

Lighting & Sound international

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Lord of the Rings in Toronto

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Photo: Manuel Harlan



Photo: Manuel Harlan

Lord of the Rings

Words by Rob Speight

Attempting a production of Tolkien's *Lord of The Rings* is an epic undertaking in anyone's language. Adapting the three-book classic for the stage is an even greater challenge - especially with Peter Jackson's recent formidable movie trilogy to compete with.

Yet, this is exactly what producer and consultant producers Kevin Wallace and Saul Zaentz decided to do. In the newest theatre in Toronto, The Princess of Wales, Wallace and Saul have gathered the cream of theatrical creative talent and, after six months of continuous work, Frodo, Sam, Merry and Pippin are making their way cautiously across the Shire and onto the stage.

However, unlike Jackson, Wallace and Zaentz have managed to squeeze all three books into one performance, which admittedly does run to around four and a half hours. (Although the show I saw was only the second preview and the only performance that had run from beginning to end without interruption - it hadn't even had a full dress rehearsal when I was there in a packed house!)

Staging

Re-creating the marathon journey undertaken by the four hobbits as they explore the wondrous and often oppressive landscapes of Middle Earth is, of course, a mammoth team effort. The set design is obviously fundamental to its ultimate look and Rob Howell, who also designed the costumes, was chosen for the task - a challenge he met head-on by way of extremely complex automation.

It was originally intended that the production open in London at the Dominion Theatre in the heart of the West End (it is rumoured a duplicate will move into the venue around October). However, after negotiations ran aground, the location switched to Toronto. At this point, Howell's set and the elaborate automation was already well under construction by Silicon Scenery in The Netherlands, while UK-based Delstar Engineering was supplying the hydraulics. Thankfully, The Princess of Wales was of a similar scale, but the transfer across the Atlantic caused mains supply voltage to rear its ugly head. As construction of the drive units and power distribution had all been designed for the UK, it was cheaper to use transformers to step the power than to rebuild the huge revolve.

Silicon Scenery's Auit De Bulten explained: "The main setup of the stage is three revolves, which comprises one central revolve with

two doughnuts around it giving a maximum radius of around 15 metres. The middle doughnut, which is the biggest piece, contains 16 scissor lifts. The centre revolve, which is basically a rotating disc, can go up and then down into the basement as well."

As well as controlling the stage with the company's proprietary Autostage 2000 system, Silicon Scenery were also charged with supplying the automation for scenic and performer flying. With approximately 45 tonnes of machinery rotating, rising and falling simultaneously beneath a cast of around 60 performers, safety is paramount: "The stage is surrounded by safe-edge, which is a rubber bumper with a sensor. If you hit the bumper the lifts shut down and I will decelerate the revolve at that point," explained operator Kevin Dixon.

Thankfully, the production team and cast had access to the stage in rehearsals, which took place in London, and were able to programme many of the moves as individual scenes were blocked and rehearsed. To ensure that cast members could work out where on the revolve they should be, a series of coloured LEDs were embedded into the floor giving relative positioning information to the performers. Additionally, to plot complex scenes, such as the battle at Helms Deep - which is around eight minutes long and involves a continuously changing stage - De Bulten and Silicon utilised Maxon Software's Cinema 4D to plot the stage positions in advance.

Lighting

With such a continuously changing stage, it is with little wonder that the lighting design had to be flexible enough to give an almost infinite amount of looks as well as being able to light performers shadowed by highly elevated scenic elements. Designer Paul Pyant and associate David Howe, who have worked closely together for around 15 years, were tasked at a late stage with creating the look that would bring the visuals together: "We got here on December 3rd but we were late on the show. We were not the first choice of designers because the production was supposed to be in London.



Photo: Manuel Harlan

When the venue was swapped to here, the original designer didn't want to spend four months in Canada. So, we didn't get the job until July. We had a very rushed process of getting the job and getting on top of it. We literally had a day-trip to Canada to look at the venue, and then did all our pre-production in London," explained Pyant.

