

# LIGHTING+SOUND

## *International*



IN CONTROL AT 4:1

- Designing to Scale at Patrick Woodroffe's 4:1 Studio
- Francis Reid at Photokina
- Into the Woods: Sound Planning from Autograph
- PLASA trio in control at Worthing
- Disco at Wrexham and Walsall Wood
- Forth Bridge Centenary Celebrations

NOVEMBER 1990



## 4:1 BUT NO TOY SYSTEM

Catriona Forcer talked to lighting designer Patrick Woodroffe in his revolutionary quarter scale fully working stage set studio under the Battersea arches

For many years Patrick Woodroffe, lighting designer to artistes such as Tina Turner, The Rolling Stones, Bryan Ferry and The Pet Shop Boys, has dreamt of building a studio where lighting rigs could be represented in a full working scale model. The advantages to a lighting designer would be great, particularly the chance to acquaint oneself thoroughly with the rig before production rehearsals. Woodroffe's dream has finally been realised with the opening of his 4:1 Scale Design Studio in Battersea, London. The concept is such an obvious one that I had to ask him why no one has thought to do it before.

"There are lots of reasons," replied Patrick. "It's not a cheap exercise at all, although I'm convinced that it is the way to go and I'm also convinced of its worth. As a lighting designer I realised there was a market as I'm the person at the end of the line who has to do the programming. I think it really had to be a lighting designer, or possibly a lighting company, who would take the first step to set up something like this. I don't think an entrepreneur, even a music business one, would have taken the gamble. I think lighting companies are probably too busy being lighting companies, so it was very much geared towards a lighting designer putting the idea into practice. I've played with the concept for many years and over that time I've asked people in the business what they thought about it. They also believed it was a good idea and offered help.

"The first thing that inspired me were the Thomas Mini Par Cans. What held me back was whether there was a way that everything could be run light for light as a normal lighting system. I went through periods of wondering if we could run it as just banks of lights running in eights just to bring them up to 240. Then I realised that if you're going to do it, it has to represent very accurately what's going on. I talked to a company called Midnight Design who do a lot of industrial shows, exhibitions and small pop shows working a lot with birdies and low voltage stuff. I went to see them at their old offices in West Kensington and they were incredibly positive

about it. They offered to do things like convert dimmers to 24 volts as well as converting the control side of the dimmers to 240. I got very excited and, as I was leaving, they offered to show me around the premises. In the bottom of the warehouse was this dreadful, old, dirty, damp basement which they said I could have to experiment in. It was a very generous offer and one which, needless to say, I took up.

"A week later I was clearing it out and starting on the mission of trying to get all the equipment I possibly could. The main part of it was the lights and I immediately ordered 250 on six lamp bars from LSD who made them up with miniature connectors and everything. Brian Croft from Samuelsons lent me two very old dimmers which we managed to bash into shape and which we still use. Meteorlites lent us a couple of transformers to run under 24 volts. Alan Thompson of Theatre Projects was very useful. I originally asked him if he had some funky old 24 way board I could use and I ended up with a 90 way Avolites board. Then the ball started rolling, people heard about the project and lent their equipment and expertise.

"I feel it will be a success because of the feedback I get from all the people in the industry. All the people who lent us equipment and supported us did so out of very altruistic motives, I think, rather than particularly wanting to get a job from me or saying thank you for work that we'd done in the past. There were companies which I've never done business with who lent equipment. It's a combination of everyone being a schoolkid at heart and liking models. Obviously a lot of the equipment we had to buy or build ourselves. A lot of the control end was lent by various companies.

"Having got this thing set up and in some kind of order we did our first job with The Pet Shop Boys, which I designed. Vari-Lite lent us an Artisan control board because we were planning to run the show through an Artisan anyway. We programmed all the generic lighting — Par Cans, cyc lighting, projection stuff — into the Artisan. The Vari-Lite stuff we did as

we normally do which is to represent them with mini Profile lights and then just have the Vari-Lite operator take notes. We tried out gobos by hand. We went to Brixton Academy for an 8am load-in for production rehearsals and by midnight on that first night we ran the show from top to bottom. That was very exciting. I always told those I worked with that the time when we could judge the success of the exercise was not the first day we saw it all set up in scale rehearsals because, of course, that was going to be impressive at some level; but we could really judge its success when we first set up in real life. If at that time we looked at the stage and we were very at home with what we were looking at, then I knew it was a success. If we had looked at it and it had been different then it would have been a nice gimmick but not a totally practical exercise. It was exactly as we had expected it. Obviously we did a lot of programming and re-programming but we very much had the basis of the show there. We were very familiar with the music as we'd run all the songs ten or 15 times before. It was one of the easiest jobs we'd ever done and one of the better shows I've done."

