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The Light Scan idea, although insufficiently flexible to permit much variation on the basic theme, provided an introduction to the problems of control and a clear glimpse of the effects that should be available once motorisation could be fitted to more lamps in the rig. The problem now was to find more financing and therefore, a customer.

In the meantime, Paton continued to work as a free-lance lighting and special effects designer, and rented the one existing Light Scan system for a Who Tour, to London Weekend Television, as well as to several other small shows and concerts. "I earned a few bob and some exposure," says Paton, who became aware of the problems and benefits of such a system through its use. The problems, according to Paton, were caused from "theatre technicians who are fairly brutal. They think lights are made to be thrown in the back of a truck. This system was more delicate and needed tender care. It often needed to be rehung and readjusted, often through simple carelessness."

On the other hand, designers appreciated the effects of the Light Scan system, which allowed lights to slowly creep up with perfect timing. They were also virtually silent when in motion. "Slow movement worked very well with these

lights," says Paton, "while Vari\*Lite concentrates on fast movement. I like the magic created through a slow cross-fade."

Although interested in the concept of moving lights, theatre, television and concert managements were not ready to finance an R & D project. Surprisingly, Concord, the shop and display fittings manufacturer, was both interested and ready to provide the necessary money. In 1982, working with Michael Frye and the Concord production engineers, Charlie Paton engineered reliable pan and tilt yokes for track mounting PAR fittings taking power and data from the track itself. "This was an intelligent moving light system," Paton recalls, "designed for architectural lighting, hotel lobbies, and atriums. But at £300 (US \$510) per unit, it was too expensive and the project was scrapped. They wanted a unit £100 (US \$170), but it was too expensive to tool it. I recognize now it was too early."

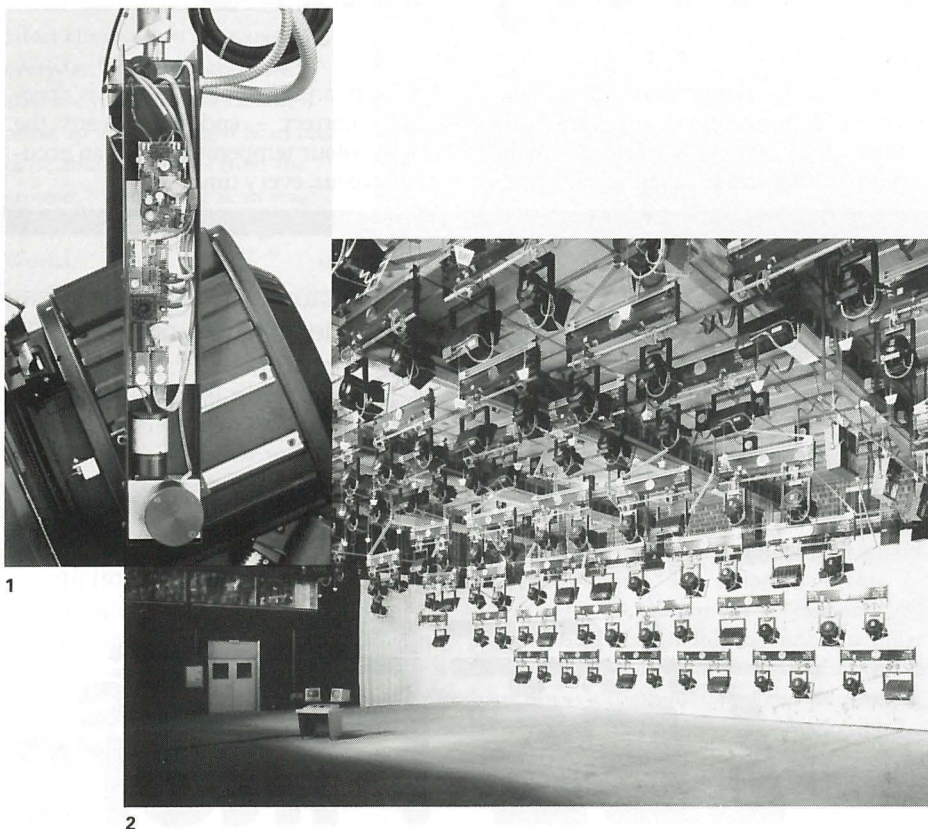
Although this project was never launched, the enterprise provided Paton with the know-how to see his way to the next step, a modular system designed for all types of theatre, television, and concert applications using coded data and on-board memory as has now become normal practice. So Paton was prepared when lighting designer David Hersey asked

Light Works to provide motor drives for lights and TV cameras for *Starlight Express*, which opened in the West End in 1984.

"Hersey knew about Light Scan," says Paton, "and put together several rotating rows of light curtains, with motorised cameras, lekos, PARcans, and colour scrollers." In all, 60 drives were supplied, together with Apple IIE computers, for which Kevin Neville designed the software.

The next step for Paton was to refine the design of this system for cost effective quantity production and off-the-shelf sales. Paton realized that he needed a faster control system than the Apple IIE, and moved to an IBM PC adapted with colour display and a dedicated keyboard. "At this point I needed sophisticated engineering development," says Paton, "and the last 10% of the project took longer than the first 90% to develop." Paton then received £20,000 (US \$34,000) from the Department of Industry for development of the MRL system, which made its debut at the 1987 ABTT Trade Show.

The MRL — Motorised Remote Lighting — system designed by Light Works was a modular system suited to any type of lantern and any type of performance. At the drive end, a single co-ordinated PCB (printed circuit board) and motor provided near silent rotation to an



Charlie Paton (3) developed the PALS system through his company, Light Works. After its acquisition by Strand, the first major installation was for a TV studio in Hannover, West Germany (2). The system can be adapted to anything that sits in a yoke. (1, inside a PALS yoke)

Charlie Paton (3) a inventé le système PALS avec l'aide de sa compagnie, Light Works. Après l'acquisition du système par la compagnie Strand, la première grand installation fut pour un studio de télévision en Allemagne de l'Ouest (2). Et ceci est adaptable à tous les projecteurs utilisés avec une porteuse. (1, la porteuse PALS)

Charlie Paton (3) entwickelte das PALS System mit seiner Gesellschaft Light Works. Nachdem Strand es erworben hatte, wurde die erste grössere Anlage in einem Fernsehstudio in Hannover, Deutschland, installiert. (2) Das System kann allen Beleuchtungsbedingungen angepasst werden, solange ein Rahmen vorhanden ist. (1, das Innere eines PALS — Rahmen)