After getting a feel for the venue, Pyant and Howe put together an equipment list and drawings, followed by six weeks with the lighting rental company, Q1 Show Technologies, based in Winnipeg. Q1 supplied a massive rig comprising almost 600 fixtures, of which a massive 229 were varieties of ETC's Source Four and 142 were moving heads that included Vari-Lite 3000 and 3500 Q Spots, Clay Paky Halo Wash lights and more ETC units, Revolutions - complete with gobo units. Adding to the atmosphere are three appropriately-named Atmosphere haze machines from Canadian manufacturer, MDG.

Jonathan Rouse had the daunting task of programming the huge rig, and with an 8,000 channel Strand 550i console for production lighting, a Strand 520i console for special effects and a total of 14 DMX universes to contend with, he had his work cut out for him. After initial teething problems with X-Connect, Strand's proprietary networking technology (problems, which Strand were convinced were being caused by members of the production team using the same network to browse the internet!) Rouse got stuck into what can only be described as Gobo Central. Pyant says: "Essentially, this is a design-led show, and what with the set being what it is, we are trying to serve the show as it was designed. We have basically followed where we have been led by Matthew Warchus, the director, and Rob Howell. Ultimately, when we designed it, because we didn't have all that much information, we included as much flexibility as possible, to cover every eventuality. So far, it has served us very well. We haven't had to do any major re-rigging or complete re-thinks at all."

Howe concurred: "The equipment chosen has done exactly what we wanted it to do and in some cases, many more things. It has given us more flexibility and has come up with the goods. We have been asked to do all sorts of things we didn't expect to be, which is part of the natural course of the design process, and we have been able to do it almost as quick as you can ask for it."

Pyant's design complements Howell's multi-layered scenographic elements perfectly, the extensive use of gobos throughout the show creating a wonderfully textured, life-like environment, which the lighting team utilises extremely effectively - beautifully accentuating the changing seasons, the passing of time and the ever developing mood of the production: "What is difficult is to try to ring the changes between happy scenes, sad scenes, forest scenes etc. The gobos give you the flexibility to build some of those pictures - I am thrilled with some of the forest scenes and I think the set design is brilliant, I have to say, simply because it is able to transform. I don't think you're totally aware the whole evening that you are in the same space," Pyant mused.

Creating some of the more dramatic moments, Pyant and Howe were aided by an unusually dark auditorium allowing shadow and silhouette to be utilised to great effect. A case in point for less often being more: "There are moments when there are people standing downstage having a conversation, like during the Shelob [the big spider!] set-piece, and literally three foot upstage of them is huge bit of scenery ready to move and you cannot see it. It is the blackest black," said Howe.

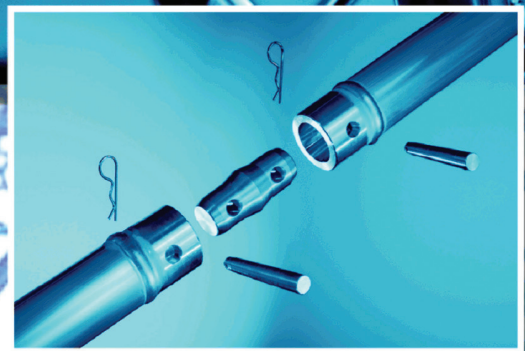
Probably one of the most effective and interesting uses of the automated lights during the performance is the way in which the lamps often followed the movement of the revolve, bringing a state upstage - downstage by tracking the revolve rather than creating a cross-fade. It is at this point where the wonders of SMPTE timecode enter the equation, with the lighting desk being triggered and following sound - a notion that should make all us sound engineers feel superior - or at least slightly more smug!

"Things like Helms Deep and the battle at Mordor are all on SMPTE so they are all taking points from that. Synchronisation was quite a painful process of me, sitting there with the score, pressing the button at the

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right time and then editing from there. The MD presses the Go button and the track and lights start. The automation is run manually but it starts at the same time. When we start off on that there is no stopping it," Howe smiled.

