

LIGHTING+SOUND

International



THE FANTASY WORLD OF SIEGFRIED AND ROY

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APRIL 1990

LE PALAIS AGAIN

Phil Roper investigates the technical changes behind the new-look Le Palais, Hammersmith

Things have been a-changing at Le Palais, Hammersmith, where Carlsbro Technical Services have recently completed a major technical re-fit and re-design. With a Stephen Court designed sound system, a Memotech videowall and an Enigma controller, Ivor Green and his team have created something rather special.

As Bert Sale, Mecca's manager at Le Palais tells everyone: "I now have a venue I can sell. Great lighting, mega sound and the UK's largest videowall."

When Carlsbro began work, they were unable to utilise much of the existing equipment. The only items retained were the Par 64 cans, four of the original six columns around the edge of the dancefloor, and the video monitors. During the installation the re-siting of the videowalls necessitated the installation of major steelworks including the fitting of two 40ft long girders which each weighed in excess of 500kg. All the installation works were carried out whilst the Palais was fully trading, and the team of engineers on the project worked from the close of trading at 3am through until 8pm each day. The engineers even had to work on the ceiling during opening hours.

The first phase involved the assembly of the equipment enclosures on the principal stage and the re-siting of the video walls. The main rig changeover was accomplished between the 6th and 21st of January using a team of 16 engineers. The Court speakers, weighing in the region of 500kg each, were suspended directly from the roof structure using high tensile steel cables. Further alterations are still to be carried out on phase adjustments. Ivor Green also told me of some constraints on the bass system performance as there is an environmental noise escape problem at low frequencies. No doubt this will be dealt with.

Japanese glass has been used for some of the neon as it allows deep colours to be utilised which can easily be manufactured in UK glass shops.

The use of the Enigma control system (more of which later) has simplified much of the circuit wiring. Ivor Green commented on its application: "It offers very exciting possibilities from a control point of view. It proved to be a great convenience having a serial data link from the Enigma sited in the DJ console to the Enigma interface units located on the main stage. Almost all of the lighting equipment on the rig is driven from an individual dimmer pack or switch pack channels thus facilitating much more complex sequencing and 8 band sound to light control."

The Enigma is an exciting concept in lighting control. I asked Ivor Green how the Midi and SMPTE interfaces improve on its abilities. "We are exploring the possibilities of the Midi and SMPTE interfaces built into the Enigma. Essentially both facilities offer exciting new control interfaces for the operator. Midi allows exploration of the fact that a music keyboard is velocity sensitive and the Enigma interface allows us to

interface this with lamp or neon brightness thus allowing the operator a much greater degree of 'expression'." During commissioning tests, Carlsbro established that suitable offsets could be applied to both tungsten and neon lighting to allow lamp brightness to be precisely related to key velocity. It is a straightforward process to allocate different areas of a keyboard to different areas of the lighting rig. It will be possible for a band on stage to be allocated control of the whole lighting scheme through their midi output.

SMPTE control allows complete synchronisation of the light show to a piece of pre-recorded material, thus allowing pre-preparation of lightshows to music with all step cues coming from the time code. Communications from the Enigma to the videowall will be added during the next three months. It is obvious that controllers like the Enigma will proliferate and that their costs will come down. It offers the nightclub industry an exciting future in terms of the control of the more complex installations.

The sound system at Le Palais was designed and built by Court Acoustics of Windsor. As Le Palais is a rather unusual venue in that most clubs and discotheques are either square around the dance floor, or long away from the DJ console, it requires a short throw sound system — only around 60 feet, but with a wide dispersion of around 180°. Le Palais is a live music venue as well as a discotheque, so the stage area is very much an acoustical focus, and it is appropriate that the sound source is on the stage rather than around the dance floor.

The other consideration is the new sound level law. Historically, most people — not just DJs — confuse the excitement in music with level. Understandable because most sound systems don't start to get exciting until the volume is wound up. This may be a clue to those operators and owners who are

horrified at the prospect of being legally limited to 95dB. The excitement in music is not just what you hear, but what you feel by bone conduction — bass. 95dB is not very loud or exciting when you have the usual array of horns blasting three kHz razor blades at you, but 95dB at 20Hz and 20,000Hz is very exhilarating.

A Court sound system was used at the Hammersmith Palais in the seventies, with George Macrae on tour, and the venue's unique qualities were evident then. Combining these with the new sound level laws gave the design criterion for the new sound system.

It was decided to create a stage-based sound system that would cater for the dynamics of compact discs as well as records, and for live performance without feedback and overspill which has always been a problem at this particular venue. The system also had to provide an intense sound field on the dance floor up to the control console, as well as a very wide horizontal dispersion to cater for the upper and lower bar areas to the sides of the stage.

