaker system. "Crest amplifiers give the system the headroom needed to get the best results no matter what sound source is being used," said Mike Novak. Eight Crest 4001, 600 watt amplifiers power the mid/high and bass speakers and two 1200 watt 800 lamps handle the four sub-bass enclosures."

Mike stressed the point that many installers overlook the key role played by amplification. Not just the vital importance of total reliability in operation but also the ability to respond faithfully to incoming transient information, drive the speakers smoothly, and produce a faithful performance. "CD source material and live music put a heavy strain on any system. In the 4001 and 8001 Crest have produced power sources that can cope with any situation and continue to operate seven days a week - without fail!" he continued.

Four separate control racks are situated within the stage area: two for the amplifiers and two main control racks to provide on-stage mixing of the live monitor system housing: equalization, multicore interface, crossovers, switching unit, reel-to-reel tape recorder, peripheral sound control and receivers for the radio microphones. Also on stage are the DJ operations modules, designed to be fully mobile and allow flexibility in

positioning. Two TMS-2 full-range enclosures provide DJ monitoring.

The central module is comprehensively equipped with cassette and U-Matic video tape machines, Yamaha effects, as well as Technics turntables, all mixed through a customised Formula Sound PM-80 console. Two out-rigger consoles each house a top-grade compact disc player. Live sound stage monitoring is catered for by four TMW-212's, positioned as required.

For live performance, a top quality Soundcraft 500 Series mixer can be located in two separate positions, either on the dance-floor level or towards the front of the balcony area, and this is served by a unique 40-channel multicore and patching system. The latest effects, delays and a reverb are installed in the 'live' rack to ensure excellent sonic results.

On to the lighting.

Richard Dixon and Morris Hawkins have been involved in the discotheque and club world for a long time. They have designed and installed, either permanently or temporarily, a good many club systems and have kept right up to date with new equipment and concepts. Their experience spans the early years with just a few Solar 250 projectors through to their current pioneering work with laser systems. However, the basis for the Hippodromes' lighting design comes from the live concert world.

Richard has always been inspired by the major lighting systems used at larger concert venues - especially those used by Level 42 - and has used these ideas as an integral part of his lighting design brief. "We would have loved to use Vari-Lites, but unfortunately you can't purchase them," said Richard. "What we have come up with, by working with Laser Systems, is a modified Gyrolight using the same light source and the same theory of operation as the Vari-Light, and at a reasonable price."

Richard has used concert principles to achieve real mood and movement on the dance floor. The audience is treated exactly as would be a stage performer and they seem to respond well to the synchronization of power lighting and sound projection.

The belief in using live concert levels of power is shared by Avitec lighting designer, Paul Dodd. Paul has been responsible for a number of innovative lighting systems at clubs like Le Palais at Hammersmith. He's



Electromusic's Scanalyser being used to check the Hippodrome's sound system.

developed a distinctive style over the years and uses it to good effect at the Hippodrome.

Paul described the development of the Hippodrome system: "The whole design is based around the principle of 'power lighting'. I'm always looking at methods used in other sections of the industry, like touring and theatre. Power lighting is used very effectively during concerts and really can enhance the music being played as well as the performance. I don't know how many designers you will find who would admit to using concepts from 'the other camp', so to speak, but I feel that there is a very positive cross-fertilization happening and this can only be beneficial in the long term."

How is 'power lighting' achieved? "At the Hippodrome we use either individual lanterns of high power or banks of lower powered cans in high density blocks of single or grouped colours to create interest," explained Paul. "We then use synchronization of colour and movement, and this provides a good foundation on which to base other lighting effects. We've used over 125k of Parcans in the main rig alone!"

Did the fact that the Hippodrome is to be used as a multi-purpose venue prove to be problematical in the arrangement of the lighting rig, I asked Richard Dixon. "Not really. In fact the design progressed as a natural extension of the club's interior arrangement. As the club had always been intended to be suited to a variety of activities the lighting simply followed suit," he said.

The whole system design has been complicated by having to work around the architecturally-protected ceiling. The interior is a mass of complex decorative plaster work and all of this has been restored to its original state. The plaster is particularly ornate in the ceiling area and had to be left undisturbed by any of the lighting or sound equipment support structure.

The planners wouldn't allow any substantial visible steelwork so the team decided the only option was to build two enormous steel trusses between the ceiling and the roof, supported on the walls, and hang two steel suspension frames below the ceiling. From this structure, an octagonal rig is hung which is capable of taking up to six tons of lighting. The large Meroform modular structure itself is picked out in decortube and neon, which is used extensively as a feature throughout the club.

The main rig includes over 275 lanterns, with 1k and 650w Parcans, Raylights, F70 narrow-beam spots, Duowaves, and harvesters - and the first programmable and synchronizable Synchroscan 2 system. The Parcans on this and the over-stage sections produce the 'power light' effect discussed earlier. From two central cross-beams are mounted what Paul Dodd describes as "the largest concentration of elevators I've ever used!" - to raise and lower Sear Saturnos, Clay Paky strobe balls and the like. There is also a central Meroform structure which can be lowered, which forms a custom light feature incorporating eight Laser Chorus heads, and a customised chrome Krypton.

The upper balcony is home to an array of aircraft landing lights, the first UK discotheque application of the 14-head Posi-Spot system, and two auto follow spots to trace on-stage action. A host of lights and effects are mounted around the lower balcony. These include F70's, Duowave, and Laser Head 1, a twin colour 4 watt argon-ion laser system.

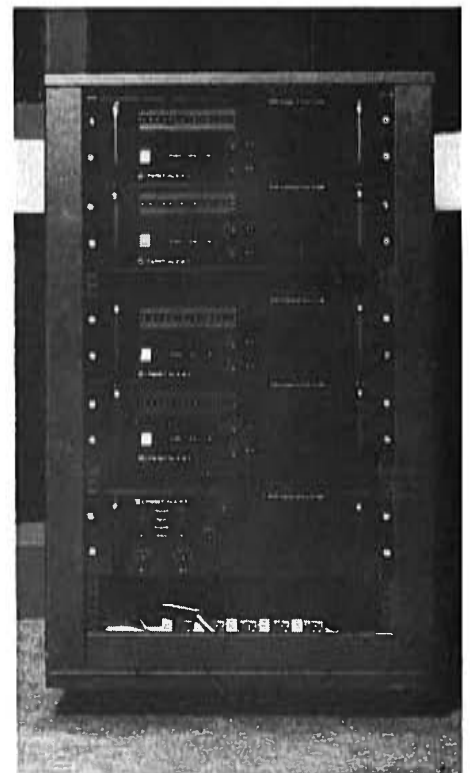
Over the actual stage area there are three

independent and fully-moveable Tri-Lite rigs each containing a mix of 1k Parcans of differing beamwidths, eight Coemar Forte's, five Clay Paky Marte units, HTI Gyrolight MkII's, Coemar Pictors, two Gamma Synchro Sunflowers and a pair of the 'blinding' LED Microlight 1000's - all of which can be individually manoeuvred. Separately mounted above the stage is Laser Head 2, a tri-colour laser which can work independently or in tandem with the other laser systems.

The control area is very spacious and contains a vast array of equipment. I asked Paul to describe the various components. "The whole system is fully programmable. You can go into a session and real-time to memorise what you have just done for later use. Everything here can be centrally controlled from five Gamma touch-key master sensors - one is purely dedicated to neon. The two Zero 88 Orion controllers have been customised to allow them to be subordinate to the Gamma Centre," he explained. "The Gamma system allows the lighting operator to activate any effect, patch, sequence, pattern or scene, from one compact area." To quote Paul Dodd: "You'd need six foot arms to handle this lot without them!"

Working in a listed building not only affects the design and placement of the hardware, but the original features must also be taken into account when choosing colours and density. "The lighting gels are all designed to blend with, and pick out the colours and features of the original Edwardian decor, and much of the lighting is based on variations of pink and rose. Big R have worked very hard to keep the original features intact and it would have been silly not to use this to advantage," said Avitec's Paul Dodd.

The video system is a story in itself. The Hippodrome have installed a fully broadcast-ready video post-production facility and all video operations within the club can be controlled from there if required. This studio also gives the Hippodrome the capability to produce in-house productions. For example, they have recently created their own television advertisement based on footage shot in the club cut together with images and graphics generated in the studio. "We've got



A rack of Crest amplifiers.

4 high-band machines, two low-band machines, two FVHS recorders, a Genesis Act 1 digital effects system, a Mickey 2 Editor and an Echo Lab vision mixer. And that's just the key video equipment," said Richard. "We also have a broadcast-standard sound facility and a precision satellite dish. In addition we do all our own jingles, backing tracks and radio adverts.

"The video side is beginning to expand into a separate business. We've produced educational videos for the local fire authority and police and a number of TV commercials for local companies. Of course, one of the main uses of the facility will be to produce product for our other venues. That way we can keep everyone in touch with all the different events at each club."

The Hippodrome is equipped with an enormous over-stage video screen which can be fed from a variety of signal sources. During live performances, the output from two hand-held cameras can be projected on to the screen as can other pre-recorded material. Richard told me that they are currently toying with the idea of installing a General Electric Light Valve projector, but its arrival will have to wait until demand dictates.