To create Pyant's final look the entire overhead rig is automated lighting, save 12 conventionals. There are no spot bars - the entire rig consisting of trussing, which hold the Vari-Lites and Clay Pakys. Coming off the main truss are a system of ladders, which fly up and down to allow performers - specifically the Ents - on and off of their stilts. The ladder sections also hold a selection of Revolutions and a small collection of traditional lanterns. FOH, more Vari-Lites adorn the usual positions and work alongside conventional lanterns: "We are using Wybron CXI scrollers, predominantly FOH, so we can mix any colour for the environment. There are a few light-curtains doing backlight and a few HMIs doing real chunky key backlights. During one of the first briefings we had with Matthew Warchus, he said he wanted it to look like a cross between Jean Kalman and U2 - Kalman being a French opera lighting designer and U2 being flash and trash, really," laughed Howe. Nothing like a broad spec! With all of the fan action from the movers, scrollers and projectors it was a surprise to discover that the sound department weren't pulling their hair out - but then some have less to pull out than others! "I am actually quite surprised how quiet the rig is. Simon hasn't screamed at us yet," smiled Howe, looking nervously over his shoulder.

Sound

Yet Howe had nothing to fear: at this point in the production process sound designer Simon Baker had bigger fish to fry. With script changes and cuts came calls for re-recording of narration, alterations to playback timings and sequencing plus additional effect design. While Baker juggled more video monitors connected to Apple Macs, mixing desks, samplers, effects units and Pro Tools systems than one person should reasonably be expected to look at without going mad, I slunk off with associate sound designer Sten Severson to discuss this mammoth audiological project.

Severson, who has worked with Baker on previous projects including Chitty Chitty Bang Bang, worked closely with Sound

Associates of New York, who provided all of the production sound equipment: "Simon approached me at some point last year and said, 'I am working on this show, do you fancy leaving home for six months?', which seemed totally idiotic at the time but I did it anyway. From the beginning, my job has been the realisation of what he has come up with. He put together the basics of the system - the consoles, the speaker systems and placements etc - and it became my job to make it reality. Simon is a very experienced production engineer in the UK, but in the US and Canada things work very differently. The union issues are different and so are the rental shops. In London if you are doing an Autograph show in the West End, you're 15 minutes away from help. Here, you're a day's drive away from help! Also, the style of installation is different. So I was able take what he had done and translate, and fill in the gaps," Severson explained.

One of the most obvious differences to a Baker designed show, is the installation of a Meyer Sound MICA line array system that wouldn't have looked out of place at a reasonably-sized rock gig. Additionally, the line was not exactly what you might call banana shaped, unless it had been a particularly cold winter: "The only difference between a rock rig and this system is we were trying to be more precise about where it went. Because it is going in and staying in forever, being encased in all that scenery, we had to make sure we had the best placement possible. Simon was positive that we had a line of sight from our FOH mains to the back of the house, which is kind of hard to do in this house because there are two balconies and it's fairly low. While we are playing hard and fast with the rules on how a line array works, what we end up doing is trying to reach further back in the house with the top box. We actually change the gain and EQ of each box, which flies in the face of line array theory. However, if we limit what we are doing to the high frequencies, because they don't really obey the same rules, you can push more high frequencies from the top box," Severson explained.

In addition to the MICA system, Baker called on Meyer M1D boxes to operate as a centre cluster, M3D Subs and UPM-2Ps together with four Bose Accoustimass cabinets for vocal front-fill. Other fills and delays utilised a combination of d&B E3s and an Autograph

