

Lighting & Sound INTERNATIONAL

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Witches

It's been a while since Cameron Mackintosh had a big new show in London. Four years, almost to the day, since the original Martin Guerre opened; six since Oliver! and more than 10 since Miss Saigon opened before setting off on a trail around the world. Rob Halliday reviews the latest from the Mackintosh stable

It's not that Mackintosh and his company haven't been busy, with new tours and smaller scale shows. And, of course, a producer that still has three shows running in London is still hugely successful, by any standards.

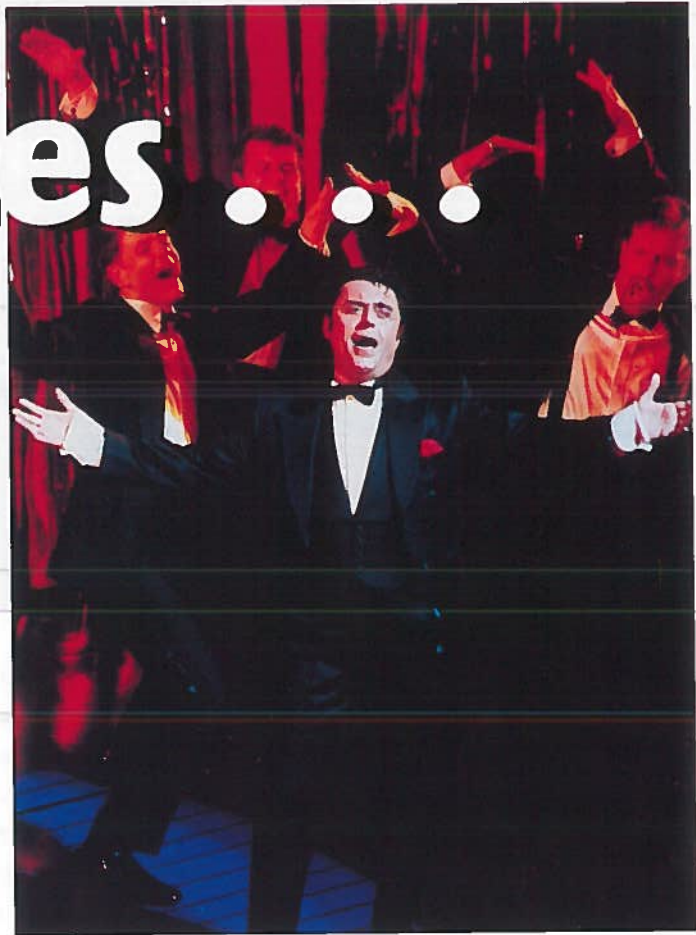
Nonetheless, with the long-running shows starting to close - Saigon ending its 10-year run in London last year, Cats in New York finally running out of lives this autumn after 18 years - the time had clearly come for something new.

Hence *The Witches of Eastwick*, slotting nicely into the theatre vacated by *Miss Saigon* (and co-incidentally, the one that gave the young Cameron Mackintosh his first job, as a stage hand), the Theatre Royal Drury Lane. The source material, a John Updike novel, is more familiar to many as the film starring Jack Nicholson, and it was that version that formed the musical by the relatively new writing team of lyricist John Dempsey and composer Dana Rowe. Three years ago, these two moved to New York and gave themselves six months to have a musical produced. That show was *The Fix*, which Mackintosh produced at the Donmar Warehouse in London and then in Washington DC; those involved with the show speak highly of it, but somehow it never made it to a bigger theatre or longer run. But it was a great calling card, leading to *Witches* and a further, still-secret project with Disney.

With the show written, Mackintosh put in place an experienced team to bring it to life. Director Eric Schaeffer has made quite a reputation for himself with his musical productions at his own Signature Theatre in Arlington. Legendary Broadway choreographer Bob Avian teamed up with Stephen Mear, an up-and-coming English choreographer who has hit the headlines with his *Singin' in the Rain* at Leeds and now at the National Theatre. Designer Bob Crowley, until recently most familiar for his work at the National Theatre and Royal Shakespeare Company, is quickly becoming the leading exponent of musical theatre design, winning this year's Tony award for his sets for Disney's *Aida* in New York. And lighting designer Howard Harrison and sound designer Andrew Bruce are Mackintosh regulars. With Cameron Mackintosh's technical manager Nic Harris overseeing the practicalities of getting the show on, and a great cast led by Ian McShane, Lucy Amaz, Maria Friedman and Joanna Riding, *The Witches of Eastwick* was set for a July 18th opening.