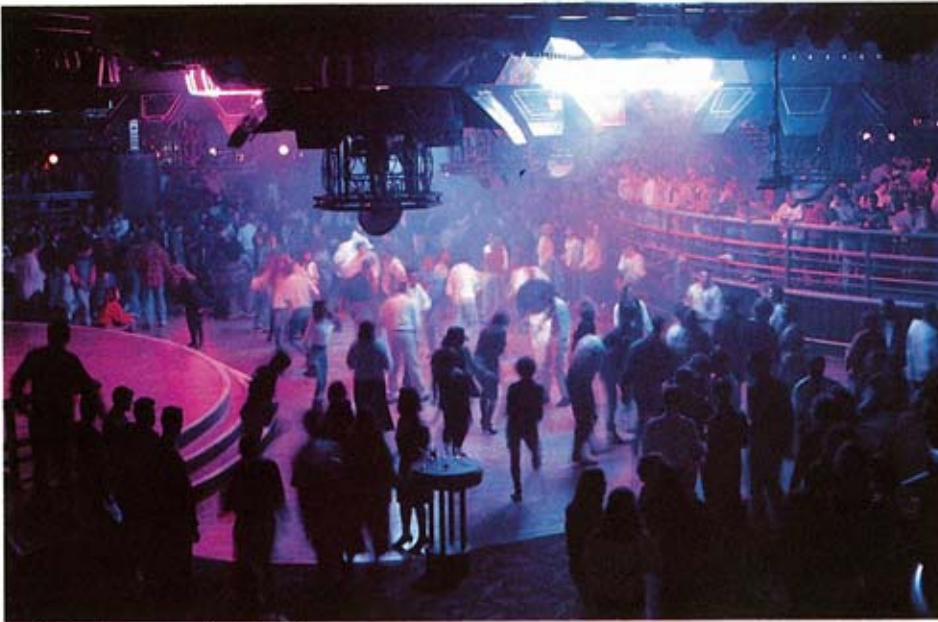
The Court System 1000 was used for its particular qualities in design. When used as a single speaker system, it provides a typical horizontal dispersion of 90°. When they are stacked, they perform like a line array which has certain unusual qualities. A line array gives an intense sound field on axis, but reduces vertical dispersion, thereby avoiding unwanted reflections from the ceiling which is particularly low at Le Palais and is covered in a host of lighting apparatus.

Since you are only hearing part of the line array, you can also stand quite close to it at high sound levels without being blasted. As you move away from it, you hear proportionally more of the array, so instead of reducing in volume as you move away from the sound source, it actually maintains its level.



Great lighting, mega sound and the UK's largest videowall.

Photos: Shariah Vafa



Le Palais: A new era for the club.

Le Palais' System 1000 is arranged in two massive enclosures measuring eight feet wide by six feet high and weighing over half a ton, suspended over the stage and dance floor in the form of two hi-fi speakers. High frequencies are handled by 16 ring radiators in Di-radial line arrays and cover the frequency range 8-2000Hz. Mid frequencies are handled by eight 4" titanium compression drivers in bi-radial horns, covering the frequency range 1.5kHz-8.5kHz. Low mid frequencies are handled by eight extended bass mid range 12" drivers in conical horn flares. The conical horn has the advantage of high gain to match the compression drivers and covers the frequency range of 80-1.5kHz. With a power handling of 2.4kW

and high efficiency of 103dB this band is especially important for live performance as well as recorded material.

Bass frequencies are handled by eight extended bass 15" drivers in conventional Court bins. These are 14' folded horns with reflex loaded back chambers. With a total power handling of 3.2kW and an efficiency of 106dB over the frequency range 20-200Hz.

Low bass frequencies are further augmented by eight 8" drivers in sub bass resonators covering the range 20-90Hz and with a power handling of 4.8kW giving Le Palais a total bass power of 8,000 watts with a potential low frequency output of more than 130dB at one meter.

The system is run 5 way active from a variable phase electronic crossover feeding an array of C Audio power amplifiers with a total output capacity of 16,000 watts. To combine the best advantage of both types of amplifier, whilst the high frequencies will continue to be run by C Audio's Mosfet amplifiers which have an excellent transient response, the low frequencies will be driven by C Audio's new bi-polar amplifiers as soon as they are available.

Sounds are mixed by a Formula Sound PM80 with sound level monitoring and control, and live mix is from a 30 channel Soundtracs studio/live mixer. It is hoped that Le Palais will soon convert to all digital records in the form of compact disc and DAT and be the first club in the UK to go all digital.

Le Palais originally had two Cameron 5 X 5 videowalls. Memotech Computers, in conjunction with Carlsbro Technical Services, have re-installed the system making it the largest club videowall in the UK.