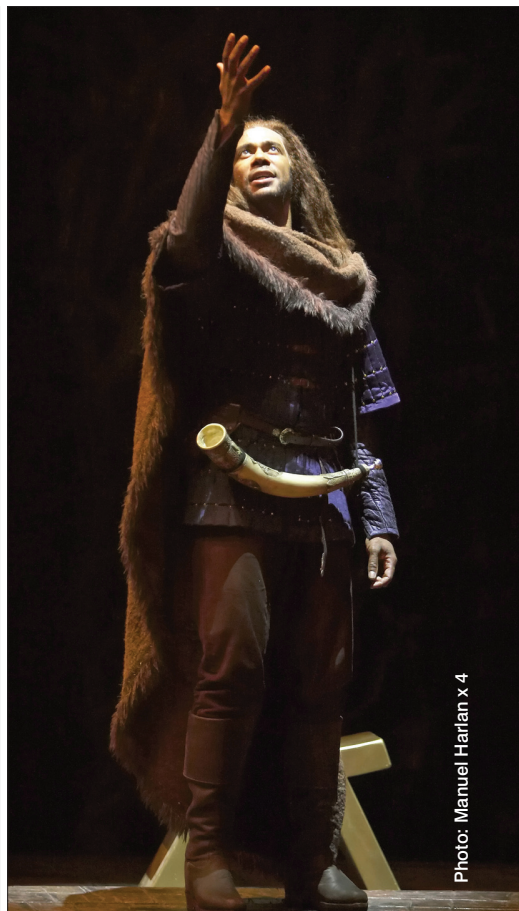


Photo: Manuel Harlan x 4



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Above: The arrangement of revolves and lifts is clearly visible in this battle scene.

Sound favourite, LDS400s, as Orchestra cross-fills: "The idea was really to have all of the sound of the orchestra and the cast singing focussed to the stage. We also knew the show would have to get really loud and we needed a big rig able to handle that," Severson smiled.

The FX speaker system for LOTR was, unsurprisingly, large with surround being handled by 48 Martin Audio Effect 5s and four WSX subs. XTA SP428, DP226 and DP224 processors take control of the main system EQ, while Meyer's own CP10 Parametrics whip the surround and other spot effect boxes into shape: "We also have Meyer UP-Js practically all the way around the stage and some UP-Ms where the Js were too big. The UP-Js fire in from the sides and above. In the wings there is another set of UP-Ms covering those areas. Off stage you need to be able to hear vocals and as a policy, for audio quality and personality reasons, we don't allow any vocals to be fed back onto stage," Severson detailed. Apart from negating all the issues with creating a stage mix from FOH, this policy stopped performers worrying about who was loudest in the monitors, kept the indirect signals re-appearing in the FOH mix and ultimately kept the show sounding as intelligible as possible - a challenge enough with up to 35 open mics from performers alone without even considering the band!

Unsurprisingly, Sennheiser SK5012s were the transmitters of choice for the show, 64 in all, fitted with DPA 4061 miniatures. Other than the cost of hire on a show of this scale, consumables such as batteries require a significant budget. With the show estimated to eat its way through 3,600 AAs a month just for radio mics, the Toronto recycling community must be rubbing its hands with glee! In the orchestra pit the 19-strong band, playing a total of 24 different types of instruments, were mic'd up with more DPA mics in the form of IMK 4061 for strings, 4011s for the horns, 4015s on

more ethnic acoustic stringed instruments including Johiko, Nickleleharp and Bazuki, while 4021s and 4041s took care of more strings and percussion. AKG, Sennheiser and Neumann's of various flavours covered the remaining strings and further percussion.

"We have some microphones in booths off-stage where, basically, we have a bunch of headphones. People run over, put them on and sing their part. They're often running off, singing something, putting down the headphones and running off for a costume change. It is manic backstage. However, we are finding that it's easier for us to control the levels from their head-worn microphones," Severson said.

Controlling this swathe of live sources involves two DiGiCo D5Ts, which are bussed together by way of standard input channels from one to the other. At the end of the fit-up the team soon realised that they had used every single channel, a total of 256, across both desks. From the D5Ts, a TiMax Audio Imaging System is used to position effects in the surround system, while two TC Electronic S6000s look after surround reverb: "The surround 'verbs are very important, they really help with the sense of place," Severson detailed. A TC Electronic FireWorX is employed to create some of the more unusual effects, while Helicon Voiceworks and Finalizers give Baker the flexibility and control required.