Patrick Woodroffe then went on to design for Spandau Ballet in the same manner and he became more convinced that he was on to a success. Then Midnight Design moved premises and everything had to be packed away, but very much with the intention of starting up again as soon as time and money allowed. He then became involved with The Rolling Stones and Tina Turner for nine months. During that time he talked about his ideas with some of the people on tour — mainly Dave Hill who was running the Vari-Lite board and Steve Nolan the crew chief. When The Stones arrived in London for their first Wembley dates Woodroffe took out a lease on the current Battersea site and between shows, they created the studio.

In mid-September 4:1 Studio had its first clients — Toto — with a 250 lamp lighting system, 24 Vari-Lites, 24 colour changers, on stage follow spots, painted cyclorama, cyc lights and follow spots.



Mannequins dressed in the band's clothes give a real impression of what will work both technically and costume-wise.



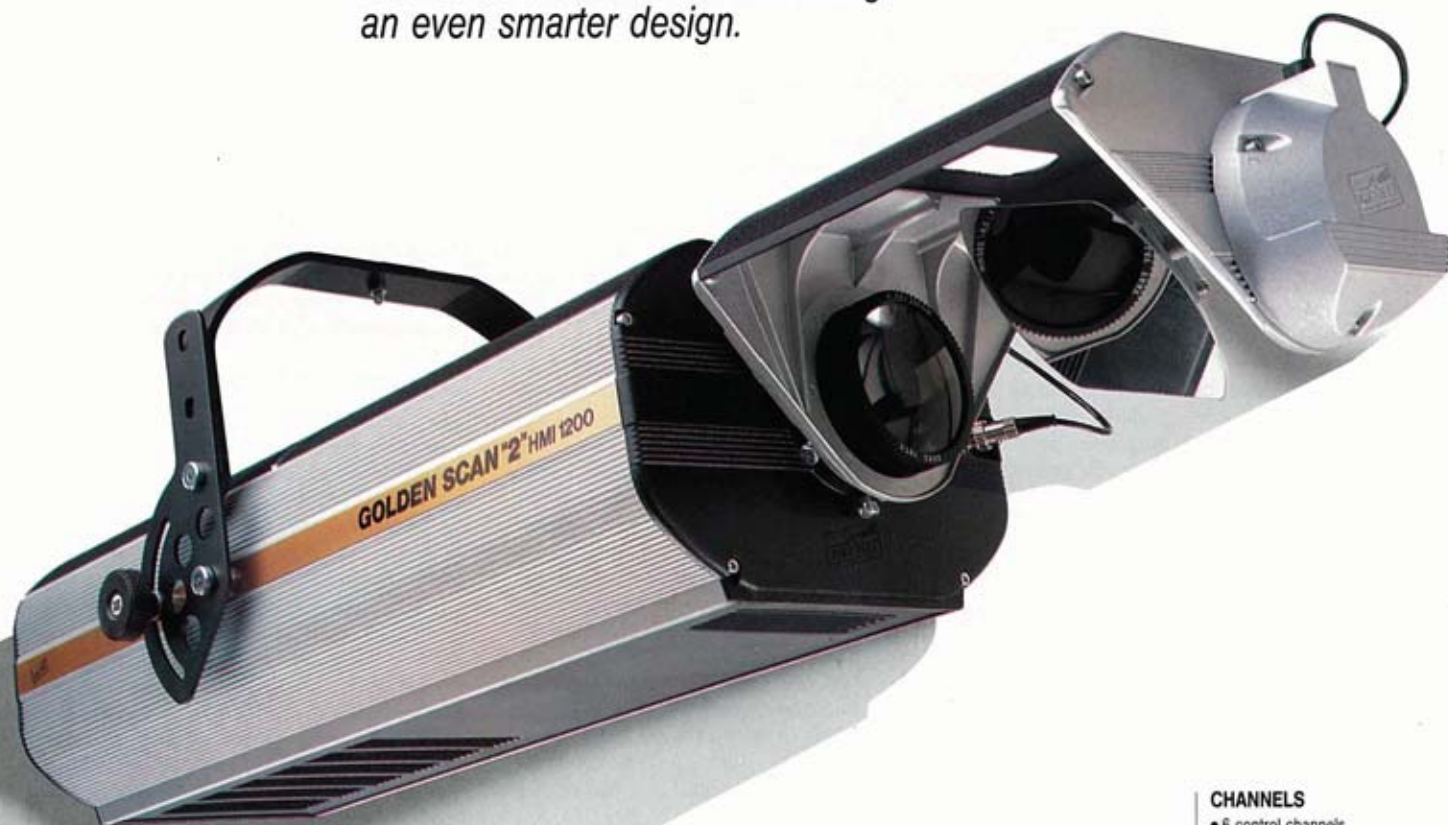
Patrick Woodroffe pictured in his 4:1 studio.



