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Classic Gear: The EDI LS-8 lighting console

Rob Halliday takes a nostalgic but instructive look back at the tools that have shaped the industry . . .

Sometimes its place and time that make a product a classic: its arrival changes everything. The LS-8 computerised lighting console, the first memory console used on Broadway, is such a product.

Until 1975, every Broadway show used piano boards, groups of directly-operated resistance dimmers operated by teams of electricians. While the rest of the world moved to multiple-preset then memory control of remote dimmers, Broadway stayed stuck.

That year A Chorus Line opened off-Broadway at New York's Public Theatre, the show run from a preset console. According to lighting designer Tharon Musser, the Shuberts, who were to transfer it to Broadway, said the show could have anything it wanted. So she asked for a memory lighting console.

The first choice, from Strand, wasn't ready. But an alternative was, or nearly was: the LS-8, designed by Gordon Pearlman while teaching lighting at the University of North Carolina, and then sold to Electronics Diversified. EDI hadn't actually built one when the Chorus Line order came in, so Pearlman and a prototype were put on a plane to New York . . .

Based on a Digital Equipment Company (DEC) PDP/8 mini-computer, the LS-8 had 16K of 12-bit core memory for program and data storage. Nicknamed Sam by Musser and her team, it had to have its 32-instruction boot sequence hand-entered then its operating program loaded from paper tape - a 20-minute process. But the core memory was non-volatile: turn it off, turn it on and everything would still be there. Usually. Though on one fateful occasion Musser's team did end up running the show by hand on the manual faders installed as backup!

The control surface had a 96-button array for selecting channels (by necessity A Chorus Line also made the first use of remotely controlled electronic dimmers on Broadway), a centre-sprung slider for raising or lowering channel levels, a VDU for showing channel level information, and a split-dipless crossfader; A Chorus Line's lighting cues may have been stored in memory, but they were played back by hand.

Three months later, the PDP/8 was replaced by a PDP/8a that could self-start and had an 8" floppy drive for cue backup. Ironically, the disk software meant the desk no longer had room for all of the cues, with a re-load taking place during the long Paul's Monologue scene - fortunately lit with just a followspot as the output sample-and-hold amps weren't refreshed during the transfer . . .

Sam ran Musser's astoundingly beautiful design for A Chorus Line for all but the last three years of its record-breaking 15-year run. Not the first computerised lighting control, but the first on Broadway. The revolution it started wasn't immediate - computer controls were expensive, rental companies had big stocks of piano boards - but it did set it in motion. Within five years the piano board was gone.

And the LS-8? EDI lost interest after a patent dispute (how familiar this sounds!), over the use of VDUs in lighting controls. Sam retired to the Computer Museum in Boston. Now in storage, it deserves to be on show. Perhaps in the foyer of A Chorus Line, newly revived on Broadway with computer control and moving lights . . .

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