As they seemed to have all the necessary equipment, I brought up the subject of transmission from the club. Richard explained that it was obviously something they had considered and as the regulations regarding broadcast expanded they would be well placed to take advantage of the situation.

Big R take a lot of time structuring the operations side of the Hippodrome. They have a preset format for each evening and hold a production meeting every day to ensure that everything runs smoothly. Richard Dixon stage manages the entire operation and often has up to 12 technical staff under



The stage rigs come to life for both artistes and effects.

his wing. The entire staff count is 48, so when Morris Hawkins is not performing in his capacity as DJ he has plenty of other tasks to look after! Richard and Morris will soon be spending more of their time on the next Big R project and at that point will hand the day-to-day operation over to a dedicated management team.

The Hippodrome is Big R's flagship venue, and any of the concepts embodied in the venues' development will be used again in future. They are hopeful that all their projects will turn out this successfully. As Roger Williams explained: "What we set out to achieve with all our venues is a feeling of

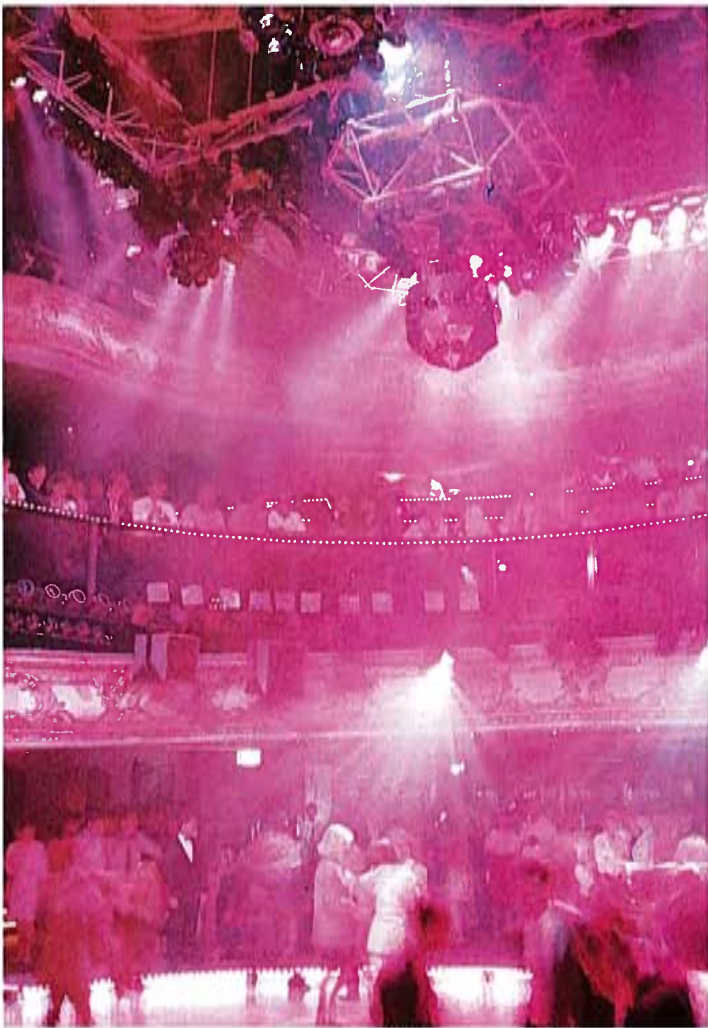
warmth and an individual personality that can only be created if all the factors which go to make up that identity are carefully thought out and creatively actioned."

Personally, I was very impressed with the Colchester Hippodrome - and who wouldn't be? Big R Leisure have developed a facility that is a credit to Colchester and I am sure that the venue will attract the level of business it deserves.

The Hippodrome is perfectly in keeping with Colchester's own stated image, and will hopefully continue to be "an absorbing mix of old and new, with a rich cultural and artistic tradition."



Lasers from stage and balcony sweep the venue.



Preparing for take-off - the count-down begins.



Mark Bridges at the lighting command centre.



Lighting power beams down from the main rig.

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Bose at Alton Towers

Roger St. Pierre sounds out Britain's only world-rated leisure park.

As British families prepare for that trip of a lifetime to America and the delights of Disneyland or Disney World there are probably very few of them who realise that it is very much a two-way trade for, it appears, American families look forward with just as much anticipation to the prospect of visiting our own Alton Towers, currently Europe's biggest and most adventurous theme park and rated number-five in the world.

Covering an area bigger in extent than the City of London's famous 'Square Mile', the Staffordshire theme park greets in excess of two-million visitors each year and, at peak season employs around 1,200 staff.

Since it's day-time experience, effects lighting has, until now, played little part in Alton Tower's fun - excepting for the indoor rides and showcases - but sound is important not just for setting the mood but for announcements such as finding lost children.

Recently, the theme park's operators, who are also the people behind the ambitious Battersea Power Station project which is shaping up to eclipse even the great American venues, have spent £30,000 on improving their sound and it was Bose equipment which they chose for what is quite a demanding job, since most of the speakers have to operate out of doors in all kinds of weather conditions.

"They initially approached us to supply small speakers for a darkride called 'Around the World in Eighty Days' - which is a bit like the tunnel of love, with boats floating on a current which carries them past tableaux capturing the spirit of such places as Paris, Thailand, New York and so on," said Bose's UK sales manager John Dodson.

"Each area has its own music and commentary and they were having a lot of problems with bleed-through of sound from one area to the next so that it was a mess of noise. "We used our 102 ceiling speakers and our 101's on the set and managed to virtually eradicate the problem."

That initial job brought a spin-off, with Bose being asked to help solve other problems, eventually leading to a spend of more than £30,000 from the theme park's operating company.

Said Alan Frayne, who, as Alton Tower's entertainment manager is ultimately responsible for ensuring that the lighting and sound systems do their job properly: "Speech intelligibility is especially important to us as our PA system is heavily used for public announcements, and we were very impressed with the performance of the Bose installation on the 'Around the World in Eighty Days' ride.

"The speech had to sound as if it was really coming from the animatronic modes of people in appropriate costume who talk the visitor through each area, and it was important that the speakers could be easily concealed, so as to preserve the illusion of real speech. The single driver 101's, which are compact and directional proved an ideal solution.

"Bose have a great reputation for design and quality and we were delighted with their work so when they suggested that we replace our existing parkwide PA system horn-type speakers with their 402 speakers we were prepared to listen. We had some



Bose sound at the Piazza, Alton Towers.

qualms at first - we were worried about how the 402's would stand up to the weather - until John Dodson explained they have been tested in the States for resistance to total immersion in water."

The eventual PA system called for 40 speakers, strategically located around the 800-acre site.

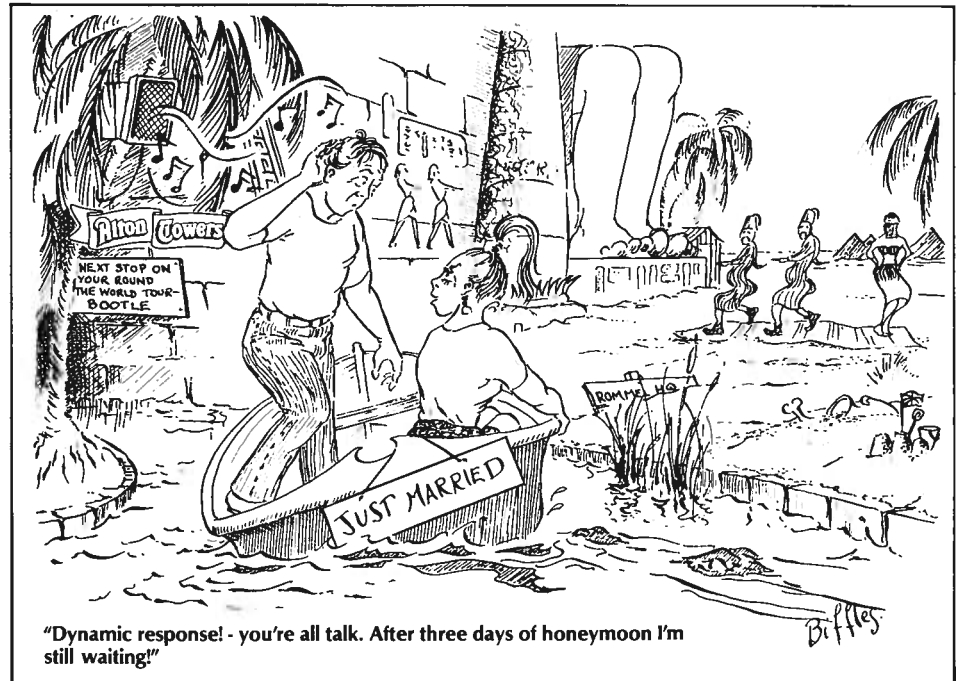
Formerly the home of the Earls of Shrewsbury, Alton Towers is soon to celebrate its 60th anniversary as a public attraction - initially visitors came purely for the extremely attractive landscaped gardens with their masses of beautiful flowers, rare shrubs and mature trees: "The Diamond Jubilee is going to be a momentous occasion for us and we are planning all sorts of new rides and other attractions and sound will play an important role," said Alan

Frayne.

"Lighting is less important here because the theme park is only open during the hours of daylight but we are planning to give it more importance when it comes to our indoor areas, and we have just appointed Mike Snape to our staff to have a look at the whole question of light and sound here."

