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## Take That Live!

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# Take That Live 2015

Words by Steve Moles

Performance photography by Andrew Whitton

When I first saw photos of this show I thought 'Disney' - the sight of Take That members Mark, Gary and Howard coasting through the air above the audience on a boy-blue bicycle (see cover) was pure *Mary Poppins*. On the face of it, that's not such a bad thing, there is after all something about the reclamation of lost youth within this show; the audience is largely a narrow demographic of women who grew up with Take That. They're a joyous bunch - that's what's great about a Take That show. That joy and the sheer exuberance of the band, is matched by the wonders of the show itself and the emotional response it elicits. As a form of entertainment there's little to touch it.

Artistic director Kim Gavin has always sought and achieved the spectacular for this band, yet he has transcended even his own vivid imagination this time. When I first spoke to Chris Vaughan as they conducted dress rehearsals at the Glasgow Hydro Arena, he said: "I've got 32 trucks . . . it's a stadium show squeezed into an arena," and he wasn't joking. You might think it slightly ridiculous: a stage set that extends almost 40m down the arena with 220sq.m of LED screen within, literally hundreds of the very latest moving lights, 3D flying, something of a small revolution within the PA system, and dancers, costumes and choreography as only Gavin knows how. Feast on this and never go hungry.

There's also the issue of renewal. There are three companies involved in this production who have arisen from the ashes, one literally and two metaphorically: Neg Earth Lights, Video Design and Chris Vaughan Productions. As with all rebirths these are not without pain, but the results, as exhibited here, are refreshing and positive.

## Creative Evolution

Designer Tim Routledge explains the creative process on behalf of Kim Gavin, set designer Misty Buckley and himself: "We were in LH2 for five weeks, two for system set-up and three with performers. It's so big we were touching the ends of the building, and even then shaved one metre off the walkway."

This is a huge stage that extends into the bleachers, with a walkway extending out to a circular B Stage. It looked familiar somehow. "As such, we had to programme sat within the set, only getting any real perspective of how it would look to the audience when we got to Glasgow and did the dress. It's Kim's vision - he wanted an immersive and theatrical show, and there is much theatre within this, but it's many other things besides, embracing pop and rock." To which I might add cinema.

"The design period was tight, the concept was only confirmed after Christmas. Fortunately, we had done a long promotional run in the autumn, but even so the final design of the back wall - in particular the lighting pylons between the screens - was only settled two weeks before we loaded into LH2. Brilliant Stages provide the main stage and lifts; Total Fabrications did a fantastic job getting the pylons done

in time and so well. Total Fabs also built the Choir Stalls, the circular walkway and the light boxes that deck it, and the B Stage. I like to think of Misty's design for the back wall of the stage as a sort of German Expressionist version of the Royal Albert Hall - the choir tiers as per the RAH, with the triptych centre screen representative of the huge organ pipes."

He's not wrong, maybe that's where that sense of familiarity came from, the lighting pylons adding to the sense of Victorian grandeur with a modernist twist. The triptych LED screens form a 3D back wall: "That 3D form is so much better than simple flat screen, and the towering vertical height is something I'm always keen on, to get away from a conventional screen view. But it's also important for me to have lights visible within the screen area, that's the origin of the pylons. There were four main constraints that determined the design, not least the 3D flying, which through the physical demands of winch







placement and cable runs dictated that the trim be 18m. That in turn set sightline parameters; everything trimmed high, the lighting trusses stepping down only as we get closer to upstage. The depth of main stage sets other limitations - not least the rain water gag on the choir stalls where the cast are seated."

The cast, it should be explained, are a rotating group of volunteers drawn from choirs and singing groups around the UK who inhabit the choir stalls of the stage set.

Routledge continues: "The pylons each house 60 lamps, Clay Paky Mythos and Stormy strobes, Ayrton MagicBlade-Rs, and we've had triangular, perforated reflective panels fitted. They're 2m wide at the top, and I get strong reflections off them using the Stormys, in effect becoming a large, colour-changing wash light [with the strobes used in permanent 'on' mode]."

The opening sequence to the show is pure theatre, with performers appearing at random across the staging. It's a quirky tableau of clownish activity that builds tension and expectation, culminating in the emergence of a cartoon cityscape that has something of the darkness about it. As the skyscrapers evolve visually on the screens, Routledge executes small upward rolling cascades from the Ayrton MagicBlade-Rs on the Pylons - just a single LED at each end of these seven-cell units in white. Routledge called it "energising the scene", a simple piece of lighting as animation. The example makes two points: the fusion between set design, video content and lighting is complete, rarely does one exist in show mode without the others; that's a holistic approach I didn't see falter. The other is utilisation: while the MagicBlade-Rs made a visual punctuation to what was the dominant video image of the moment, elsewhere similar small but thoughtful elements of lighting were illustrating or supporting bijou dramas unfolding upon this vast stage. So Amanda from Rochdale, sat in the





most distant seat of the arena, there was a strong sense of the main act, while she could also snack on the sweetmeats of choreographed theatre playing out 40m closer to her on the walkway. "What we have created is this beautiful world of linked scenes," Routledge said. "But it's a pop show, Take That never hide nor become submerged within the grandeur of the fantasy."

#### Lighting

So what of the profusion of lights? "Foremost, I needed to create depth and that meant lots of floor lights and lights placed at different angles at every level," Routledge began. "This is the longest set list we've ever done, 26 songs in 120 minutes, plus preludes and links, so there's a demand for variety. While it might look as though no expense has been spared, and they have been very generous, everything is there for a reason."

