

History of **DISCO** **LIGHTING**

by Kevin Hopcroft

The first effects lighting appeared long before discos started. Before the war, it was discovered that if you shine a light on a ball covered with mirrors, you get one beam off every mirror when it rotates (see Photo 1).

My earliest recollection of a mirror ball was in the 1942 film Casablanca, with Humphrey Bogart. So, when discos came along in the late sixties, the mirror ball was the first effect to be adopted. Red bulbs provided general lighting, and this gave a warm glow to the room. There would also be a spotlight with a spinning wheel in front of it. A hole in the wheel, provided a strobe effect. Soon after that, an 'Ultra Violet' photographic lamp, which made white things glow in the dark, was quickly transferred into the discos. Then some bright spark found that you could see ladies underwear glowing straight through their clothes. Unfortunately, it also made everybody's teeth glow green as well!

The first real dedicated disco lights were invented in about 1968 when someone decided to control lighting using electronics (Transistors and Thyristors in those days, no silicon chips) – the idea was to flash lamps to different frequencies, originally three channels. Basically, one lamp would flash in time with the bass frequency, one in time with the middle and one in time with the treble. For the first time, sound-to-light had arrived.

Apart from a brief period of popularity for the 'oil wheel', from 1968 to about 1973, sound-to-light was king! It soon progressed from 3-channel to 4-channel, using bass,

lower middle, upper middle and treble. However, sound-to-light had a basic problem; whilst the lights were following the music and reacting to different frequencies, the human eye had great difficulty in relating the visual effect to the music. It was just too complex.

Photo 1. The mirror ball (Stock Code DU75S).

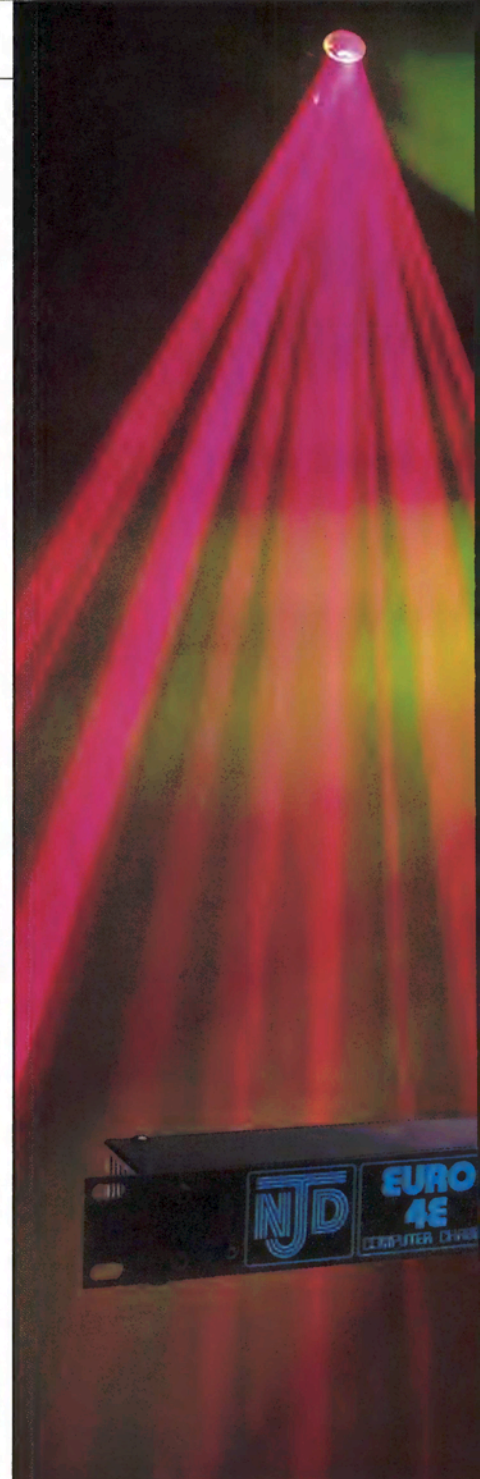




Photo 2.
The NJD EURO 4E Sound
Chaser (Stock Code DW62S).

Photo 4. The NJD EURO 6S 6-channel switch panel
(Stock Code DW59P).