# NEW

# GOLDEN SCAN "2"

*The high performance projector, producing new exclusive effects and having an even smarter design.*



## BUILT-IN EFFECTS

### COLOURS

- Eight standard colours: yellow, red, orange, green, blue, violet, pink, white.
- Seven dichroic filters, selected for colour uniformity.
- Colour changer: with fixed positions or continuous (\*).
- Bicolour beams, by positioning the colour wheels in intermediate positions (\*).
- Colour change with or without temporary blackout (\*).
- Rainbow effect, by continuous rotation of the colour wheel (\*).
- Wide range of rotational speeds.
- If required, a filter may be inserted to convert the colour temperature from 5600°K to 3300°K (useful for TV studios).

### GOBOS

- Two wheels with 4 Gobos each. You can project each pattern separately or in combination.
- A total of 16 different patterns are available.
- Gobos change with or without temporary blackout (\*).
- An evocative rolling effect is available by shifting of two superimposed Gobos.
- Gobos are interchangeable and easy to replace.
- A wide range of Gobos is available on request.

### IRIS

- Fully variable beam size.
- Iris speed is totally controllable by the operator.

### STOPPER/STROBE

- High speed stopper to cut the beam for as long as required.
- Strobe effect rate fully adjustable from 1 to 7 flashes per second.

### POWER SUPPLY

- 220-240 Volts/50 Hz or 60 Hz

### MOTORS

- 7 high resolution steppers motors, controlled by the internal microprocessors.

### OPTICAL GROUP

- Made by extruded and die - cast aluminium, with double condenser lens and top efficiency parabolic mirror.

### OBJECTIVE LENS

- Interchangeable objective lens, with three different possibilities.
  - Standard dotation: 1:2.5/250 mm.
  - High definition trioptical corrected objectives (available as options): 1:3.5/200 mm 1:3/150 mm

### ADAPTOR

- Possible rotation of 360° on projector body.

### MIRROR

- Very high reflectivity

### CHANNELS

- 6 control channels.
- Channels function:
  - channel 1 = Iris
  - channel 2 = Colour Disk
  - channel 3 = Gobos
  - channel 4 = Stopper/Strobe
  - channel 5 = Pan
  - channel 6 = Tilt.

### INPUT

- GOLDEN SCAN "2" can accept either analogue or digital control signals, from a controller or computer.
  - analogue input: 0-10 V.
  - digital input: RS 232/423 - DMX 512.

### SAFETY NORMS

- The equipment is manufactured according to the latest safety regulations.
- Protection degree: IP 20.
- Power supply cable in compliance with CEI 20/22 III norms.

### DIMENSIONS

- HMI 575 W/GS  
Version: mm. 430x230x1015  
weight 32 Kg.
- HMI 1200 W/GS  
Version: mm. 430x230x1140  
weight 44.5 Kg.

(\* ) Option to be pre selected directly by users.



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Represented in one small room is a lighting system that has taken many years to develop.

"A special moment for me was the first day that Tim Lamb, Toto's lighting designer, along with Dave Hill, arrived here," said Patrick. "It's been very much my life for the last few months — financially, emotionally and labour-wise. It's been very much my baby. A lot of people have been involved but it was something that I really had to believe in to get going. But the first day I saw other people using it I was able to step back. Suddenly the thing wasn't mine anymore, it was much more in the general forum of lighting. That was a special moment because it meant that other people were getting the satisfaction that I had always believed was possible. They were here for five days working very long hours, as you normally would when programming, and then they flew to Brussels for their first show with 24 hours of production rehearsal beforehand. They spent about six hours putting in all the Vari\*Lite programmes that they had discussed and planned. That night they ran a full dress

rehearsal for the band with every cue in place. At the first show the next day, everybody commented on how good the lighting was. Obviously most of that is due to the LD himself and his imagination, but I think that they would admit that normally they wouldn't have been able to be anywhere close to that position on a first show.