Mike Snape comes to Alton Towers with a lot of theatre experience behind him: "I have just spent two years as a freelance, working in Scotland at such places as the Royal Edinburgh, and I did a lot of work on behalf of hire companies in the audio-visual field," he explained.

"My job here will be to expand and clarify the working of our technical department and to look at ways in which we can make the Alton Tower's experience even more ex-



"Dynamic response! - you're all talk. After three days of honeymoon I'm still waiting!"



citing in both audio and visual terms."

One newly introduced scene-stealer with which Bose have already been involved is 'Henry's Birthday Parade' which wends its way round the site every lunchtime: "Henry the Hound is our mascot and the parade comprises eight gaily decorated floats, each

of which has its own Bose PA system, with a pair of 802's and a pair of 302's, run off battery-powered amps, and a modified Bose EQ system, using low voltage.

"The music and speech programme is computerised and transmitted by radio to the floats so that each float has its own ap-

propriate music but all the music is in sync! The whole thing is extremely effective and is proving very popular with our public.

"We have also purchased 302/802 rigs for various other shows around the place, including our open-air theatre, our resident jazz band and the love parrot show. As time goes by we are steadily improving our general stock of sound and lighting and improving the level of quality at the same time. Because our lighting demands are minimal, we tend to use lots of Parcans, rather than theatre-type lighting but, with more and more dark rides on our roster, we are becoming more ambitious.

"As you can imagine, what with powering all the rides and providing the appropriate lighting and sound, our electricity requirements are enormous. In fact, at peak times we have to be plugged into both the East Midlands and West Midlands grids in order for the electricity people to cope."

Alton Towers has also ventured into the pyrotechnics field, using firework displays to mark special events rather than as a regular thing. Le Maitre did us a fabulous display for the launch of 'The Beast', which is a really spectacular rollercoaster-type ride. We had Eddie 'The Eagle' Edwards along to open it and take the first ride.

"This year we are expanding our season considerably and will be holding major firework displays on November 5 and 6 to mark the last two days of our season though, in fact, parts of the park will probably remain open right through the winter."

The Alton Towers' team are also looking to new horizons with the Battersea project: "Being indoors, the demands on effects lighting will be far greater than they are here at Alton Towers. The ultimate success of the venture will depend on providing the public with a truly exciting experience and that in turn will be largely dependent on the overall atmosphere as well as the delights of the individual rides."

For John Dodson and his team at Bose, the Alton Towers' project has brought new horizons too. "We've been able to open up a whole new market," he said. "There are lots of new theme parks planned throughout the country, and the existing ones are constantly updating their equipment. We are obviously hoping many of the operators will opt for Bose installations when it comes to their sound requirements!

"Hopefully, Alton Towers will eventually be fully equipped with our speakers, rather than someone else's, but already our involvement is enough for the place to act as a superb showcase for Bose in what is, for us, a brand new industry which is going to become increasingly important as people have more and more time for leisure activities."

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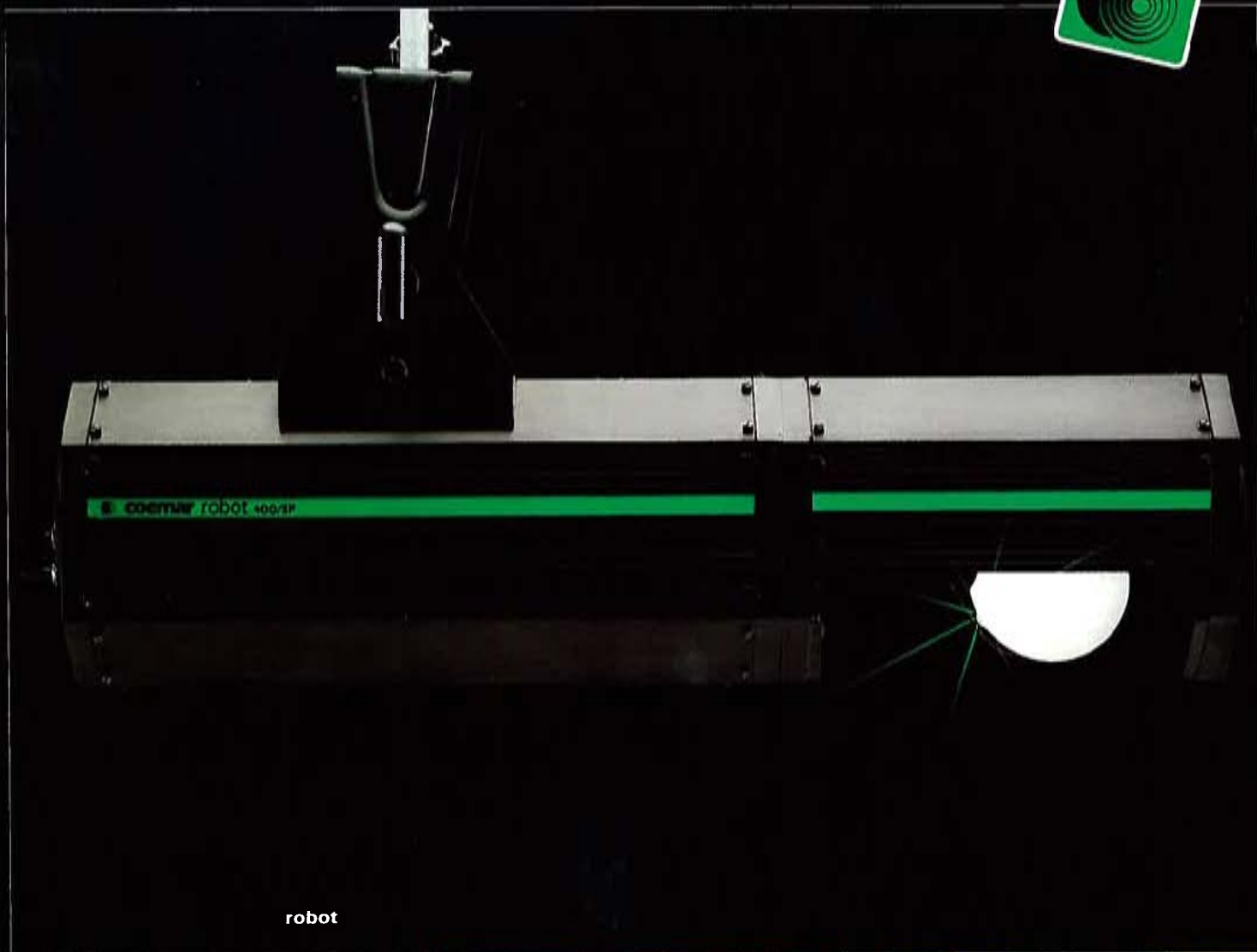
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Light & Sound Show

11-14 September

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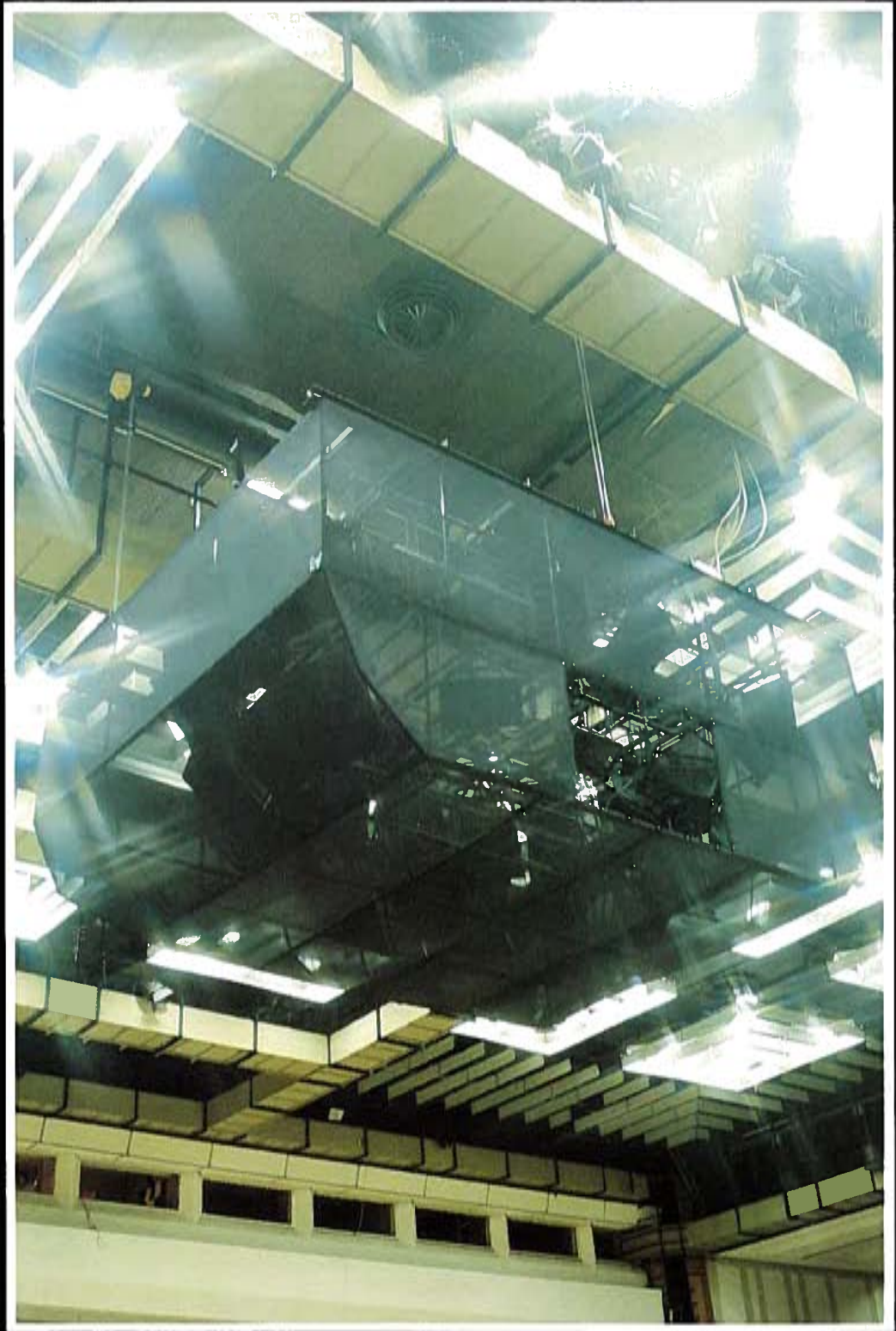