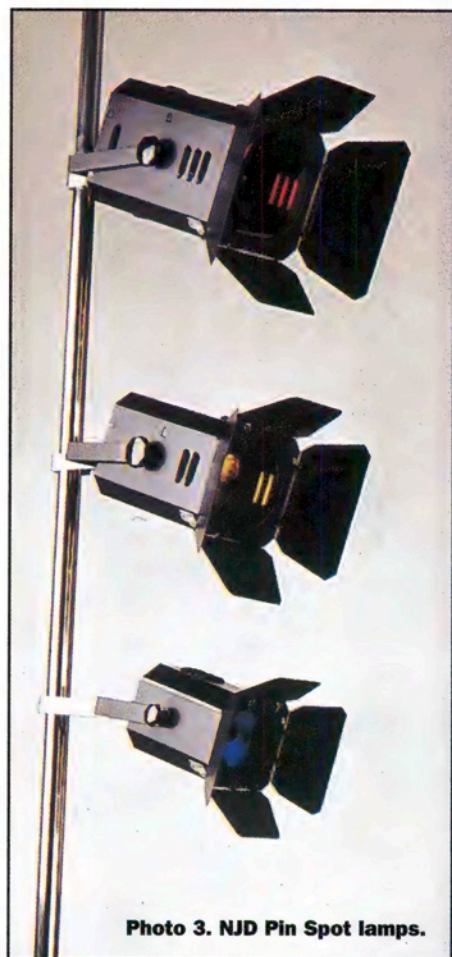
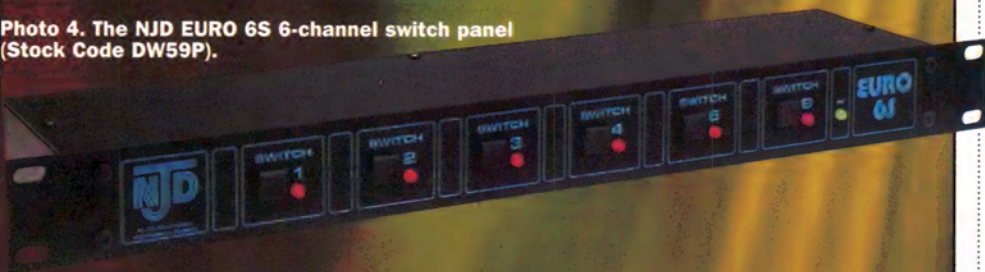


Photo 3. NJD Pin Spot lamps.

Get on Down . . .

In 1973, a new idea was born. Instead of flashing each channel to a different frequency, the new way was to make the lights only react to the bass beat lighting each channel in turn (e.g., first bass beat = light channel one, next bass beat = light channel two, next bass beat = light channel three, next bass beat = light channel four, next bass beat = back to channel one, etc.) This gave an easy and dramatic sound-activated effect that the eye could easily follow, and the Sound Sequencer or Sound Chaser was born. This is still the most popular way of controlling ordinary spot lamps for effects lighting and can be found in the Maplin Catalogue (e.g., EURO 4E - see Photo 2).

The next big change occurred in about 1978, with the arrival of the 'Smoke Machine'. The Smoke Machine brought a whole new dimension to lighting and for the first time, produced 3D effects. Instead of just seeing the lamps flashing, provided you used the right kind of lamp, you could see the whole beam passing through the air. This heralded the reign of the 'PIN SPOT' (PAR36), with a narrow concentrated beam (Stock Code BE28F), as in Photo 3. Ordinary spot lamps (PAR38, R95, etc.) produced only a soft flood and could not give the effect needed in smoke, but the PAR36 Pin Spot was perfect (It's also the right lamp for use with mirror balls). Sound Chasers were used to create stunning effects, sequencing and patterning Pin Spots in smoke.

Photo 6. NJD Microbeam 100 'Intelligent Scanner' unit (Stock Code PD97F).



Jock Makes Light Work

Until now, every effort had been made to make the lighting interpret the sound, but things were afoot to change that! The Pin Spot was now incorporated in motorised effects, these effects either spun the lamps – the Helicopter, or swept them from side-to-side – the Scanner. The job of turning these stunning effects on at the right moment became the job of the DJ, along with playing the records, and in bigger night clubs, they even employed a 'Light Jockey' (new job!). With this came the requirement for more technology; there had to be ways of switching these effects on and off at the right moment whenever the DJ required, without all the clicks and bangs through the sound system that you would get with ordinary light switches, and so the Switch Panel joined the market (See EURO 6S, Photo 4).

The Pin Spot ruled supreme until the early eighties when a new invention hit the



Photo 5. The NJD Blitzer Flower Effect generator (Stock Code DW56L).



market, the Flower Effect. The principle of this was to produce multiple beams, created from a mirror ball, and force them in one direction through a lens. The beams could be individually coloured and made to spin in time with the music. These Flower effects were very expensive at first and only the largest clubs could afford them. These days, technology has progressed so far that they are now small and cheap enough to be afforded by the mobile DJ and are even brighter and more exciting than the originals (See BLITZER, Photo 5).

As you can probably see, Disco Lighting has been a steady progression of modern technology combined with earlier ideas. Incorporated are three earlier principles, Multiple beams of the mirror ball, 3D 'in air' beam projection and sound activation.