"The next job was AC/DC which is particularly ambitious much more so than we imagined until we started to build it. It's a completely custom-built lighting system with these big moving pods stuffed full of Par cans. We're representing them with ACL Molefays as it gives exactly the same look. We've had cyc lights made up and there are VL4s all over the stage set as well as floor lighting, effects projectors and on-stage follow spots. The impression is obviously very close to the real thing. We are three days away from pulling out of here and we have most of the show programmed. I keep reminding the guys that

it's important to get a basis of the programming done, but it's not so important to do an accent with a certain channel that might change when we get to production rehearsals. What is important is that you know that a particular group of lights looks good, and that it works. You know what the dynamics of the music dictate. Normally when you're working out how to build a light show you listen to the music a lot and break the songs down on paper. It's not until you actually get behind a board and start pressing buttons in time to the music that you really get a feel for where the dynamics lie. This gives you all that information very directly and specifically.

"We're learning all the time. We're representing in one small room a lighting system that has taken years of lighting technology to develop. The capital cost of a system like AC/DC's is probably a million pounds and we're representing it with something that cost a fraction of that. So we obviously have to use our imagination to find lights that do the same job as other lights. I think we've probably got a way to go in doing very specific colour temperature and candle power, and foot candle output in relation to Par cans and Vari\*Lite. We have to be constantly searching for different bulbs and fixtures. At the moment I'm happy that it looks right but we don't want to stop there. There will always be problems just as there are in every lighting company trying to put a system together but there are opportunities as well. With every job we do, we learn 100% more than the first. I'm sure that one day we'll look back at this and think it was archaic, but right now we're pretty proud of it.

"There are many different ways to approach the future. If I take enough steps back from this and even from the tool that I use to design my shows, it's whether the concept of scale design will be a reality. Will people generally look to use something of this scale and this complication to programme and conceive their shows? If that happens then the sky's the limit, both in terms of



LD's are able to pre-programme most of the show in advance, prior to any rehearsals with the band.



business and in terms of what can be done. But if you take the thing to its obvious conclusion, everything that we use in real life will be represented here to scale, from moving lights which can be programmed to remote control colour changers rather than the hand scrolling ones that were made for us by LSD. I think we'll find very soon that the industry will constantly be demanding more of itself and will want things to be more specific, as will clients.

"If this takes off we will probably try and combine two studios in one facility as it cuts down the overheads. We've already had times where two people have wanted the studio at the same time. Real production rehearsals have to be in a specific time slot, it has to lead right into the first show, but with us this isn't the case. With AC/DC we could have done this a week earlier or a week later. For instance, we moved it forward a few days because we had Sinéad O'Connor in here. In fact, we like to have a period of a week to ten days between finishing here and real production rehearsals to solve simple problems.

"With AC/DC we re-rigged two of the pods at different angles and we realised that the ring of Aircraft lights around the main grid didn't focus when we had the pods in their high position. It was a simple solution to pick up the phone and say can you put all those lights on two feet hangers. That sort of problem at rehearsals would have been magnified to the extent that it would have become a disaster. We could have fixed it, but it would have meant flying in equipment from California and we would have lost a day's rehearsal as a result. We would probably have also had to de-rig the lighting system because you can't re-hang lighting bars 40ft in the air. We probably wouldn't have made the change until the first show so we would have had ten days of production rehearsals without the system we should have been looking at. In this case those two or three things were fixed simply by a telephone call.

"One of the advantages of the studio is the technical aspect. We bring the crew chiefs down here and they work out things like their cable runs. It's all stuff that in theory can be done on paper but never is because it's much easier to visualise ideas.