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APRS Show 88

Ben Duncan describes what's new for stage and disco sound at the 21st Annual International Exhibition of Equipment and Services for the Professional Recording Industry

This year's APRS (Association of Professional Recording Studios) show - held in Olympia 2, London, over 22nd to 24th June - yielded a bumper crop of new technology relevant to all kinds of stage sound.

Kicking off with **Akai**, their latest sampler - the **S1000** - goes a step beyond the S900 sampler featured in an installation elsewhere in this issue. It provides 16 bit (that's CD quality) sound, up to 23½ seconds in mono, or 11½ seconds in stereo, together with enhanced facilities. It's also a product of UK, not Japanese, design genius. For installers dealing in complex sound, multi-screen video and A-V set-ups, Akai's digital patchbays replace Edwardian patch-cord technology with a black box and a colour monitor. The cost looks favourable considering the extra reliability and labour savings attained by abandoning jackfields and patchcords - which need frequent 'servicing'. Aside from speeding up the work of harassed engineers, digital patching suggests foolproof operation by 'non-technical' operators. The **DP-3200** has a 32 x 32 audio matrix, while **DP2000** simultaneously handles 16 channels each, of video and audio. Both models work in conjunction with the PG-1000 rack-mounting patchbay programmer, which stores 640 set-ups. With the optional disc drive up to 12,800 set-ups are on offer - per disc! The programmer also provides for MIDI and SMPTE interfacing.

Downstairs, **Autograph** were showing a compact rack system for large-scale **Meyer MSL-3** PA systems. The **RP-23** powers 4 x MSL-3 cabinets from 3 amplifiers, while **RP-22** deals with 4 x 650-R2 cabs from 2 amps. Aside from integral mains distribution and multi-core speaker outlets, each unit contains signal routing facilities for outboard sensing of the amplifier inputs and outputs, plus Meyer's proprietary 'CEU' control lines. The RP racks can be interlocked for safe stacking. Also on display was **Micron's** range of radio microphones and accessories. The **TX503** microphone has a SNR > -115dB, contains an AKG capsule and looks stylish enough for classy cabaret. The **TX100/500** series are easily concealed **pocket** transmitters with numerous potential applications for conferencing and theatre.

Audilec were showing **Audio Technica's** ever-expanding range of microphones. New models included **AT4031**, a cardioid capacitor mic suited to female vocals in theatre and conferences. Unusually informative for an oriental manufacturer, A-T's data sheet even includes a circuit diagram of the mic's guts showing the phantom powering technique, which spans on all the common voltages. And Audilec's director, Philip Price, reassures us that they can supply all the component parts for maintaining A-T mics; the same can't be said for many oriental products. For long shots in big arenas, the

AT-4071 and **73** are line-gradient ('hyper cardioid') capacitor mics with the usual ruler-flat response up to 20kHz. Using re-radiation techniques, these mics are special because they achieve a given, high directivity with a 33% reduction in length. At the other end of the technological spectrum, **Audio Technica's SL50** is a nifty, 6 way A-V selector box.

BSS were previewing their first power amplifier. The **EPC-780** is classed as a 'radical high efficiency linear power convertor'. The preliminary specification anticipates over 1kW per channel into 4 ohms. Fitting into 2U and weighing only 20kg, it promises new standards of levity and power density for touring PA systems, without recourse to 'digital' power amplification and its associated setbacks. Truly innovative features include a self-adjusting supply which automatically adjusts itself for different mains voltages, an LED temperature meter, remote control facilities for level and muting, and 'intelligent fault diagnostics'. **BSS** were also proudly proclaiming the successful use of their latest processing products at the recent Nelson Mandela birthday concert. Aside from their ubiquitous DI boxes and crossovers, the **MCS** line distribution amplifier was used by Concert Sound to drive 100+ power amplifiers without impedance and level matching headaches. Backstage, an array of **MSR-604** active mic

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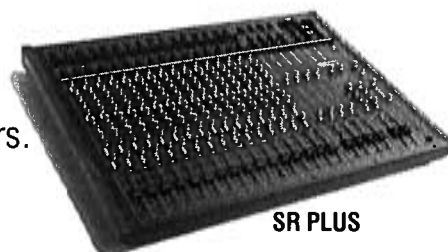
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Previewed at the show: BSS's first power amplifier - the EPC-780.

splitters provided 112 channels for the BBC's global satellite link, and for Advision's recording mobile.

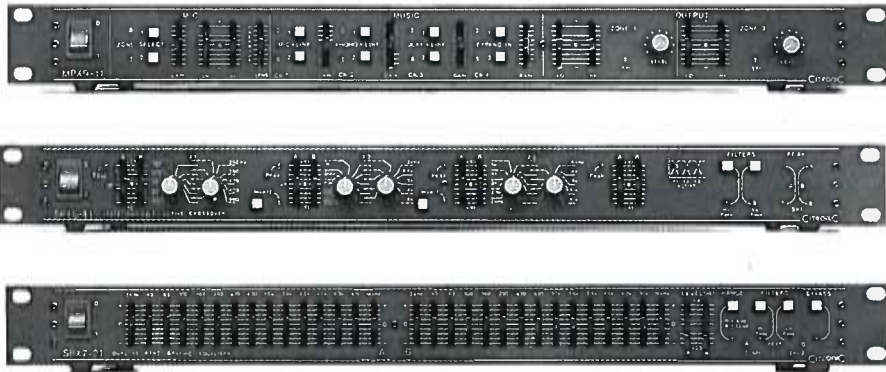
Canford Audio had some giant cable wraps on display, ideal for keeping PA cables looms up to 130mm diameter tidy, and handy too for carrying (grunt) big multicores. They've also introduced the first phono plug

with decent cable clamping, utilising a Neutrik chuck. Citronic, with their long track record manufacturing disco consoles might have seemed out of place at an exhibition that's principally aimed at studio owners. But they've been expanding in a more 'pro' direction in recent years. The PPX range of power amplifiers is now consolidated, and

means business, with 5 models covering 97 to 480 watts into 8 ohms, long term rms. Citronic have taken time out to define and specify the short term power too: for the largest model, the 'musically significant' short-term 10mS (or 'burst') is specified at 1600 watts into 4 ohms. It's to be applauded as a valuable specification, one that some manufacturers would be less keen to display... Citronic's recently introduced mixer, the MPX9-31 proves the up-market trend. It's packed tight with features. NotX uite as tight as some oriental home recording mixers, but with all the flexibility and facilities needed to reach across the board from disco and club, to conference, A-V and theatre.

How about Citronic's new releases? SPX5-41 is a versatile 2, 3 or 4 way switchable and fully tuneable crossover, packed into a 1U box. Aside from the usual security cover, there's also a security tag which 'self-destructs' if unauthorised access is attempted. SPX7-21 is a 1/3rds octave graphic - the 15 knob variety, again niftily squeezed into 1U. The innovative feature is a switchable boost/cut limit - if you choose +6dB maximum instead of +12dB, the knobs' resolution is twice as great, making fine-tuning less of a bind when only subtle EQ is required.

Cue Systems had a £600 software on offer to control live sound EQ. In conjunction with an Atari (or IBM compatible + GEM) together with up to 8 programmable graphic equalisers (like ART's IEQ model), the a3 analyser software automatically adjusts the EQ to track the required settings, using the mixer's output as the reference signal, and comparing this to the acoustic output. The reference setting needn't be flat and up to 200 curves can be stored with editable titles. Adjustment intervals can be set at between



Citronic's trio: the MPX9-31 mixer, the SPX5-41 crossover, and the SPX7-21 graphic.

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A wealth of experience

Hill Audio is one of a small core of longer-established, stable companies able to supply to a worldwide marketplace and who can draw on a wealth of experience within the audio industry.

THE PAST

The company that was to become Hill Audio was founded in 1972 with the same nucleus of personnel that remain to this day. Initially we started producing custom-made mixing consoles and amplifiers for sale within the UK. As the products became more sophisticated the company began exporting to Europe.

