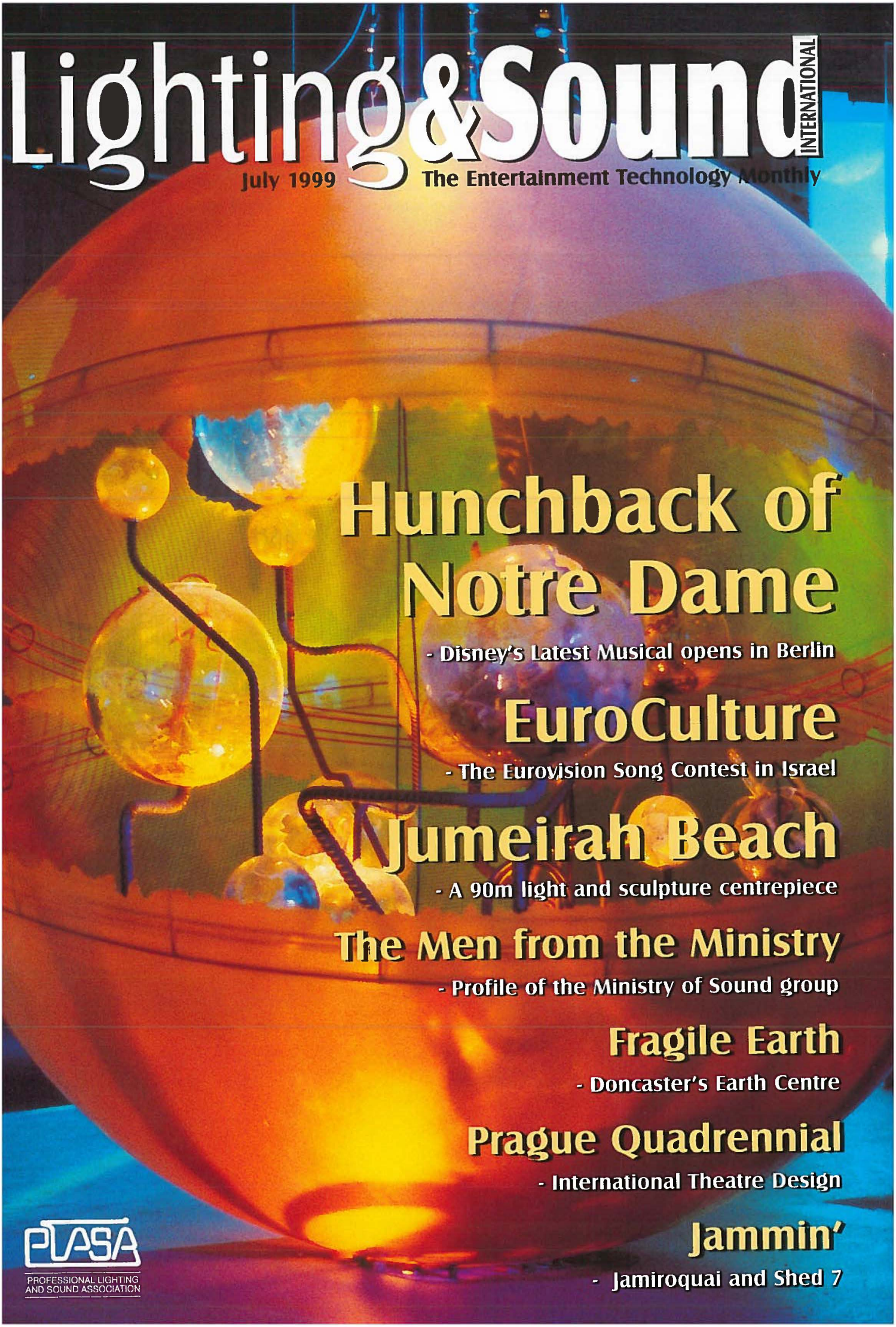
Lighting&Sound INTERNATIONAL
July 1999 The Entertainment Technology Monthly



Hunchback of Notre Dame
- Disney's Latest Musical opens in Berlin

EuroCulture
- The Eurovision Song Contest in Israel

Jumeirah Beach
- A 90m light and sculpture centrepiece

The Men from the Ministry
- Profile of the Ministry of Sound group

Fragile Earth
- Doncaster's Earth Centre

Prague Quadrennial
- International Theatre Design

Jammin'
- Jamiroquai and Shed 7

PLASA
PROFESSIONAL LIGHTING AND SOUND ASSOCIATION

Der Glöckner

THEATRE

Rob Halliday talks to the eclectic and talented technical team behind Disney's Hunchback of Notre Dame

The Hunchback of Notre Dame is the latest stage musical from Disney Theatrical. Actually, that statement isn't entirely true. To start with, the show opened in Berlin and therefore has a German title, 'Der Glöckner von Notre Dame' which, literally translated, means "The Bellringer of Notre Dame"; the German language apparently doesn't have an equivalent to 'hunchback'.