As the equipment had seen a long period of hard use, it was decided the best course of action was to remove it completely. It was economical to use the Barco monitors again following a full re-alignment. All of the electronics were replaced to take advantage of new technology. Memotech have installed their System 2000 so the club can take advantage of new features as and when they become available.

Installed alongside these at Le Palais is the Reflex Touch Controller which, Memotech say, reduces almost to zero the amount of specialist training involved. Any operator can now achieve the best effects from the wall. The company is currently working with Advanced Lighting Systems to ensure full compatibility with the Enigma controller.



A view of the neon-decked rig showing the videowall at the rear.



Memotech's videowall – the largest in the UK.

(They will be sharing a stand with ALS at SIB/Magis 90 in Rimini displaying a 3 × 3 videowall).

Because of the non-standard aspect ratio of the new 10 × 5 videowall at Le Palais special care had to be taken in the signal processing.

To display a full screen picture, the operator can choose between image compression or cropping in order to fit the format: the selection depending on the type of material being shown. A colour camera with pan and tilt has now been installed and with a video typewriter it means the system is extremely versatile.

The main controller at Le Palais as already mentioned is the Enigma from Advanced Lighting Systems of Scotland. John MacPhail of ALS is probably the most difficult man in the industry to pin down, but after extensive hunting . . . success! The Enigma already boasts quite a pedigree and is installed in the Discotheque Royale in Manchester; Empire, Leicester Square; Magic Circus, Madrid; Dady'O, Mexico and Eden Beach in Malta. ALS always assist on an installation, particularly if it is the first one. Installation of the Enigma itself takes only two to three hours. As regards the operator training, most operators are familiar with using the controller in one to two hours, while the programming procedures and complete familiarisation with it can take another four to six hours. I spoke to John MacPhail about the applications of Enigma: "It is very flexible both from a programming and real time aspect in relation to the overall lighting design and fixtures. As in any situation, you very much get out what you put in, and this is particularly true of moving lights."



Le Palais in full swing.

Carlsbro requested that a sound to light bar graph facility, i.e. 20 channels of neon sequenced horizontally in bar graph fashion, be incorporated for Le Palais. ALS also made available 16 different attack and decay parameters applicable to Enigma's eight channel sound/light analyser. This gives a very accurate and emotive interpretation of lights to music, particularly with the hundreds of independent neon channels in Le Palais. The system allows residual brightness and modulation. In addition, you can apply any one of the eight sound/light bands to trigger an audio chase, e.g. you can have a bass chase on the Par cans and a snare drum type chase on neon. Carlsbro also requested access to memories via a fader panel which is to be released shortly.

Communication between videowall and Enigma is via the RS232 ports. Enigma will access the memories within the Memotech computer and will also provide additional memory storage on the internal hard disc. 128 memories can then be instantly accessed from switches on the 32 way touch panel. It can then incorporate the videowall effects within a master sequence for all the lighting, and apply any of the Enigma facilities including Midi, SMPTE, and sound to light triggering to the videowall memories. A spectrum analyser effect can be simulated on the Enigma preview colour monitor and then displayed on the videowall.

Enigma has been designed with particular emphasis on very fast, real time access to any part of the system. As such it is ideally suited to nightclubs and discotheques and also for live use. ALS have been speaking to companies in the touring market who have expressed a serious interest in the controller,

in particular with reference to an 'expert version' moving light package which has been developed with television, stage and live performance applications in mind.

Enigma is currently able to operate lasers and has done so since its first release in 1988. On the installation in Mexico, Enigma runs a 4 scan Argon and Krypton laser, the beam actuators and the colour box. On other installations, Enigma controls hoists, elevators and smoke machines. Since it is a software based system it is relatively easy to adapt to new effects as they become available. In Le Palais, Carlsbro have utilised all the dimming channels and it is the only installation to have used all 512 to date. In its current form, Enigma will control 512 dimming channels, plus 1000 switching channels and is expandable to accommodate over 1000 dimming channels.

Since Enigma will control multiple channels, it can be adapted to a wide variety of applications including museums, theme parks and leisure centres. Indeed any situation where a multiplicity of channels need to be controlled from a central point.