In the early 80's we were one of the first to establish an American based distribution company. MHA, a sister company, was also created to specifically cater for equipment rentals. The entry into the USA raised the profile of Hill Audio, and to this day it remains our largest single market — although in the last four years our worldwide sales have increased dramatically through the establishment of a comprehensive-distribution network.

THE PRESENT

Hill Audio has recently updated its products — introducing a comprehensive new range of mixing consoles and power amplifiers. To satisfy the rapidly expanding worldwide market we have moved to a new factory and installed a large networked computer system. Over the last three years our sales have more than trebled.

THE FUTURE

The years of investment in extensive product research and development have given us a firm foundation for the future. In a changing world, quality and reliability with the tradition of personal service and care, make Hill Audio a major name in the audio equipment industry.

○ The '00' and '000' series power amplifiers



● The 'Remix' 24:8:16 recording console



● The 'Concept' series modular consoles



● The 'Mix' series non-modular consoles



● The Rambert Dance Company — users of a 'Concept' series mixing console



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Jerry Mead of Embermen with the new Otis 'Power Station'.

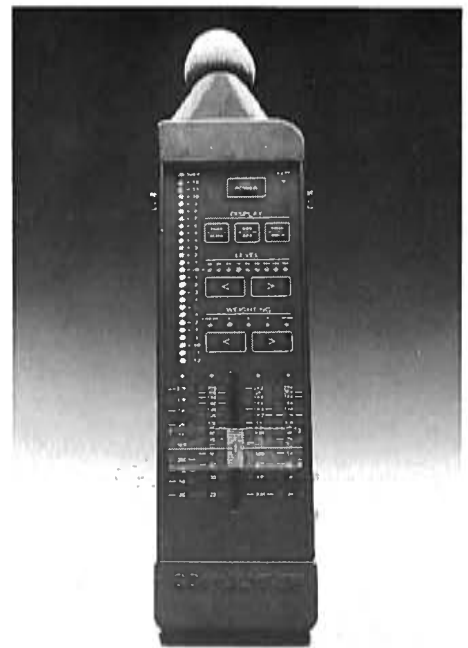
10 secs and 15 minutes, and the sound engineer can veto, override, or edit any changes before they're made. There's also a presettable limit on the maximum EQ (in dB) to prevent the system going berserk in the event of (say) a power failure affecting all the bass-end amps. EQ settings are displayed on the Atari's VDU except when a3 is switched to 'spectrum' mode, when it changes into a conventional but fast spectrum analyser.

On the theme of late-80's digital wizardry, **Digital Automation** were demonstrating a major breakthrough: a 96 channel mixer which operates **wholly** in the digital domain. Remember the Amstrad ads with steam typewriters flying out the window? Big mixing consoles are next . . . Digital Automation

claim that their **KSD-48/96** makes an analogue console "look like a paper aeroplane at Cape Kennedy". The system comprises an IBM compatible PC plugged into a 6' high rack cabinet. 10 band EQ, reverb, compression, delay, gating, pitch, shifting, sampling, and a mystery FX called 'real-time fourier re-synthesis' are all simultaneously available on any of the 96 channels, all accessed through the PC's keyboard and mouse. Your mix is password protected, 24 bit accuracy is claimed with a corresponding 130dB dynamic range, and cost is quoted at 'less than the cost of a good analogue desk'. Aside from the studio, the ramifications are big stuff for major Rock'n'Roll shows.

Embermen were showing the full production version of **Otis Communication's 'Power Station'**, a low cost yet 'bomb-proof' multi-purpose 125 watt into 4 ohm 'utility' power amplifier. Otis is mono and occupies 1U x half a rack **width** (8½"), so two units can be mounted in a rack tray. Otis Communications have also produced a versatile range of hardware for mounting on mic stands, or (ideal for clubs & wine bars) the amp can be screwed directly onto walls or the back of small speaker enclosures. **EMO's RK1** rack light design is now consolidated. It takes up 1U and slides out to illuminate up to 4' of rack below without creating a distracting pool of light. For light-sensitive theatre jobs, there's a dim switch. Major new products are scheduled for launch in the autumn.

Electromusic were showing the **Scanalyser**, a handheld SPLK analysis tool, designed in the UK with the real needs of live soundmen in mind. With 3 decade sweepable frequency tuning, it's not restricted to sensing ISO centres. The pink noise generator and rechargeable batteries (sold as 'accessories'



Available in August from Electromusic - the Scanalyser.

with previous analysers . . .) are built in. The Scanalyser will be available late August; cost will be £1050. Also on Electromusic's stand, **Crest's 7001** power amplifier expands the range with an stereo FTC rating of 900 watts into 2 ohms, or 1.6kW into 4 ohms bridged. Further down the power spectrum, the 2U high **6001** includes an internally adjustable active crossover. Meanwhile, Electromusic's Mike Novak is looking for Crest Distributors in the UK.

At **Formula Sound**, Tony Cockell was standing over the **Guardian CX 4**, a 1U accessory designed in consultation with local authority



Allen & Heath: a new image, and a highly successful launch for their new 'Sabre' mixing desk (see L+SI, June issue).



Hill Audio's sales manager Graeme Harrison with the new Remix semi-modular console, suitable for both recording and live sound applications.



Shuttlesound's stand: "packed as ever with goodies".



Explaining a major breakthrough - Digital Automation.



Formula Sound's Tony Cockell (left) with Carlsbro's Ivor Green.



Harrison Information Technology - a full range on show. Watch out for a major new product at the September Light & Sound Show - same venue.



Clear-Com is available in the UK from TSL in Covent Garden.



Tannoy: showed prototype of a new small reference monitor - the AV PRO.

fire officers for nightclub installations. The CX4 dims the sound and brings a priority mic input into play when the venue's fire alarm circuit is triggered. What's more, the unit provides SPL control, lighting a warning lamp and then attenuating the PA feed by -6 to -45dB if no action is taken, with a slow fade-back.

The Hackney Cab Company have been busy producing a state-of-the-art compact vocals PA. The Bi-amped cabinet is based on

'tweaked' EV drive units and can be hung from lighting grids. The associated 1U control box is immaculately manufactured by BSS to Hackney Cab's specification and contains the crossover, EQ and a smart feedforward limiter for loudspeaker protection. Aside from a string of London Theatres and top dance companies (including the Moscow Classical and Bolshoi Ballets), Peter Gabriel used the low profile wedge version for stage monitoring on his recent world tour. Distribution is by Cue Systems.

On the Harman stand, Rauch Precision's range of power amplifiers now includes the diminutive DVT 25s. Producing 120 watts stereo in 1U, it looks ideal for stage monitor

racks. The revolutionary DVT 300s (previewed at last year's Frankfurt and officially launched earlier this month) has arrived after extensive road-testing in Germany. Using 'state-of-the-art switch-mode power conversion technology... originally proposed by Tesla' in conjunction with a high efficiency heat exchanger and Rauch's well established linear power FET outputs, it produces 750w per channel into 2 ohms in just 2U, and weighs only 14Kg. Also in the business of radical weight and space saving, Harman were showing JBL's 2450J hf driver, which upgrades the classic 2445. A new magnetic material, neodymium makes the driver feel like it contains balsa-wood instead of concrete. At the

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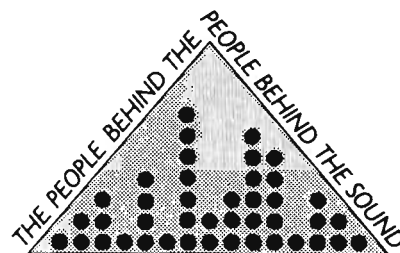
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same time, advances in phase plug design and adhesives technology offer improved sonic quality together with a staggering 150 watts continuous rms rating above 1kHz! In the realm of cabinets for installation jobs, JBL were also previewing the **Control 10** and **12**, for release in August. They'll come with the extensive mounting options already proven with the successful Control 1's and 5's.

Hill Audio's long established DX amplifier series has been extensively updated with continuous ratings ranging across 7 models from 200 watts into 8 ohms up to 1.5kW into 2ohms, packaged in 2 and 3U rack sizes. The recently introduced **Mix** and **Soundmix** series of consoles look ideal for club and theatre installation. The rack mounting versions occupy 8 or 14U and come with colour-coded jacks. A deck start fader option is scheduled for September. **HH Electronics'** latest product represents a new direction, into compact 'processor driven' speaker enclosures. Bill Webb was employed to design the new **TA** series full-range and Sub-bass cabinets, driven in conjunction with the matching **C1** 'system controller' - the precise functions of which are obscure. Also on display, another 15 band ($\frac{2}{3}$ rds octave) graphic, this time available either 2U high with traditional faders, or in 1U format with dinky rotary knobs.

Roland's new range of M.I. products includes a parametric equaliser operating in the digital domain. The **E-660** is capable of storing up to 90 EQ settings, plots a graph of the chosen response on an LCD screen and has 16 bit accuracy, meaning a 90dB dynamic range. There's also an unusual feature made possible by operating in the 'digital domain': individual frequency bands can be delayed for the purposes of time or phase alignment. **Rolec's PMX6** is a low-cost, no frills portable 6 channel mini-mixer with applications across the board. Including battery pack-cum-charger, it costs just £300.