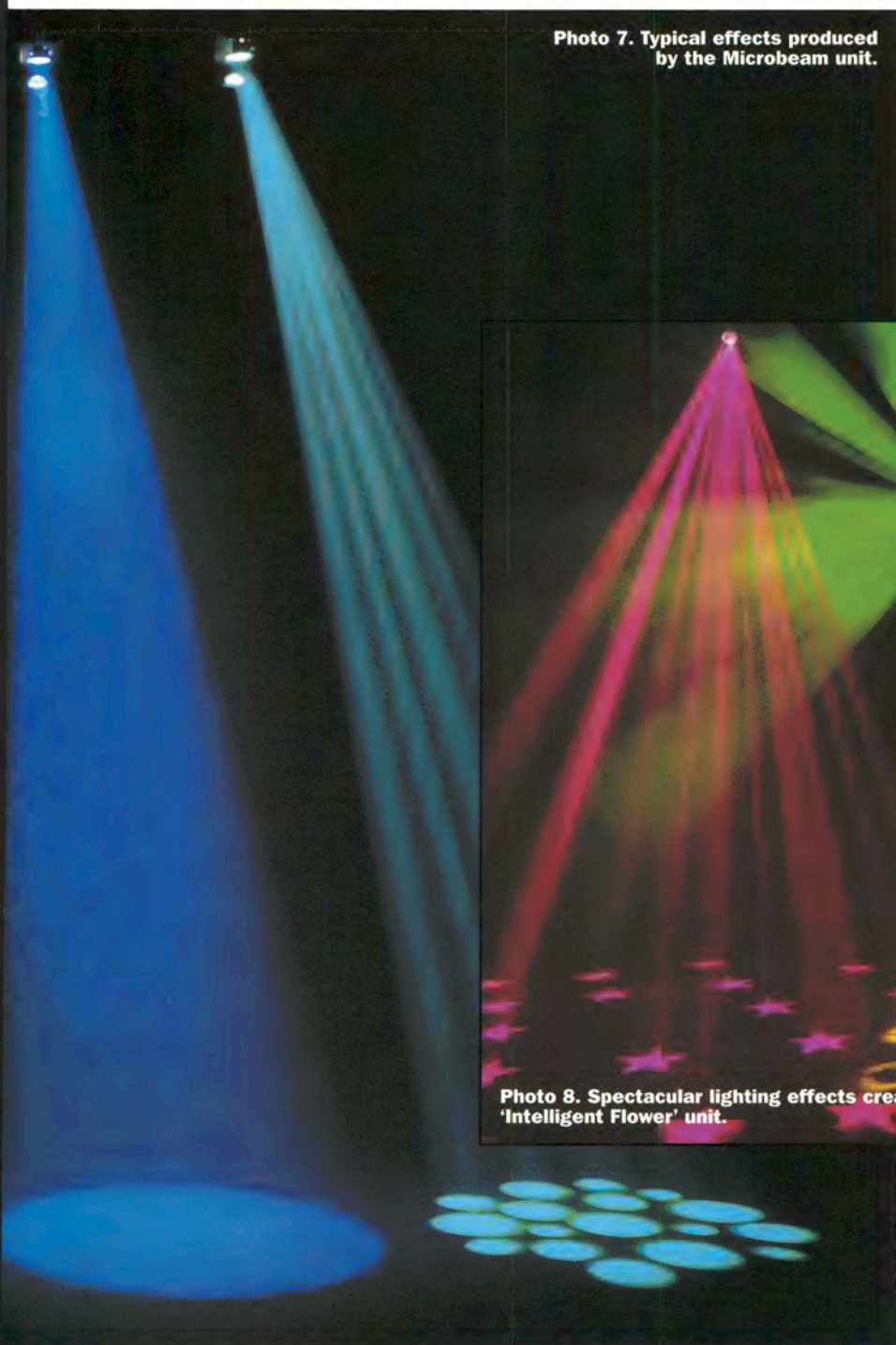


Photo 7. Typical effects produced by the Microbeam unit.

contains its own microprocessor which can decode the DMX and follow the DJ's instructions. This means that only one wire needs to be sent from the DMX controller to the first effect – all subsequent effects are just linked together from the first in a 'Daisy Chain'. The effect, being 'semi-intelligent', knows whether the information it is receiving is for it or is to be passed on to the next effect in the chain, clever eh!