Secondly, although the show has been created by Disney and is an adaptation of their animated film (itself adapted from the Victor Hugo book), they are not producing it in Germany. Instead, the producers are Stella, who until now have specialised in taking established hits (*Cats*, *Starlight*, *Phantom*, *Les Misérables* - another Hugo musical adaptation which has done quite well for itself! - and Disney's *Beauty and the Beast*) and opening German productions, often building new theatres to house them. Now faced with a new, empty theatre (the Musical Theater Berlin, built on what was a strip of no-man's land around the Wall which they are running for its owners, Mercedes Benz) and no established hits to transfer, Stella have decided to create a new production.

It's interesting to speculate why Disney, who, to date, have produced their own shows, are now working as a hired hand, making a show to order (and, to the creative team's chagrin, doing so in a far-away land that doesn't yet have any branches of Starbucks!). Perhaps after their controversial production of *Aida* (out of town try-out with hugely expensive set very badly received, most of creative team subsequently replaced), letting someone else take the financial risk seemed like a good idea. Especially given the ever-increasing cost of mounting a show like this: pinning down the budget for Hunchback is hard, as those talking about it switch constantly from dollars to Deutschmarks to pounds, but somewhere around $25 million would probably be a good guess.

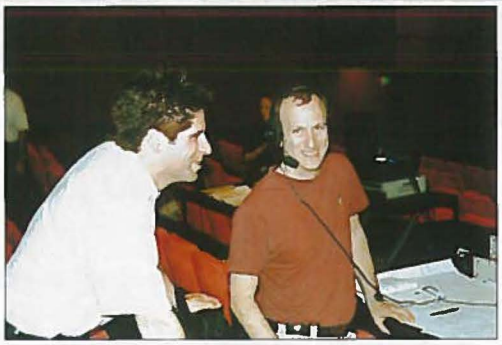
The result is an interesting intersection of two quite different worlds. An equally eclectic creative team was then hired to actually mount the show. From Broadway, director James Lapine (best known for his work with Stephen Sondheim on shows such as *Into the Woods*), designer Heidi Ettinger (Tony award winner for shows such as *The Secret Garden*), choreographer Lar Lubovitch and sound designer Tony Meola (already a Disney veteran with *Lion King*). Then, completing the design team are two names more familiar from this side of the Atlantic (albeit that one originally hailed from the States): lighting designer Rick Fisher (Tony and Olivier award winner, LD for countless shows in London and elsewhere) and costume designer Sue Blane.

The show's creation was as international as its creative team, with the mixed US/European cast being flown to New York for six weeks of rehearsals then flown back to Berlin in time to move into the theatre. Though Germany was a little far away for the regular flying visits for which Disney's executives have become legendary, they still kept track of the show's progress through satellite video links and other high-tech aids now commonplace in the film world, but virtually unknown in theatrical circles.

DESIGN

Stand on the stage of the Musical Theater Berlin with the worklights on and Heidi Ettinger's set really looks like nothing, certainly not

remotely like the set for a bright, colourful Disney musical. On either side of the stage is a three by three grid of black boxes (called the eggcrates by the crew). Upstage is a cyclorama with horizontally and vertically tracking masking in front of it that can be used to 'iris' the cyc into different shapes. And then there is the floor.



The floor turns out to be a spectacularly impressive feat of engineering, since it is actually formed of 11 'cubes' (two lines of three with an upstage line of five) each of which can move up and down independently of the others. The downstage line of cubes can drop two metres into the 'basement' (though 'substage' is actually at ground level, with stage level two floors up) or rise to approximately five metres. The others can only drop to stage level, but can then rise much higher, up to about seven metres.

In addition to rising and falling, the top surface of the cubes can be raked, with joining panels sliding out from the top panels to form a continuous raked surface when required. The engineering for the cubes, carried out by Bader Maschinenbau (whose other projects include the submarine for the film *Das Boot*) is stunning, each moving smoothly and accurately into position, the upstage and downstage cubes operated on a fork-lift principle, the centre set driven internally with all of the drive systems having to cope with the weight of the lighting equipment mounted inside each cube.