Shuttlesound's stand was packed as ever with goodies. Hot on the heels of the **N-Dym** mics, **Electrovoice** have unleashed **N/Dym-1**, essentially their world beating **DH1A** driver re-engineered with a Neodymium magnet. Weight is reduced to a mere 3.3kg, while power handling is 200 watts music or 75 watts rms with a staggering conversion efficiency of 28%. Neodymium has also found its way into EV's **RE45N/D**, a lightweight dynamic shotgun mic with a high output.

Deltamax DMC-1122 and **-52** are state-of-the-art PA system controllers. Inside, an active crossover is combined with a VCA driven by an analog computing and sensing loop. Amplifier clipping is prevented while the maximum excursion ('X-Max') and thermal capabilities of the associated **DML series** speakers can be realised in safety. Overall, it spells an unprecedented increase in maximum SPL for a given box volume, and promises fewer driver failures too. **Sampson's** low cost/high performance radio microphone range have been further expanded; the new **Stage II** series comes with dBx noise reduction. **Crown** have a new kind of mic for loud Rock'n'Roll stage work. The **CM-300 Diferroid** uses differential cancellation techniques to boost gain before feedback. The man from Crown was standing

180 Amps, runs on 3 phase 415v juice and "... loves impedances below 1 ohm". When used by Clair Bros for U2's European tour last year, just **one** of these amps on sub-bass was responsible for triggering seismic instruments in Italy and creating an earthquake scare. The **Macrotech 2400** is yet another development of existing Crown models. It's a 2U amplifier driving 800 watts/ch into 4 ohms. Yet another premier from Shuttlesound, **Permanent Playback** is a digital message system. Modular 'reproducer cards' store up to 4 minutes of speech or music, blown onto an EPROM with 16 bit fidelity. **Furman** signal processors don't break any new ground, but combine respectable quality with low prices. Also on show was the production version of **Greystone's** dynamic tonal compensator/SPL controller, **The Inflex-**



The new TXD range from Turbosound.

over the butchest pro-power amplifier yet. Their **Macrotech 10,000** was originally developed for body scanning, can output

or and **BBE's 401 Unimax** processor.

Finally, **Turbosound** unveiled a new range of speaker enclosures, the **TXD** series. A departure from Turbosound's adherence to horn-loaded technology, the range comprises 3 infinite baffle cabinets designed to sound 'subjectively excellent' for near-to-medium projection with wide dispersion. As usual, Tony Andrews' team has experimented with hundreds of drive-unit permutations 'to inject Turbosound magic into this (very ordinary) type of enclosure'. Also on show, their unique, patented concentric **TFM-2** stage monitor is now in full production.

Which leaves me to thank the great man, APRS president and producer George Martin, for a well organised, relaxed and friendly show.

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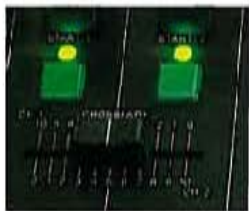
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ON TOUR

Keith Dale

'Wired'

Catriona Forcer went to Pinewood Studios and talked to Paul Webber of Entec and the crew of 'Wired'

Over the last few years Entec have become increasingly involved in television and recently they pulled a major coup to supply the lighting and sound for the new TV programme 'Wired'. The music side of the programme is recorded live at Pinewood Studios and I went there to meet Paul Webber of Entec and the crew of 'Wired'. Chris Cowey, the associate producer, explained to me what the aims of the show were.

"It was important that we had flexibility to present the bands in a different way, because even 'The Tube', which was fresh and innovative in 1982, began to look stale by the time the last series was reached in 1987, due to the fact that it had been copied so much by other programmes. The best thing to do was to wipe the slate clean and make the whole thing a very independent production.

"We've tried to adapt the disciplines of television to rock and roll rather than the other way round. We made a very conscious decision not to do either the presentation or the interviews at the studio. It's best to leave it purely as a performance area because often the worst moments on television are when somebody is trying to introduce a band surrounded by a bunch of spotty urchins waiting for them to start up. Another reason for using Pinewood is to have space and freedom to be able to work hard on the two things that make artists cringe on television - sound and lighting.

"Usually TV companies tend to employ disco lighting on bands - which is not surprising because the guys doing it have probably been lighting news programmes for twenty-five years and when presented with a radical punk band the result tends to look like a cross between Saturday Night Fever and a Woolworths lighting department. As we have the advantage of being independent we can bring in companies like Entec to look after the studio sound and lighting.

"This can make a happier atmosphere because a lot of the bands and people coming through already know someone from Entec. Although the guys at ITV companies are very experienced and keen there is still a little bit of animosity between bands and TV people because there are rather more tweed jackets and leather elbows as opposed to denims and leathers. We're now five pre-records into the series and it's starting to look like a really good programme. After the sixth it will look like a brilliant programme! After the first programme went out on May 6th I knew it wasn't perfect and that it had problems but I was more proud of it than the first Razzmatazz or Tube that I worked on for Tyne Tees.

"We've got to be broad based in our appeal. In fact it's easier to say what type of bands we wouldn't go for - i.e. the bands that you're going to see miming every week on Top of the Pops. Top of the Pops do that very well and there

shouldn't be another programme trying to do the same thing. Also we wouldn't show lots of wacky videos because 'The Chart Show' does that very well. We've got to offer something different in live performance, and we've had all sorts of bands through here, although we generally aim at people more interested in music than just listening to the top twenty every week.

"When The Tube was on there were a lot of outlets for live bands, but since it finished everyone else seems to have given up as well. I'm sure that as this programme becomes successful there will be a glut of copyists - which is fine. The more outlets there are for live bands and new bands the more the music business takes a better shape than when it's dominated by radio and people miming on a show.

"While we don't want it to be like 'Top of the Pops' we also don't want it to be like an 'in concert' programme because you can actually go to see the band do a gig if you're that interested. We try to offer an alternative without being 'alternative trendy'.

"We spend a great deal of time sound checking, and a lot of thought, time and effort into how we present a band. You've got to be realistic about budgets. You've got to balance the spending of money on the right things when necessary: on the best look possible, and the finest quality of acts, sound and lighting. In order to do that there is no point in cutting corners.

"Willie Patou designed the stage set and he was chosen because one of the first things he said was that he didn't want it to look like a TV rock and roll programme. It was music to our ears!"

Colin Rowell, the stage manager, explained that



Julia Fordham in performance on the new TV series - 'Wired'.



Mike Sutcliffe, lighting director.

it was his job to negotiate with the bands as to what they required and to look after them on the day. He said that with TV shows the lighting is usually pre-determined although the lighting designer might well contribute ideas. One of the crew at 'Wired' was Aztec Cameras' lighting designer - which was useful when the band appeared on the programme as he had an idea as to what was needed. As the show picks up there will be more input from bands, but basically the lighting design is down to Mike Sutcliffe, the lighting director.

Mike has worked with lighting designers at rock concerts where he had been brought in to make the concert look correct for TV. This experience can sometimes be somewhat fraught, because lighting designers have often had bad experiences working with TV directors who tend to throw lots of white light at the stage rather than take what's there and give it a little 'extra'. Mike filmed The Police 'Synchronicity' concert which Nick Sholem designed and, like most live shoots, it had its problems. Godley and Creme were directing it and they wanted straight-on shots of the concert but, as usual, the cameras couldn't be placed where they wanted them and they ended up 150ft. from the stage using long lenses. As a result there was only just enough light to shoot - which was a pity as Mike really liked the rig Nick had designed.

"The rigging has so far remained constant as have the three stages, although they threaten to move them. I can move the lamp bars around fairly easily and so can accommodate most things," explained Mike. Lack of time is a difficulty. There always seems to be better pictures within the rig but no time to actually sit down and find them. It's a lot more difficult than Top of the Pops where you have one band on one stage doing one number. Generally we do four or five numbers per band. They say they're only interested in two numbers for the show, but I know that they will take two more and put them in a later show. So you've got to give variety."

Last year Mike did a shoot of the Peter Gabriel show and very much admired the work of Jonathan Smeeton, although filming on tape does have problems.

"Film has much more latitude," he said. "You can get away with greater differences in level. Tape has to have fairly even lighting - if you want to colour the band behind they've got to be almost as bright as the person in front. To try and tell the lighting designer at the show to pull the main artist down a bit is difficult because it looks wrong to the eye but not the camera. Film is easier because we've now got fast stop, and can almost shoot a show with what is there - even some of the smaller bands with smaller lighting rigs."

Note: Mike Sutcliffe is also currently working on 'The Last Resort' show.

Whitney Houston 'The Moment of Truth' Tour

Catriona Forcer talks to lighting consultant C. D. Simpson

Having caught one of Whitney Houston's many Wembley Arena concerts I asked Lighting consultant C. D. Simpson of Vari-Lites in Dallas to explain the technicalities of the impressive lighting design for the show.

"For a start, there are two shows we can do," he said. "One is 'in-the-round' and the other is a regular proscenium arch show. Here at Wembley we're 'in-the-round'. On the U.S. tour it would be about 50/50; in fact we even have a backdrop for the proscenium shows and sometimes the cueing can be different.

"On this show we are using 39 Vari-Lite VL2 spotlights and 39 VL3 Wash luminaires. We are also using 10 Ray Lights with ColorWiz colour changers and 8 Micro Brutes with ColorWiz colour changers. A total of 6 Leko's and some peripheral incandescent lighting built into the stage, designed to give a white, red, blue or magenta ring, completes the lighting rig.