DESIGN

Witches isn't the style of show that people necessarily expect from the Cameron Mackintosh stable: it is a 'musical comedy', a good, old-fashioned style of show with dialogue leading into songs leading into



dance numbers and a healthy dose of laughter thrown in for good measure. It is not big, it is not epic, nor is it naturalistic. Bob Crowley's design reflects all of this, while also attempting to contain much of the action downstage in what is one of London's largest stages. The stage is divided into a 'blue box' main playing area occupying roughly half of the stage depth, with a blue floor, blue legs and an upstage blue wall. Other elements are brought into this space as needed to define locations: the hydraulic hills of Eastwick pivot down from the wings, doors and fences track onto the stage from the wings. And for large pieces, the upstage wall can fly out to allow three large (two of them around the five tonne mark) trucks to run downstage into position.



THEATRE

Construction of the scenery was entrusted to Delstar, Kimpton Walker and Terry Murphy Scenery, with rigging by Unusual and installation led by Glyn Cook, production carpenters Micky Murray, Simon Holley, Charles Howell, Tim Lloyd and Alan Jones and resident technical stage manager Graeme Taylor. To bring the scenery to life, Nic Harris opted for an automated approach and so turned to Stage Technologies, who provided 11 BigTow winches driving skates in seven cross-stage tracks, plus up-and-down stage motors for the large trucks.

Nothing inherently complex, but any show presents new challenges: Stage Technologies' Mike Sharp notes in particular the refinement required on the upstage motors, which had to deal with running five-tonne trucks down a 1:12 rake (the same rake as used for *Saigon*) and then back up again. A complication here was Westminster Council's insistence that the trucks had to have secondary safety mechanisms, which Delstar accomplished by installing arrester cables. Stage Technologies also provided BigTows to serve as counterweight assist motors for some flown scenic pieces; all of these winches are controlled by an Acrobat console run by Alex Hitchcock or his deputies, Darren Williamson and Richard Kent.

Stage Technologies' Paul Hollingsbury also provided a number of custom-programmable logic control (PLC) systems to drive pneumatic effects in the diner and both pyrotechnic control and movement in the collapsing church sequence - this last sequence





linked through an Avenger show control box to the sound department so that pyros, collapse and sound effects run in perfect unison.

Stage Technologies were also responsible for the moment of theatrical magic at the end of act one, when the three Witches fly up from Darryl Van Horne's house . . . then out over the audience! Designed by Mike Barnett, the system is a variant of the one Stage Technologies developed for the central show in the Dome. If you're going to see the show and don't want to spoil the magic by knowing how it works, look away now! An overhead truss contains one Big Tow motor per witch. A front of house truss, neatly blended into auditorium's architecture, contains a further three lifting BigTows, each mounted on a track and capable of being driven across stage by a further three motors. Custom software allowed Hitchcock to drag out flight paths for the Witches on screen, run a simulator to check that the three flightpaths wouldn't interfere with each other, then run the cue sequence from a standard Acrobat controller - though in practice the show uses a separate Acrobat to control the flying sequence, this located in a front-of-house box to allow the operator to see the flight.

The flying sequence became a classic case of something that appeared to be a problem during technical rehearsals actually becoming a virtue in front of an audience. The wires from the FOH motors are fed up to the onstage truss and then loop down onto the stage, so that when they are dropped in (cunningly disguised within a collection of flambeaux lights that fly in at the same time) all of the wires descend vertically. The witches are then lifted and, at a certain height, the FOH wires are released and taken up to tension. There is, inevitably, a pause while this happens, about which everyone worried. In fact what seems to happen is that the audience are just starting to shrug and mutter 'so what' to each other . . . when the Witches head straight out towards them, one making a very low pass over the stalls as they go. The applause is spontaneous and genuine every night. As is the feeling of relief backstage as the effect passes without a hitch, though the back-up procedures are well thought-out and rehearsed.