Baker created the show's effects with Digidesign's Pro Tools 7 on a combination of TDM and LE systems in the UK, at the theatre and downtown in his digs, over six months: "Simon has a very specific way of using sound effects, which sounds kind of Byzantine when you look at it, but it is extremely flexible and a supreme way of doing whatever he needs to do at any time. He has Logic running on a Macintosh and he is using the built-in sampler, with 128 iterations of that sampler, each one with a sound effect in it. Then he can



Photo: Manuel Harlan x 2

route to any output he wants to, change the level, pitch, loop it and do any of the great things you can do with a sampler. Then he routes those outputs into TiMax, giving him control of where the audio will go, which has a different state or series of states for each cue. Logic goes out through a MOTU 24 I/O box, into TiMax and then back into the console and out to the various speakers," Severson explained slowly!

Triggering the whole lot is the trusty G-Type software from Mackenzie Electronics, allowing everything to be cued, changed or switched via standard MIDI. The way in which Baker gets this variety of technology to hang together and work seamlessly is almost a finely rehearsed performance in itself: the extremely complex

set-up, complete with seven PCs and two Power Mac G5s, makes altering cue timings, positioning and sequencing a breeze, as we witnessed first-hand: "That kind of sums it up," smiled Severson.

Visuals

Wrapping up the fantastical Middle Earth environment by adding visuals that would otherwise be very difficult, if not impossible to achieve, are the talented people from The Grey Circle - a London-based moving image and projection specialist design company. XL Video, also in the UK, supplied the systems.

Yuri Tanaka, a designer and art director for the company explained how the Circle fitted into the Ring: "I am art directing on the show,



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Lighting designer Paul Pyant (foreground) with associate designer David Howe visible in the background.

so I am working with a team of designers. We are using five projectors and one huge LED screen. When we moved into the theatre we started to work closely with lighting, but beforehand I worked very closely with the set designer because the projections are essentially set," Tanaka said. With the LED screen practically the size of the entire back wall of the stage (109 panels of Unitek V9, creating a screen of 12.3m wide by 9.5m high), the screen was also essentially another light source and the team soon realised that it needed to be run significantly dimmed: "We did consider using it to blind the audience at one point, but we have to control the brightness for each scene to work with lighting, and it just became too annoying!" Tanaka laughed.

Additionally, to ensure the projections did not end up looking too crisp, the team placed a back projection screen directly in front of the LED wall, giving the animations a softer look. Above stage,

a Barco SLM G5 projector allows the team to integrate textured floors with the gobo-centric lighting design, while at FOH six further projectors for wide screen effects (edge-blended Barco SLM G8s), narration (overlaid Barco SLM G5s) and downstage 'ring' gauze projection (Panasonic 7700s) completed the line-up. Tanaka admitted: "It has been a really difficult but exciting project for me. I come from a different video background really and don't have as much theatrical experience as many other people, but it has been a great challenge."

The team utilised Adobe After Effects and Photoshop to create and composite the animations and video sequences, which were then loaded onto two Catalyst Media Servers running V3.3 Pro Software and controlled from a dedicated WholeHog 500 console: "We ran over three kilometres of signal, control and power cable for the show, while Gerrard Cory worked as our projection technician, Chris Isaacson looked after all the LED, while Ian Galloway and Simon Pugsley worked with The Grey Circle to programme the Catalysts," explained Malcolm Mellows, XL Video's production manager.

With such an expansive production a report like this can only brush the surface. Suffice to say, this production has to be seen to be believed. The mass media are portraying the show as a musical without catchy numbers - that is because it isn't a musical. It is a brave and ambitious attempt to bring a much-loved, extremely complex vision to a CGI-overloaded, visually over-stimulated audience. This is not the film, this is live and it is every night - to pull it off once is clever, to make it repeatable, profitable, exciting and sustainable is incredible. The One Ring may have reached Mount Doom in Toronto, but beware, it is soon to be transported to London's West End and Broadway, so you won't have to 'Scour The Shire' to see it.

Rob Speight

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