"The entire show is run through a Vari-Lites Artisan console except for the colour changers. These are controlled by Kevin using a conventional desk (at Wembley an Avolites 60 Channel Rolacue). Kevin also calls followspots and looks after the 'smoke' and such like. Something Allen (Branton) always likes to do is split the duties up between lighting desk and followspots. Allen is very concerned that, particularly with female artistes, great care and attention is placed as to the followspots themselves. He feels that it is a full time job talking the followspots through every process, making sure that the feet are eliminated and all the other small things that make the difference between a good show and a very good show.

"We get quite a lot of freedom on this show to do what we think is necessary. In particular I take quite a lot of time to make sure there isn't a lot of cueing going on. I think that's the advantage when you split the board operator, lighting director and followspot caller, because you have an opportunity to sit back and observe what's going on, instead of reacting to a script that you're calling every night, or the choreography you're doing on the desk. You're able to lift your head up and give consideration to things.

"The design of the show allows a quick change from proscenium to 'in-the-round' format. This can easily be accommodated in overnights. Changing to a proscenium show necessitates hanging the Vari-Lites in a different configuration on the trusses.

"The tour started on July 4th (1987) in the United States and toured for about five months there. Three weeks ago we started the European leg in Rotterdam and that will take us through to about the first week in July. This particular show was designed by Allen Branton, and my job is simply to bring it to realisation. I've worked with Allen on several other projects as consultant, namely David Bowie's Serious Moonlight and Glass Spider Tours. I've also worked as consultant with Allen on Diana Ross, Elton John, Linda Ronstadt and Ozzy Osbourne.

"I've also worked on several videos, a Michael Jackson video that hasn't been released yet and I also produced a Prince Video for the song 'Kiss'. Also I once lit a feature film that failed at the box office called 'Invaders from Mars', and spent some nine weeks on that project! I like a wide variety of things, from the occasional industrial show through to concert productions, whether they are rock or in the Diana Ross Vegas style.

"After this European leg we have a two month break before going onto Australia, Japan, New Zealand and Hawaii, and that takes me up to the end of the year."

I asked him about his long-term plans and aspirations.

"Well, I'd really like to get more involved with television. I think the concept of automated lighting in television has really yet to be explored as it has in the last several years in concert presentations. I think that there are tremendous creative opportunities in managing it because it's a different process with lighting automation. You have to organise yourself a bit differently but the results can be so much more if you do.

"Sometimes it's hard for people to accept automation as a workhorse as opposed to a special effect, and that's where I think I can contribute something in television.

Equipment on Tour

Nelson Mandela 70th Birthday Tribute Wembley Stadium, June 11th

Lighting Control Equipment:

- 1 x Avolites QM500-180
- 1 x Avolink Q-Patch (180 x 512 patching computer providing high-speed DMX 512 data link between desk and dimmers)
- 1 x Avolink 180-way decoder (to provide analogue signal to dimmers)
- 4 x Avo 72-way dimming systems for stage lighting
- 3 x Avo 48-way for additional stage lighting and audience lights.

Prince tours with Crest

dB Sound of Des Plains, Illinois, USA recently purchased a total of 54 Crest Audio 8001 amplifiers to power their constantly-in-demand touring system. For many years dB have provided Prince with sound reinforcement equipment, and he embarked on his latest tour marathon in June.

We understand Crest amps were selected only after a lengthy audition process when most makes of power amplifier were evaluated. (Crest Audio products are distributed in the UK by Electromusic of London, who have 8001s available for demo.)

Lighting and stage sets for Prince are by Light & Sound Design of Birmingham and Los Angeles.

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EQUIPMENT *News*

Anytronics Auto Display Pak

The Anytronics Auto Display Pak is based on their successful PP405 5 amp per channel power pack, with the addition of a sequencer, and is designed primarily for use in areas where 19" rack mounting units are impractical and too costly, such as display lighting in shops and showrooms.

The unit consists of a programmed chip containing 16 basic sequences selected by means of a rotary switch. Further control of these sequences is made possible by the 6-way rotary switch which gives Forward, Reverse and Auto Reverse direction options, in effect giving the unit 48 sequences. This switch also has Standby, All On and Auto Programme positions.

In the Auto Programme position, all the sequences will be run through four times each. An Auto Speed option is also available in the Auto Programme mode. This is basically pre-programmed speed changes on selected sequences. If this function is not desired, there is a jumper plug fitted to the circuit board which may be moved to disable it. The Speed Control will give a speed range from approximately .5Hz to 10Hz.

The whole pack can be disabled or enabled by a +10V signal from a low voltage switch panel. As with the Auto Speed, this function is selectable by a jumper plug.

If you require any further information contact Anytronics Limited, Unit 8, Hillside Industrial Estate, London Road, Horndean, Hampshire PO8 0BL telephone (0705) 599410.

Ramsa Debut Micro Mixer

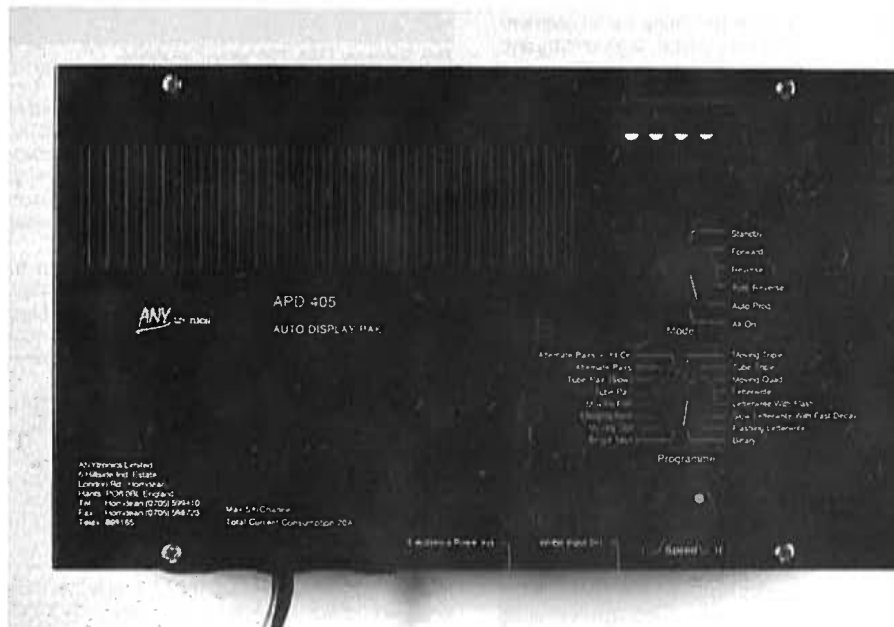
Panasonic's Ramsa brand has an established reputation in the UK for its range of powerful compact PA speakers and microphones. Perhaps less well known is that the company has been making considerable inroads over the last two or three years in many overseas markets with high quality mixing consoles.

Now Ramsa is to enter the UK market with the WR-XO1E pro micro mixer, a sophisticated, computer-designed yet low cost mixer perfect for A/V post production, radio broadcast, disco and music recording applications. The WR-XO1E provides 8 stereo and 4 balanced mono mic. inputs, enabling up to 12 sound sources to be simultaneously connected and controlled. Push button switching between these sources makes for extremely easy operation.

Two of the stereo inputs are specifically matched for record turntables, the other 6 - grouped in two input sections - cater for all types of line equipment including tape decks, VCR's, CD players and synthesisers. The 4 mono input sections each provide a trim pot to cater for both mic. and line levels, an Echo Send routed to the mixers FX loop, and a 2-point mid-range active



Ramsa's WR-XO1E pro micro mixer.



Anytronics' new Auto Display Pak.

EQ. Complementing this on the master section is a 2 band EQ, also active, centred on 80Hz and 12kHz.

In addition to main stereo and two mono outputs the WR-XO1E features twin Record Outs allowing recording of a master mix on two separate tape decks. Sophisticated front-panel monitor routing facilities include cueing of programme sources at the touch of a button.

Three particular features set the WR-XO1E apart from conventional mixers of this type, say Ramsa. First, the faders on the stereo input sections incorporate microswitches which start and stop tape decks or turntables automatically as the faders are raised and lowered. Next is Auto Mute, a function which automatically mutes the stereo programme source allowing, for instance, a DJ to talk over the music without having to adjust volume levels. Lastly, a compressor is built into the mono input channels to ensure smoothly controlled vocal response. Both the Auto Mute and compressor can be adjusted for level and sensitivity via trim pots located underneath the mixer.

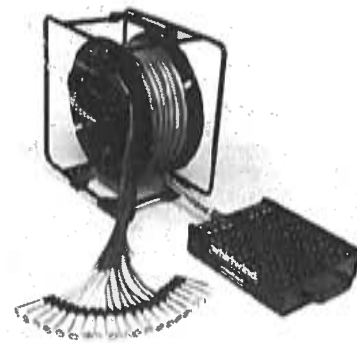
Apart from normal 19" rackmount use, fixing points are provided for wall and shelf mounting, tabletop and recessed table mounting. The input/output panel is even moveable to match with preferred siting position.

For further information contact Ian Sharpe, Ramsa, Panasonic Consumer Electronics UK, 300-318 Bath Road, Slough, Berks SL1 6JB telephone (0753) 34522.