"There's also a more conceptual level where you say first of all does a thing look good? Is there enough frontline? Is there enough backline? All the questions you ask yourself the very first day you see the rig up. Then there's the main part of it which is actually building a light show which is really good fun. Any lighting designer will tell you that in the right circumstances building a light show is the part of it that everyone loves the most. It's a very creative and intuitive process. There's also the idea that you can bring the artiste here and his manager. All of AC/DC's backline crew came here. Backline crews are notorious, whether it's justified or not, for concentrating very much on what their part of the job is. It's an important role and one that involves a limited amount of equipment working perfectly every night. So often those guys lose the picture or at least never have an opportunity to see what the big picture is. By the time we had those guys down here, and we'd run a couple of songs for them they were really on our side. They understand what it is we're trying to do. If we get to rehearsals and we have some problems I'm sure they'll be 100% more co-operative and

interested in getting it right, because they've seen what we're trying to achieve. There's also a practical level as they can see where their equipment went in relation to the stage set. They told us a couple of things they wanted changing and it's all easy to do at this point.

"An artiste will be able to spend time seeing if he likes what you're presenting him with. Bryan Ferry is coming down as we've spent quite a lot of time in the past talking about this concept. He's probably going to work next year so we're going to show him some ideas, particularly some projection work. When we come to programme his show to scale then we'll bring him down here and spend some time on it, as he's very concerned about visuals. Production Arts from New York have given us some carousel projectors which in terms of scale will be about the same as their Pani 4Ks or Pani 6Ks. We can work out all the projection stuff using 35mm slides before we go to the expense of having big 8 x 8 format slides made up. We can make the decision on which we want three days before production rehearsals because all the programming will have been done.

"David Mallett is going to be shooting a live video of AC/DC in Boston, USA, and he's coming down at some point to see exactly what the song looks like, and what lighting effects we're using. He'll be able to work out where he wants his cameras and other equipment well in advance. Costume people will also find it useful. Allen Branton told me that once he did three weeks of production rehearsals with Diana Ross and a third of that time was taken up simply looking at the costumes under different lighting. We have these little mannequins which we dress in the clothes of the band and you get a real impression of what works technically and what doesn't costume-wise. AC/DC's choreographer said that he'd love to stage shows here as you can move the models around so easily. If you move three backing singers in production rehearsals, you're talking about re-focusing all the lighting on them, moving the sound, and moving the monitors. All that can be done ahead of time here."

After AC/DC Patrick Woodroffe's 4:1 Studio will accommodate Sinéad O'Connor followed by Paul Weller's show currently being designed by Shawn Richardson and then Woodroffe is back in designing the massive

'Rock in Rio' concert. At this festival in Brazil, there will be about 20 different lighting designers with the various acts on the bill and they will all have to use Patrick's lighting system. He is aiming to get as many of the lighting designers as possible into his studio beforehand to familiarise themselves with his design. Roy Bennet will be in town soon with INXS and he'll be spending a day at 4:1 as they are one of the headlining acts in Rio. When he arrives in Rio, he'll probably only have a couple of hours in the middle of the night to organise a show which will be staged in a 180,000 seater arena and broadcast live around the world. Hopefully, Bennet will be armed with his disc from the studio with a lot on it, or, if not, at least he'll have seen the lighting system and set and will be able to tell Patrick of any changes he wants in advance. Patrick is hoping to design a system that can be altered throughout the course of the ten day festival and he aims to work out ahead of time the different permutations.

Commitments like 'Rock in Rio' mean that Woodroffe will not be touring with AC/DC. "Charlie Wilson will be running the board and Guy Forrester the Vari\*Lite's," he explained. "They've been working with me to build this, along with Steve Nolan who has been responsible for a lot of the technical side of putting AC/DC together. He's liaised with the set companies, the lighting companies and the production people. I have to be in Brazil for meetings during the first three days of technical set up. In a normal situation that would have concerned me because I would have wanted to be there from the beginning to see how it looked. But I know how it's going to look so any problems that do come up I think will be much more technical rather than conceptual, and they are problems that can happily be dealt with by Steve and the lighting company. I plan to be with the show one week. I don't really think there's going to be a lot of reason to be there longer because 60/70% of the work will be done. My role during that week will be much wider than specifically deciding whether it should be red or blue on a certain tune because we've done that collectively. It will be a very good test of the studio to see if we can put together this quite big, complicated show in what is really a fairly short period of time. If we can pull that off then I think that is a big indictment for the Studio."



Pictured is Patrick Woodroffe (standing at the rear), and clockwise Charlie Wilson (lighting director for AC/DC) Steve Nolan, and Guy Forrester (Vari\*Lite operator from AC/DC).



# Midnight Design and Midnight Sales



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## FOUR TO ONE : scale design

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# 4:1

Patrick Woodroffe & Steve Nolan

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