LIGHTING

Howard Harrison's design for *The Witches of Eastwick* is perhaps the very model of a modern lighting rig. It is largely automated, with 111 moving lights, but rather than just using lots of lights from one manufacturer, it features a huge range of different products, each chosen for a particular set of strengths. The result is that there are virtually no conventional lanterns overhead (there were some, they've all been cut) yet almost anything is achievable.

"What does all of this technology create? Interestingly, a show that doesn't look like a 'moving light' show; Harrison and assistant, Oliver Fenwick, recall that one of the early briefs for the show mentioned that it had to feel like an old-fashioned musical comedy, of the kind Joe Davis might have designed in the sixties."

The bulk of the rig is from Vari-Lite, with four overhead bars containing a mixture of VL6Bs and VL5s which provide all of the hard-edged and soft-edged washes in the show. The VL5s are fitted with the 1200W 110V bulbs to give extra punch, these running from Avolites dimmer racks. The zoom lens in the VL6s allows them to provide a huge range of gobo looks and specials and their ability to snap instantaneously from colour to colour is also a Harrison favourite. VL5s and VL6s are fitted with City Theatrical tophats to minimise the flare on Crowley's blue borders. The overhead rig also includes three lines of five DHA Digital Light Curtains, the upstage row pitching light

curtains, three VL7Bs (their shuttering allowing them to provide the backlight through the tracking doors and controlled light to other scenic elements), four DHA Digital Beamlights (giving tight, intense specials) and six Strand Pirouette PCs whose widely variable, bright beam makes them very versatile tools. A FOH truss contains a further six Pirouettes and four VL6Bs, and there is then a VL7B on the lower circle front that provides shapeable light into scenery, as well as a selection of moons. In the high slip positions above the upper circle boxes on either side are short bars containing six City Theatrical AutoYokes, while the pros booms contain three VL5Bs per side and there are three VL6Bs per side on ladders providing a low cross-light.

The automated lighting rig is completed by nine High End Technobeam moving mirror units, three on the lower circle front and three per side mounted to the side walls of the theatre between the boxes. In the original design conception these had one mission only: they are linked to a Wybron Autopilot system and therefore follow the Witches as they fly around the auditorium, since their flightpath takes them out of the line of the followspots. Though the Autopilot set-up was complex, particularly when the witches' flight went ever higher and some of the Autopilot receivers had to be moved up to the roof, the show's lighting manager Kevin Burgess eventually mastered the process and the system now works very well.

A collection of conventional equipment fills in the gaps left by the automated rig, these 'steam' lights mainly located on the side-lighting ladders, with front-of-house lanterns on the front of every circle and in the gallery slip positions. Profiles are all ETC Source Fours, many fitted with Rainbow colour scrollers, and there are also 1k, 2k and 5k fresnels, Par cans (again fitted with Rainbow scrollers), Cadenza EP effects projectors with VSFX cloud disks, and a variety of strobes including Bowns, Dataflash, Diversitronics, Source Four strobes and the spectacular Broncolour profile strobes bought many years ago for *Oliver!* Four followspots complete the rig: Robert Juliat Aramis 2.5ks, all located centrally at the back of the gallery - this is a musical comedy, after all!

The conventional lights were supplied by White Light, with the non-VL moving lights from The Moving Light Company and the Vari* Lites from VLPS London; the installation team was led by production electrician Alistair Grant. Jeffries also carried out a comprehensive smoke-and-ducting installation in the roof above the auditorium, this using Smoke Factory Captain K, Data and Spaceball machines to fill the upper levels of the auditorium and the stage with smoke during the flying sequence.

Control for the rig is by several generations of Strand Lighting equipment. The conventional rig uses the theatre's own installation of STM and Permuss dimmers, with these and the moving lights run from a Strand 500 control system. This system was specified because we wanted to be able to have two people programme the show, one on moving lights and one on conventionals, for speed. But we then wanted the system to be able to come down to one operator for show running: other shows have done this, but usually by keeping two separate desks and linking them together through another computer.