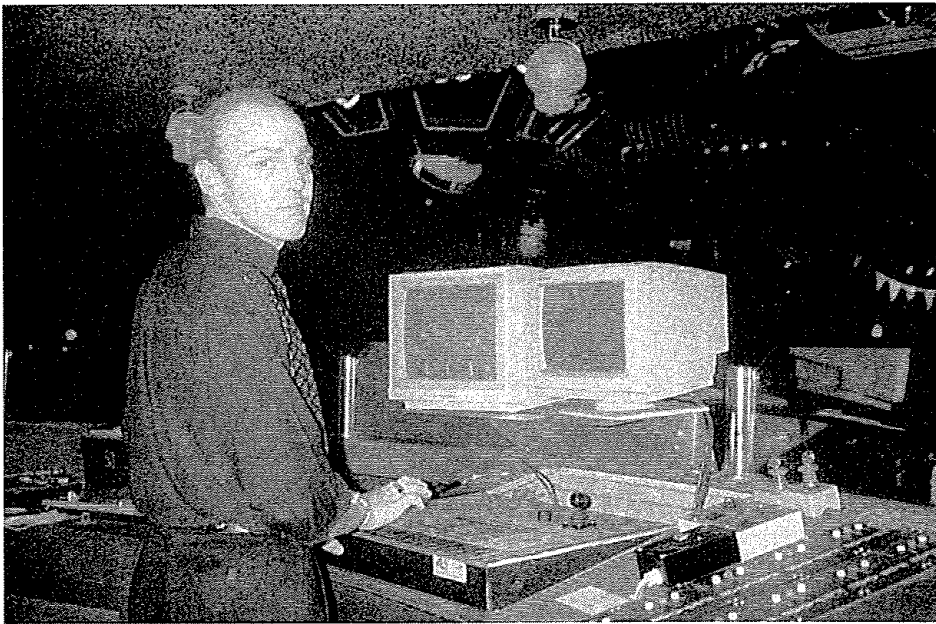
Sadly, I was unable to have a go on the Enigma as Le Palais was trading. But I was able to speak to Richard Gibbons, prize winning light jockey who operates the controller every day. I questioned him on the operation of the system. "It obviously depends on the individual and in my case the ability to absorb a lot of information in a very short space of time. After half an hour with John MacPhail I came away with an understanding of what Enigma could do, but not how to do it. After visiting Carlsbro and taking an Enigma back with me for a day, I grasped the basic operation. Once you have



The 1200 MSR Coemar venue in action.



The Venus lowered from the central Japanese neon rig.



Richard Gibbons, resident light jockey at work on the Enigma control system.

broken down the terminology used then everything falls into place. I would like to see the 'help' menu extended to show step by step basic procedures. I would say that it would be a distinct advantage for all lighting jocks to have experience of the Enigma. I think that it is inevitable that a computer in one shape or form will become the tool (and not the replacement) of light jocks. I view the Enigma as a very complex programming instrument which still has to be operated with a degree of talent."

It is a credit to Ivor Green and all concerned that Le Palais has been professionally installed to a very high

standard, considering the difficulties faced en route. It is interesting to see that a discotheque light show can still be effective without any 'intelligent lighting' in sight. Ivor Green did tell me that 24 units were re-installed, but Mecca asked him to take them out. Say no more.

Equipment List

- 96 X Par 64 cans
- 48 X Coemar Antares cans
- 1 X Coemar 1200MSR Venus
- 4 X Coemar 750w Bellos
- 20 X Optikinetics Par 56 Soundscanners
- 6 X Fabtronic Scanners
- 8 X White Lightning strobes

- 80 X Par 56 cans Soundtech
- 256 X Par 36 pinspots Soundtech
- 48 X Fabtronic F70s
- 4 X Rotosurfers
- 336 X individual elements of neon
- 64 X Mode dimmer packs
- 8 X Mode switching packs
- 1 X Enigma computer
- 9 X Enigma interface units
- 2 X Jem ZR 20 smoke machines
- 1 X Pulsar Rockdesk (backup controller)
- 1 X Memotech Video Wall incorporating 50 Barco monitors, System 2000 electronics and a Reflex controller
- 1 X Court sound system comprising JBL components
- 1 X C Audio power amplifiers using both SR808 and SR606 models

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(SEE INSERT THIS ISSUE FOR
FURTHER DETAILS)

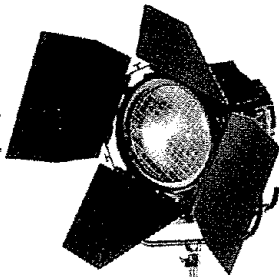
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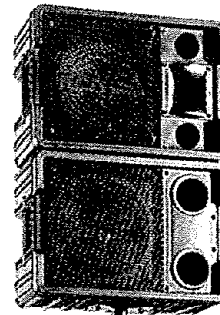
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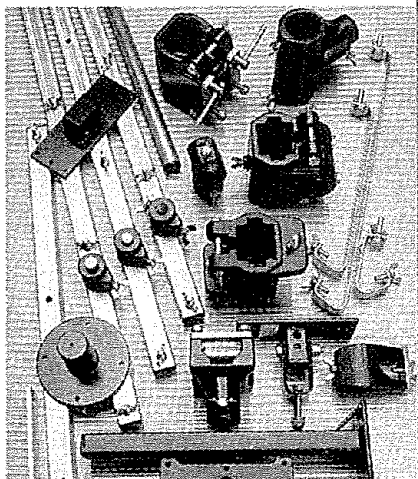
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