Strangely, given the usual German stringency on such matters, there are no safety edges on the cubes; there are also no handrails, which must make a first ride to their top deads quite a nerve-wracking experience. Control for the cubes is from a scenery control system developed for Stella's Theatre Consultancy division by Fülling & Partner; all of the show's flying is also automated, but this is run from a separate control system that is part of the building's automated flying system. Unfortunately, this does seem to lead to occasional problems where cubes and flying pieces have to move together, but the two computers take slightly different times to respond to their cues . . .

The combination of cubes and eggcrates allows a huge variety of stage shapes to be created. The two also work together, with ramps ('diving boards' in the show parlance) extending from the top egg-crates to allow access to the cubes when at their upper deads. An extra 'mini-cube' sits upstage centre, allowing performers to enter 'invisibly' onto the back of the upstage cubes at their highest deads.

But it still doesn't really look like anything - apart, strangely, from a collection of venetian blinds, since the front surfaces of the cubes are faced with horizontal slats of metal. That's because the show's design is conceived around projection: as well as re-arrangable staging, the cubes are also mobile projection surfaces, with their front and top surfaces actually formed from projection screen material. The venetian blinds in front of this material are intended to help keep the projections punchy by preventing flare from the show's lighting from hitting and wiping out the projected images.

Projection designer Jerome Sirlin uses two banks of projectors, one mounted in a sound-proof box at the rear of the stalls used to project onto the front of the stage and cubes (the low angle allowing the images to get through the venetian blinds onto the cubes' projection surface), the other against the rear wall of the stage back-projecting onto the cyclorama. All of the projectors are from Hardware for Xenon, with five OLS 7kW Xenon projectors front-of-house (four with slide changers, one with a double scroller complete with rotating mechanism) crammed in amongst the cinema projectors that are part of the theatre's permanent installation (Hunchback has to close for two weeks every year while the theatre is used for the Berlin Film Festival). At the rear of the stage a projection tower holds three more 7kW projectors, two with slide changers and one with the rotating double scroller. These three use new wide-angle lenses developed by Hardware specifically for Hunchback to allow full-width images to be

thrown on to the cyc over what is a relatively short throw. Control for all of the projectors is from a Pentium PC running Electrosonic's Easy 3.00 software (programmed by Gerhard Gronemann), this actually communicating with the projectors using DMX.

The most striking thing about the projection set-up on the show is that Sirlin and his team have effectively cut the traditional 'slide manufacturer' out of the loop, happily printing their own slides on a colour ink-jet printer. Coupled with using a digital camera to capture images of grid slides falling onto the various set configurations, these are then fed into a computer and used to produce mask slides quickly and accurately. The results are often striking - a projected bridge with projected river beneath, or the towers of the cathedral projected onto a series of stepped cubes.

Occasionally, the imagery is a little 'blocky' - and it seems strange that the show doesn't make more use of artwork from the film: if you have some of the best animation artists in the world on-hand why not make use of them? However, at its best, particularly in two scenes in the main body of Notre Dame, where a huge projected stained glass window couples with broken, dappled 'stained glass' lighting, flown scenic arches lined with front-projection, and hundreds of HELL candles flickering gently, the result is absolutely stunning.

LIGHTING

Lighting designer Rick Fisher was a little unsure when first offered Hunchback, then bemused during the contract negotiating phase (Disney have the rights to his design not just throughout the world, but throughout the universe!), then became quite excited about the technical challenges of making the show work, particularly working in conjunction with the set and projection. As is the way with these large-scale shows, all of the design work had to be carried out months before rehearsals started - particularly in this case, since Stella followed their normal practice of buying, rather than hiring, all of the lighting equipment, most of the rig being supplied through distributors Lightpower and co-ordinated by Despar Licht.

Which meant that just before flying to Berlin to start work on the show, Fisher became very nervous - suddenly aware that he was about to find out whether all of the half-forgotten decisions taken months earlier had been the correct ones. Just before the show opened, after two months of non-stop work in the theatre, he didn't seem sure that he had pulled off the design triumph everyone had been hoping for, unsure, with his typical modesty, about how his contribution fitted with those of the other designers. But as scene after beautifully lit scene unfolded before the audience at the penultimate preview, it was hard to see what he was worried about. The lighting for Hunchback is stunning - and even more impressive because, despite all of the limitations imposed by the set and projections and demands of a big musical, Fisher has managed to achieve a design that is predominantly and recognisably in his style - albeit with a slightly greater use of gobos than is his norm!