The solution adopted feels much cleaner. The whole show is stored and run on one Strand 510i rack-mount controller. A second 510i provides a tracking back-up. Connected to these are two consoles, one for the conventional programmer (a 530) and one for the moving light programmer (a 520i). The system was then partitioned so that the 530 only had control of the conventionals, while the 520i only had control of the moving lights. The appearance was of two desks - except that there was only one cuelist being created and edited, only one set of timings being altered, only one showfile to be saved and backed up and, if need be, each operator could run the other's cues.

In addition, one Ethernet cable took data to a network node on the lighting designer's production desk, providing him with a cuelist and a display of what every channel in the show was doing. And if the worst had happened, it wouldn't have mattered; all of the data was safely in the 510s.

For show-running during previews, partitioning was simply switched off and one person could run the show, ensuring that all of the bump cues bumped together - but with the second console still present the other programmer could fix positions or make other changes to the show. And post-opening, the system has been re-configured so that the 530 runs the show with a 510 as back-up. In all of these configurations, seven streams of DMX are extracted through two SN103 nodes and then distributed around the building using conventional DMX cable. The system has worked very well: early worries about speed have proved unfounded, and the set-up has never really been found wanting - though of course the inevitable pile of suggestions for improvements have gone back to Strand for their consideration!

Why is the 530 the desk that's staying? Because it has more submasters, all of which have been filled up as more and more things have fallen under the control of the desk. Many of these have been made by Howard Eaton Lighting Ltd (HELL): a stunning 7000-fibre starcloth that can fade between an animated version of the show's logo (which uses three custom indexing lightsources), a map of America complete with outline, cities and animated 'journey across America' line, a shooting star, and plain old twinkly stars; a giant red piano keyboard, four moons; magical spinning cellos, violins, washing lines and pyros in a number of scenes that use HELL's radio remote modules and a spectacular PLC-controlled pyro sequence that runs with the church collapse. There are also the smoke and haze machines and the two Le Maitre LSG low smoke machines used in lieu of dry ice, since they offer lower running costs and a smoke that doesn't upset the choreographers or dancers by making the floor slippery.

What does all of this technology create? Interestingly, a show that doesn't look like a 'moving light' show; Harrison and his assistant, Oliver Fenwick, recall that one of the early briefs for the show mentioned that it had to feel like an old-fashioned musical comedy, of the kind Joe Davis might have designed in the sixties. For the most part, that is the style the show follows, though the rockier numbers inevitably led the lighting in a rockier direction at certain times.

The followspots work hard throughout keeping the principals clearly visible, and even have the entr'acte to themselves: operators Carina



The production sound team led by sound designer Andrew Bruce (second from right)

Cox, Paul Roughton, Paul Walker and Nestor Nitschke were amusing themselves making tiny dots of light zoom across the front gauze, the producer liked it, and so act two now opens with a meteor shower . . .

SOUND

Though the sound design for *Witches* is credited to Andrew Bruce, and it is clear that he has the final say on all sound-related matters, he is quick to acknowledge that it is a team effort between him, his associate sound designers Mark Menard and Simon Baker, production sound engineer Andy Brown and the sound engineering team of Sean Lawler, Graham Crimes, Jon Clarence and Keith Hutchinson.

"Increasingly, with such a complex system, I don't think that one person has the time to do everything and make best use of the system." Thus in *Witches*, Bruce roamed the theatre carrying a very nifty pen-operated Fujitsu PC tablet that allowed him to change the sound system's settings on-the-fly, Menard concentrated on programming the system and working with operator Borneo Brown to establish the mix, whilst Baker created the eclectic range of often-comedic sound effects the show demanded. In fact, one end of the spacious sound control area (in a reversal of conventional practice, the sound team were asked to make the control area as large as possible, to replace seating that couldn't be sold because of poor sightlines) is dedicated to sound effects equipment, with a DAR TheatrePlay digital 8-track playback system, two Akai S6000 samplers plus back-up duplicates of everything.

