digital edition

Lighting&Sound international

November 2008

entertainment, presentation, communication

www.lsionline.co.uk

Cirque in Japan

Cirque du Soleil takes up residence in Tokyo with *ZED*

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Classic Gear: The Cart Machine

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

Thirty years ago the NAB Cartridge machine was the great hope of theatre sound effect playback, giving precisely cued spot effects without the give-away 'ka-chunk' of the Revox. Now, forgotten. It's tough being an analogue sound product in a digital age.

Introduced at the 1959 National Association of Broadcasters (NAB) Convention in America, cart machines - the first called Fidelipac cartridges - were originally developed for radio use, a way of making a DJ's life easier when it came to playing jingles, ads and station idents. A cart was a hand-sized plastic cartridge containing a single reel and an endless loop of quarter-inch magnetic tape, pulled from the centre of the reel, across an opening at the cart's end, and back onto the outside of the reel. Various tape lengths let you pick the cart type most closely matching the length of your jingle. Originally mono running at 7.5ips, later carts had two tracks for stereo and all had an additional track on which special control signals were recorded. Ultimately, three control tones were available - primary (1kHz), causing the cart player to stop; secondary (150Hz), telling it to fast forward to the next stop tone, and tertiary (8kHz), an auxiliary tone that some machines used to trigger another action, such as firing another cart machine. The advantages to the DJ: pick a jingle by grabbing the right cart and sticking it in the cart machine, no need to forward or re-wind tape; play the jingle by just hitting play, no need to line up a cue point; after the jingle the cart re-sets itself, ready to go again, no human intervention required.

The appeal to theatre sound designers is obvious. From the mid-1970s on, cart machines began to appear in theatres, the sound operator having racks of carts stacked up, swapping between them as required, hitting the green 'go' button for the effect and, hopefully, having time for the cart to re-cue itself before having to remove it and replace it with the next effect - though sometimes the stop tone was erased to give continuously running loops of sound. They were near silent in operation (at least, until you knocked over a pile of carts . . .), with reasonable sound quality as long as some kind of noise reduction, Dolby or dbx, was used.

The operational advantages outweighed the many practical disadvantages. Recording to a cart required a record-enabled cart

machine, and erasing carts quickly required yet another machine, the bulk cart eraser. Playback required regular head cleaning and alignment to ensure the best playback quality. And carts themselves were relatively expensive and, with their convoluted tape path and special lubricated tape, not terribly long-lived - long-running shows could outlast their sound effects carts!

Cart machines were made by many manufacturers, those from Nottingham-based family-owned Sonifex most commonly seen in the UK. But digital technology, whether recordable media such as Minidisks (or even floppy disks in one Sonifex cart-replacement product!) or direct playback from samplers or then PCs did for cart machines very quickly, though their 'interface' sometimes lingers in the on-screen controls for jingle playback systems.

Flash back to the old days of Cart Machines in the environment for which they were created:

>>>www.bbc.co.uk/radio1/established1967/feature/cartplayer.shtml