Part of the reason the design works is because the right technology became available at exactly the right time. The lighting is completely 'clean' - there is never the slightest degree of unwanted spill anywhere. In the old days such a look might have been achieved with lots of precisely set profile spots, but for Hunchback moving lights had to be used simply to deal with the fact that you never knew where the set would be next. A year ago that might have meant accepting the limitations of moving lights, with some spill from the largely uncontrollable beams they produce.

But Fisher and his team of associates Thomas Lüdicke and programmer Andy Voller were able to specify 12 Vari*Lite VL7Bs with their shuttering mechanism (alongside 42 standard VL7s), and 52 of Amptown's shuttering Washlights (28 discharge units in the overhead rig, 24 tungsten units crosslighting from the eggcrates). This version of the Amptown light was first shown at PLASA '98; at the Hunchback team's behest, Amptown carried out further development work, swapping the fresnel lens for a PC lens to give tighter beam and introducing proper, individual control of each of the four beamshaping 'shutters'.

The moving light rig is scattered far-and-wide around the theatre, with VL7Bs and Washlights mounted in the eggcrates to give Fisher the crosslight he desired, allowing a controlled beam to skim across the cubes then vanish invisibly into the opposite eggcrate. There are then overhead VL7s and Washlights for toplighting and backlighting, and more VL7s on the circle front and low side-circle positions. A further VL7 can be found in each of the cubes, allowing them to be textured internally with gobos, though in the final design this doesn't actually happen that much and some of these units may be cut and returned to base (all of the Vari*Lites are on a long-lease from VLPS London). Two DHA Digital Beamlight 2s are also lurking overhead, giving movable tight soft-edged specials. Control for all of the moving lights is from an Artisan Plus, Andy Voller quite disappointed that the new Virtuoso console, which he wanted for its improved handling of beamshape presets, wasn't ready in time.

The rig is rounded out with a familiar selection of conventional equipment: ETC Source Fours of all types (including 10 15-30 Zooms), Par cans, R&V 500W beamlights, four 5K fresnels, 153 Rainbow Pro scrollers, three 2500W Robert Juliat Margot followspots and four R&V 1K beamlight followspots, the conventionals driven from 450 SE-Verintens digital dimmers that are part of the theatre's infrastructure and run from an ETC Expression 1200 (plus a second console as tracking back-up). The Expression also runs the special effects (including nine Smoke Factory Data smoke machines, four MDG Atmospheres and three liquid nitrogen low-smoke machines, chosen over dry ice on cost and efficiency grounds) and drives a type of lantern that, in a slightly re-worked form, could become a big hit with opera houses around the world: the StudioDue Citycolor, an 1800W HQI floodlight with dichroic colour mixing and a mechanical dimmer. Designed as outdoor architectural floods, they are being used here to colour the insides of the cubes and to light the cyc - which is brightly illuminated in any colour using just three units at the top and three at the bottom. The Hunchback team had slight problems with outdoor units being used indoors and so overheating, but Fisher is pleased with the results they have produced.

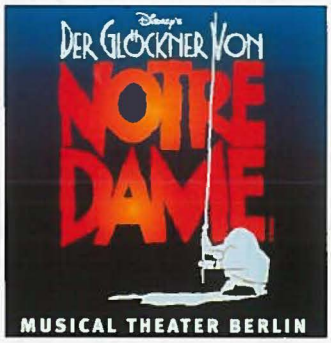
Once he gets a chance to step away from the show and look at it with a fresh eye, I suspect that he will also be delighted with the lighting as a whole. It is beautiful, both in terms of the big pictures (particularly the monks of Notre Dame seeming to hang frozen in space when crosslit in the eggcrates, and those stained-glass cathedral sequences) and in terms of the tiny details, such as the way that the three gargoyles always stand out, made to look like stone through careful colour selection and focusing on Sue Blane's costumes. The rig is infinitely versatile, but that just opens up the possibilities and makes the lighting process harder because you have to find the best looks, rather than just the first or easiest ones. Fisher and his team have achieved that magnificently.

SOUND

Perhaps the most immediately noticeable thing about Tony Meola's sound rig is that you don't notice it at all: the pros loudspeakers are concealed behind a gauze frame around the pros and the delay speakers are neatly tucked into the circle. Some speakers mounted on the side walls of the theatre do stand out as a result - but these turn out to be part of the cinema surround-sound installation, rather than part of the show sound system, though, of course, since they're there, Meola has managed to use them!