The rest of the sound system is a descendant of that used by Bruce on *Mamma Mia* last year - and also, as he admits, something of a prototype, since it uses the first samples of L-Acoustics' new dV-Dosc 'baby Dosc' loudspeakers. "They originally intended them as a small fill version of V-Dosc for use as part of a big V-Dosc system, but they also realised that they would work very well as a cut-down speaker for theatre use. They have worked out very well for us; they are so precise, they are very wide - approaching 120 degrees - and, as with V-Dosc, they couple so well; there are no spots in the auditorium where you walk from one seat to another and pass through a dead area."

The system uses 14 dV-DOSC units per side, hanging from custom rigging arms designed by Andy Brown, plus a central flown cluster of ARC loudspeakers supplying sound to the gallery; all are driven by Lab Gruppen amplification, though Bruce and Brown note that the show is actually using very little of the total amplifier capacity.

The show still features a healthy dose of Autograph's more familiar workhorses from the Meyer range, with four effect loudspeaker 'thunder clusters' spaced around the auditorium made up of UM Ultramonitors and 650s; the show also has surround speakers located around the sides and the rear of the auditorium, allowing sound effects, particularly the many dramatic thunderbursts, to be swirled around the audience under the control of Outboard's TiMax control system. Though the speaker systems are loosely described as 'vocal' and 'effects' systems, Bruce notes that in fact, because the TiMax output is re-injected into the mixing desk, any part of the system can be used for anything, with the thunder clusters put to good use for vocal surround effects.

Control for the system is from a 92-way Cadac J-type console, loaded with motorised faders for the radio microphones (allowing the desk to

preset vocal levels for numbers automatically) and three of Cadac's fully programmable modules for the three Witches, this allowing the creation of the relatively simple-sounding but very magical effect where the Witches' vocals float off into gentle reverb on one side of the stereo field as they move to the side of the stage.

Control for the desk is using Cadac's Windows-based software, which has been refined since its debut on *Mamma Mia* and was refined further during *Witches*. This software sends MIDI out to Matt McKenzie's MIDI control software, which then distributes it to the rest of the system; control also arrives from a footswitch in the pit which allows the musical director to trigger click-tracks, and from the Avenger show controller located at the automation desk. The sound then passes through XTA crossover, EQ and delay processing on its way to the amps and speakers; it is this system that Bruce controlled using his handheld tablet, replacing the more cumbersome laptop used during *Mamma Mia*. He and Mark Menard now consider this an invaluable tool.

Cast vocals are caught and sent to the desk through a 38-way Sennheiser 1046 system presided over by Simon Sayer, Rowena Edwards and Matt McCarthy, with the principals wearing two mics and transmitters. Sennheiser

transmitters are also used in reverse, to feed sound effects to set pieces that couldn't have cable run to them. And the show also makes use of Sennheiser in-ear monitoring for the three witches. Originally this was intended just to allow stage managers Camilla Clutterbuck and Simon Wood to talk to the witches in case of a problem during the flying sequence (though this also necessitated Brown splitting



The lighting crew - LD Howard Harrison is pictured front centre, L&S scribe Rob Halliday to the right

the witches' mic feeds so that they could talk back to the stage managers). However, during rehearsals it became clear that the show contained several numbers where the witches were required to sing close harmonies while

widely spaced across the stage and so it was decided to use the system to supply foldback as well, with the witches now receiving their own mixes that contain the band, their vocals, the others' vocals and some ambient sound.

The proof of the system's effectiveness is, as always, in the listening: you can hear every single word of the witty, snappy dialogue, yet that is never at the penalty of losing the energy from the clever, fun score. And the loudspeaker system and ability to tweak system settings on the fly mean that sound quality is consistent everywhere, and could be achieved very quickly. "Cameron was on our case from day one about vocal levels," Bruce recalls. "It wasn't until about day three that he said 'don't change it' which was about three weeks earlier than expected!"

So does four months of fit-up, including a month of technical rehearsals and three weeks of previews, plus a great deal of care and effort on everyone's part make a hit? By the time you read this, we'll know. At the time of writing, we just know that the previews have been full and the preview audiences have been having a good time. Now the show has to pass the judgement of that most feared band, the London theatre critics. We open tomorrow night. Fingers crossed!

Production photos: Michael Le Poer Trench



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