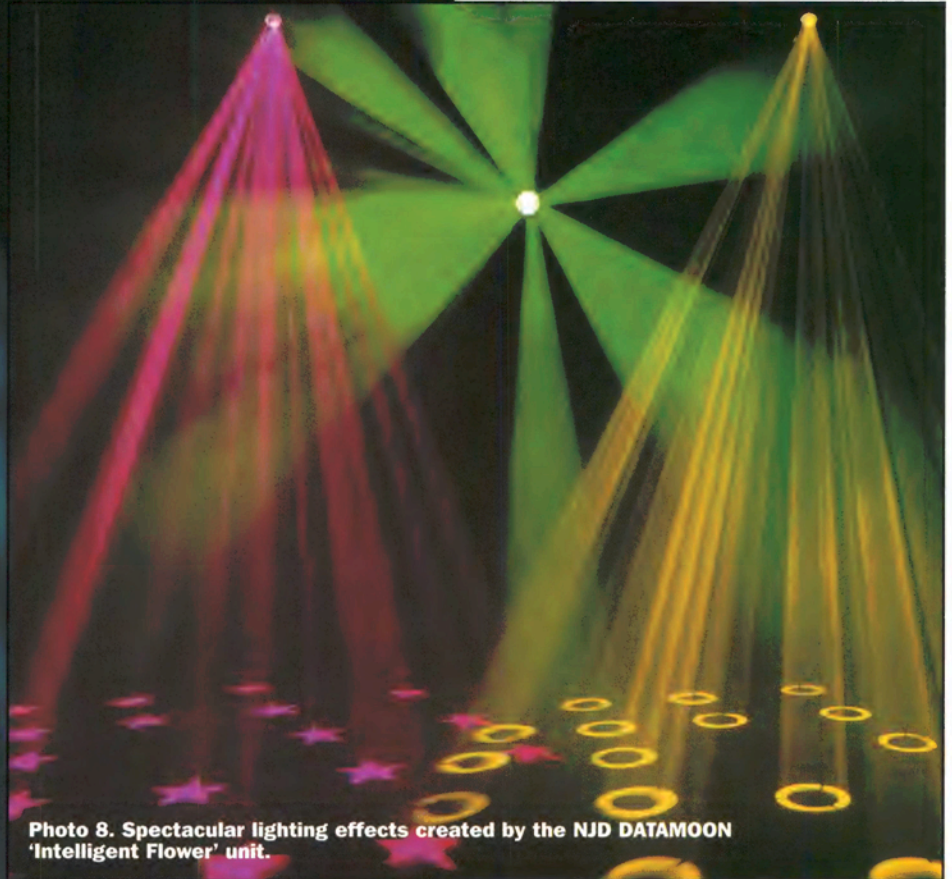


Photo 8. Spectacular lighting effects created by the NJD DATAMOON 'Intelligent Flower' unit.

... and Boogie!

I suppose the final step in the story was inevitable. In 1994, NJD Electronics of Nottingham, invented the Intelligent Flower. Now instead of projecting one beam, the effect would project 20 beams of a colour and shape of the DJ's choice and move them in time with music. Voted 'The Best Lighting Effect in the World' in 1995, this product is possibly the most stunning disco effect ever produced (see DATAMOON, Photo 8).

Intelligent lighting is now finding its way into 'Live Bands' as the old PAR Cans are replaced with intelligent spotlights, like the CHROMA HX, and this is only the beginning! This is a constantly changing and exciting field as entertainers continuously search for the latest and most stunning effects with which to entertain and amaze people, and I am sure that there are many more new effects just sitting on the drawing board (sorry, CAD screen) as you read this article.

Ask for a demonstration or advice at your nearest Maplin or Mondo store. **ELECTRONICS**

... To the Dance Floor

The next step was the most dramatic and would not have been possible without our friend the Silicon Chip! Until now, the DJ's control was limited to switching effects on and off or choosing the pattern for the Sound Chaser to flash the lamps. At last, the DJ could be given a free reign to let his imagination run riot. In 1990, Intelligent Lighting hit the market.

Intelligent Lighting worked on a new principle: Send a beam through a colour filter and a shape (called a 'GOBO') then project it onto a mirror which was fixed to two motors (one which moved the mirror left and right (X) and one which moved the mirror up and down (Y)) which could be controlled by the DJ. This allowed the DJ to choose the colour and shape of the beam

and move the floor projection to anywhere in the room. Originally named the Intelligent Scanner, its name has gradually changed to that of its unintelligent predecessor, 'the Scanner', just to confuse you! (Be careful when buying!) This revolutionary invention was incredibly expensive at first but like all things, has been simplified and miniaturised and is now easily affordable (see MICROBEAM 100, Photo 6, and its effects – Photo 7).

With intelligence came the need to control these new effects, and a whole new system was adopted called DMX. This saved dozens of connecting wires to the lighting effects. Instead of sending a control voltage to the effect, the new system sends digital signals around the circuit, called DMX. Each effect is plugged directly into the mains and