The heart of the system, as with so many other musicals, is a Cadac mixing console, in this instance three frames of J-Type giving 76 mono and 15 dual inputs to 15 VCAs, 16 subgroups and a 16-way matrix. 81 of the inputs are equipped with motorised faders, controlled using Cadac's established control software - their new SAM software was still being proven on *Mamma Mia!* in London as Hunchback was being put together. Vocal sound is collected through 37 Sennheiser SK50 radio mic transmitters, with 33 main transmitters plus back-ups on two of the principals and two used for percussionists who move around the orchestra pit. The actor microphones are principally Sennheiser MKE2 Golds, while the pit features a mixture of mics from AKG (C-414B/ULS, D-112),

Facing page (top), lighting designer Rick Fisher (right) with associate LD Thomas Lüdicke; The sound crew at the mixing desk, with sound designer Tony Meola (right) and associate sound designer Kai Harada (centre).



"These are interesting and challenging times in the world of the musical - but it is an area Disney seem keen to be big in, and so it will be fascinating to see what their next move is."

High performance video.

High performance graphics.

Le Rendez-Vous Toyota, Paris

Faraday Lecture Tour, UK

Mix to the Max

Display video and graphics on a videowall at the same time without compromise? With Vector™ you can.

The new Image Control processor from Electrosonic has been engineered to mix and display the most stunning presentations ever seen on the 'big wall'.

Large images of breath-taking quality. A dynamic mix of eight different sources with impressive effects. An intuitive control interface driven from your PC or direct from Vector. Your choice of analog or digital display devices.

All this with video and real-time graphics – Mix to the Max!

Vector has already been given the seal of approval by the people who matter most – our customers, many of whom have worked closely with our team at each critical stage of its development. To see for yourself, contact us now.

ELECTROSONIC
image control

Electrosonic Limited, Hawley Mill, Hawley Road, Dartford, Kent DA2 7SY.
Tel: (01322) 282247 Fax: (01322) 282215 www.electrosonic.com

BSS (AR-117), Neumann (U-89), Sennheiser (ME104/K6P) and Shure (565S, SM57, SM58).

Processing around the desk includes Valvotronics Gain-Ryder 3 compressors, Meyer CP-10 EQ-ing and BSS TCS-804 delays, while Denon minidisk players provide the relatively small number of effects (including some spectacular church bells) used in the show. The sound is then fed out to what is a predominantly active loudspeaker rig of 13 Meyer CQ1s, four Meyer CQ2s, six Meyer 650Ps, four Meyer UM-1 C/Ps and six Meyer UPA1-C/Ps. Apogee loudspeakers are used elsewhere, with eight SAT3s as front-fills, a further eight SAT3s as balcony delay speakers and 10 SSMs, all driven by a combination of Apogee SA-700 and DA-800 amplifiers.

As with the lighting rig, the sound system was purchased by Stella (through ASC), then installed by a team led by production sound engineers Michael Saddey and Ulli Kunst. The show is now mixed by Michel Weber, with a team of three - Peter Jutz, Thomas Milde and Andreas Hammerich - looking after the radio mics on stage. The team also featured a special two-week guest appearance from sound design assistant Jason Kreuger after a roller-blading incident hospitalised associate Kai Harada - still on crutches as the show opened he, for one, was very grateful for the lifts both backstage and in the Musical Theater's expansive foyers.

The Musical Theater in Berlin where Hunchback opened

Audibly, Meola's sound for the show is much as it is visually - unobtrusive - but all the more effective for that. It is never forced on you, but just carries the vocals and orchestra to you crisply and cleanly. You hear every word even if, with the show sung in German, some of us then couldn't actually make much sense of it . . .

The German audience, who did understand, seemed to enjoy the show, especially judging from the lengthy standing ovation at the end - though it was interesting to note that they were predominantly adults, rather than the families that are traditionally associated with Disney products. And it is generating a considerable degree of excitement in Berlin (surely on track to be the city of the Millennium) because it is a new show rather than a transfer from elsewhere.

But, as is increasingly the problem with these shows, it has to do an enormous amount of business for a very long time to break even. When even supposedly 'sure fire' hits are failing to do that (*Beauty and the Beast* in London seems set to announce its closure after just two years rather than the anticipated five) it gets harder to predict the success of new shows (though if Hunchback doesn't run the versatile scenery, projection and lighting could probably be used for just about any other show!) Strangely, if the show is a hit that will also present problems, since the general consensus is that there isn't a theatre in London or New York big enough to house a 'cloned' production.

These are interesting and challenging times in the world of the musical - but it is an area Disney seem keen to be big in, and so it will be fascinating to see what their next move is. As long as they keep picking teams as eclectic and talented as those behind *Hunchback* and *Lion King*, their shows will certainly be fascinating to watch. Moneymaking? Well, that's harder . . .