New Whirlwind Distributor

The new company Selectron (UK) Ltd, has taken over sole UK distribution of Whirlwind leads, cable systems and spares. With the accent on an expanded range of audio products that expect to attract the specific attention of the pro audio market, Selectron is now offering 95% of the entire Whirlwind catalogue of cables, plugs and accessories, ex-stock, for immediate delivery, or, from its trade counter.

Apart from expanding the range of Whirlwind Leader cables and increasing the availability of bulk cable, Selectron say they have substantially increased the product range and at the same time reduced the price of all 'ready made' Whirlwind leads and cable systems, by around 15%-20%.



Selectron have taken over UK distribution of Whirlwind products.

Selectron are based at Selectron House, Springhead Enterprise Park, Springhead Road, Gravesend, Kent telephone (0474) 60521.

Flying Shermann

Shermann Audio, who last year launched their GX Series, are about to release four full range systems and a 1 x 18" bass system to be known as the GX-A Series. Three of the new GX-A Series cabinets are based upon existing GX Series models namely the Cub, Colt and Commando. Retaining these names the new GX-A versions feature an arrayable design cabinet, improved mid-range drivers, a new compression driver on the Commando and flying fittings as standard.

The GX-A and GX-A 500B are both totally new. The 400 is a passive or two-way active drive system featuring a 15" bass driver, twin 7" mid-range drivers with HF being handled by a 1" compression driver on a CD horn. The 500B is loaded with a single 18" driver.

The five units are fitted with six-position, side mounted flying plates and a single position rear plate, recessed handles, a strong mesh grill and frame covered with a black acoustically transparent foam and a new, extremely durable paint finish in a choice of black or dark grey.

A 2 x 18" sub-bass system has been added to the GX Series to complete a comprehensive range.

For further information contact Shermann Audio Ltd, 27 Mochdre Industrial Estate, Newtown, Powys SY16 4LE telephone (0686) 626025.

Laser Video Projector

Laser Creations' new LVP laser video projector combines both raster and vector techniques to make a complete 'image machine', with the capability to produce huge high quality video images, graphics and exciting laser beam effects, all from the one projector.

Time-sharing of the laser beams between raster and vector scanning has produced a projector with the remarkable ability to make very large screen images of superb colour and definition while at the same time providing the excitement of high-power laser beam effects, logo writing and patterns.

Compared with previous laser video projection systems, the LVP scan module has higher efficiency, much greater output, improved image stability, less image noise, better colour balance, and faster set up, say Laser Creations.



Unique capabilities - Laser Creations' new laser video projector, LVP.

Incorporated within the main projector head are conventional X-Y vector scan heads of up to 3 channels with blanking or with full R.C.B. colour control on a single channel. The vector information is controlled by a dedicated 3-D graphics system - capable of high resolution images. The vector scan head utilises the zero order beams that are a by-product of the main video projector; these beams are combined to give a pure white light. This enables the vector images to be projected simultaneously with the video images.

Utilising the zero order beams, a beam distribution table has been included to allow up to 24 different beam paths to be accurately positioned to remote areas, mirrors or special effects.

For further information contact Laser Creations, 55 Merthyr Terrace, Barnes, London SW13 9DL telephone 01-741 5747.

New Signal Analyser

The new DSA-720 from Spinnov (Belgium) combines 16-bit resolution and 20 kHz bandwidth with a range of new features that makes it far more versatile than any competitive product, say the company, who are looking for a suitable distribution network in the United Kingdom.

The dual-channel VMEbus-based instrument has a selectable fast Fourier block size (up to 2K), a full range of FFT facilities and all the classical measurements including RMS, distortion, frequency and signal-to-noise ratio.

A main feature of the DSA-720 is that it includes dual channel programmable waveform generators and signal analysis facilities within the same instrument. This means that its time domain and frequency domain measurements are extremely accurate.

In addition to pulse, noise and low distortion sine wave signals, the programmable generators can each add as many as 1024 separate sine waves to produce the most rigorous. The individual waves are added together in an optimal way to minimize the crest factor. Extensive trigger facilities are designed to detect and record complex waveforms.



The Spinnov DSA-720 signal analyser.

Deep 256 Ksample memories on each channel record lengthy time phenomena, and once made, an acquisition can be scan-analysed for frequency or time domain information. A rapid swept-sine mode simultaneously measures harmonic distortion and frequency response curves against linear logarithmic (1/12 octave) sweeps.

Spinnov say the DSA-720 is surprisingly easy to use despite its impressive range of features: calibration software corrects amplitude and phase errors; and all the instrument's functions are controlled via a light pen and a set of on-screen menus.

For further details contact N.V. Spinnov S.A., Pleinlaan 2, Building K-6, B-1050 Brussels, Belgium.

Harman Launch new Rauch Amp

Harman, the UK distributor for all Rauch Precision products, have launched the new DVT300S amplifier. This new dual channel amp has been designed for the sound reinforcement market where the needs are maximum power with minimal weight and size, whilst maintaining reliability and sound quality. The DVT300S is a 2U amplifier weighing a mere 14kg. Despite its size it is capable of delivering 600W continuously into 4 ohms from both channels. In bridged mode this small package is rated at a massive 1.5kWatts (4ohms).

This enormous power to weight ratio has been achieved by scrapping the conventional power supply with its high weight and low efficiency and developing a 1 kW resonant switch mode PSU (RSMS) which are used in pairs, one for each channel. The RSMS is a remarkably efficient method of supplying power to the amplifier in both weight and size terms enabling the manufacture of a high powered and compact amplifier, say Harman.



The new Rauch DVT300S amp.

For more information contact Tim Frost at Harman UK, Mill Street, Slough, Berks SL2 5DD telephone (0753) 76911.

3-Way Variable Crossover from McKenzie

McKenzie Acoustics has added to its own range of loudspeaker crossover units and filters with the arrival of their 3-Way Variable Crossover, for rack mounting.

This active crossover gives invaluable system flexibility with a bass frequency that can be adjusted in 50Hz steps from 800Hz down to 50Hz, and a mid to high band that can be varied by 250Hz steps up to 4KHz. Attenuation is 24dB per octave and distortion produced is less than 0.005%. Bold graphics and a pair of LED displays indicate at a glance the operational frequencies.

For further information contact McKenzie Acoustics, 286 Bradford Road, Batley, W.Yorks WF17 5PW telephone (0924) 477102.

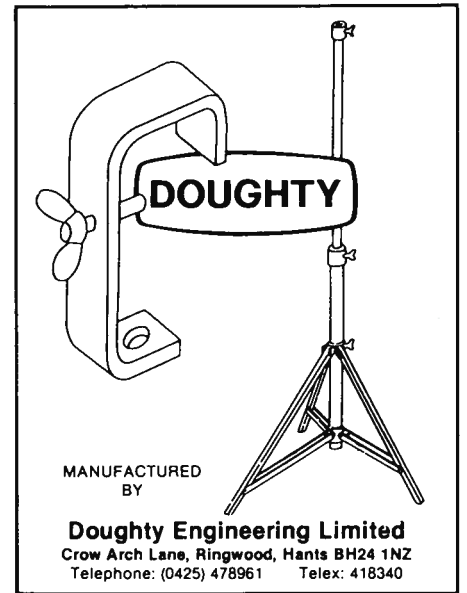
Budget Radio Mics

H.W. International, U.K. Distributors of Shure products, have collaborated with a U.K. manufacturer of radio systems to put together a range of D.T.I. approved radio mics. A choice of three systems is available: the handheld HW58, incorporating the legendary SM58 head, the head-worn HW10, or the HW839 lapel mic. Five different frequencies, colour-coded for ease of recognition, are available within the legal range.

For further information contact H.W. International at 3-5 Eden Grove, London N7 8EQ telephone 01-607 2717.



Budget radio mics from HW International: a choice of three systems is available.



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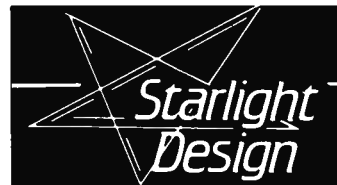
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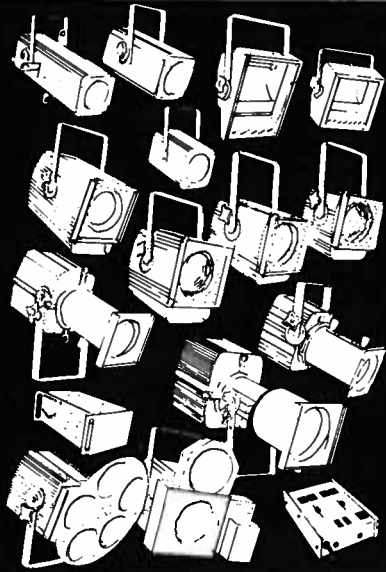
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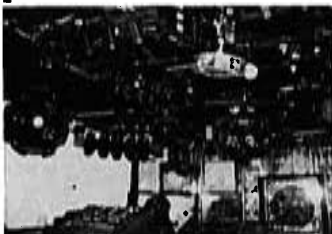
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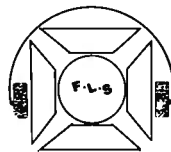
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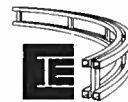
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