"In terms of instrument choices, I always like to go small where possible," continued Routledge. "I don't want the technology to intrude on the view. Many of the lights are to transport the performers as they move between different parts of our world. When Misty first revealed the walkway, striped like a zebra crossing, I was delighted: I'd had Total Fabs build LED light boxes for me on the last Gary Barlow solo tour and knew right away they'd be ideal as the white deck stripes, giving me RGB colour changing beneath performers that I could use to track their progress along the walkway. TFL did a stupendous job with them."

As indicated above, many of the lights are positioned to enable Routledge to animate the performers, lighting just their immediate area as they progress across the set. It can be quite

magical to observe; in that sense, the best seats in the house are arguably those on the bleachers.

"I chose MAC Auras to work the stage edge, they're simply the smallest wide zoom wash for that position as footlights along the walkway and the range they have to cover. The inside edge of the walkway is fitted with Ayrton MagicBlade-Rs. I wanted them to create a light curtain effect, but the continuous rotation is stunning and I had to restrain myself from overdoing that. I had the chance to test them out on the Johnathan Ross Show and loved them - the TV people were pleased too, and the cameras caught the beams. Beams are an important brush stroke across the set, so haze was a big consideration and, amazingly, this is the first time I've been able to specify haze as I want it. I selected MDG's The Ones after seeing them at PLASA last year and Dave Ridgway [Neg Earth] was good enough to buy four for me. Basically, I have one in each corner of the room and run them at low output, which maintains coverage whatever the drift of air within the venue. I'd also seen the MagicBlade-Rs at PLASA for the first time, and I wanted them for this show. Even then I had a song in mind, Get ready for it, but of course I've found many other applications for them since. Considering the continuous rotation in pan and tilt, they have proved to be the most reliable instrument on the rig."

Rob Gawler is Routledge's system tech' and wing man for control: "He looks after all things network and control for me plus runs the support act - Ella Henderson." Gawler also rated the new equipment for reliability. "I think we've had just three problems since we started, and when you consider virtually every light in the

From top: Stage manager Richard Wearing (left) with Phil Broad, technical manager; Designer Tim Routledge (left) and system tech Rob Gawler; Monitor engineer Steve Lutley (right) and his assistant Glen Fuller.

Left: Chris Vaughan, production manager. Right: Alex Leinster, managing director of Video Design.

Bottom, left: Gary Bradshaw, FOH. Right: PA system tech Tony Smith.



Photo: Brian Shannon



rig is brand new, and there are hundreds of them, that's impressive."

Gawler is an LD in his own right, last seen in these pages lighting Oasis (see LSI November 2008), and knows all about less reliable lights. With such a big show there is plenty for him to do. Routledge explains: "Bits and bobs occur during the show that may need attention and Rob looks after all resets, restrikes and any messages that need passing backstage and vice versa whilst I'm calling spots etc."

"The Ayrton MagicPanel-Rs too were an obvious choice," Routledge continued. "A good example of why they're great is the wall of 54 of them I have behind the main stage centre box lifts. The simple act of being able to turn their black backs to the audience so they present as a plain black surface and thus become invisible when not in use is invaluable for focussing attention elsewhere, rather than the audience being distracted by the view of inert LED panels. The biggest advantage is being able to use what is the beta software for MA's VPU (Video Processing Unit), something I would not have attempted - especially on a tour of this stature - had it not been for the support of Ambersphere [UK distributor for MA Lighting, Clay Paky, Robert Juliat and Ayrton]. Not having to send and merge data to the units over Art-Net is a boon; no big control infrastructure required. In fact, that was one of the deciding features - I knew if it didn't work out then reverting to simple lighting control would not be a big issue."

"I use them primarily as a light, but for four or five numbers put video through them, copies of what Richard Shipman is feeding to the main video screens. It was a simple decision - Ambersphere offered me VPU and they were right there across the street from Neg Earth when we rehearsed. Ambersphere are unlike any other distributor in my experience, their proven willingness to back up a product gave me the confidence, and it was such a temptation. You just take all the 3D spatial positional information from the MA WYSIWYG and the VPU immediately knows where every pixel is. In fact, it's proved so easy and so powerful that I know I'm going to be trying much cleverer things with VPU in the future."

"Selecting Clay Paky's Mythos was a different consideration. I have action happening

everywhere and with the high trim I needed a powerful moving spot, and I'd need hundreds of them. I did look at the Robe BFML as well but the hybrid features of the Mythos won out. It's not your standard spot by any measure and has huge potential. You can produce strong Sharpy-like looks, or huge gobos for texture, and its perceived brightness is intense; a product of the colour temperature I think. But the gobo projection is staggering - think of the range we have here, and yet it'll stay in focus no matter how far you shoot it. So good, in fact, that I was able to persuade Production to have a custom gobo made for them - that's no small consideration when you have a 121 Mythos in the rig. Sticking with Clay Paky, I also have Sharpy Washes down the sides of the Pylons, another small feature light as architecture, they also have big punch for their size. I used them on the Commonwealth Games last year at about 100m range and they still ate the distance."

If readers look to the lighting plots online they will see in the instrument key the unexpected Pulsar AR111, a small, IP65-rated, flush-mount LED flood: "They're for the cast," Routledge explains. "Each of them has a box of props including an umbrella they use for The Flood, which is exactly where the Pulsar floodlights come in. They need to be IP rated because the rain effect falls directly onto them in the choir stalls."

The rain gag, along with all the other special effects, comes from Quantum Special Effects, with the little Pulsar units pointed up into the

cast's clear PVC umbrellas. "They have other uses," says Routledge. "As an LED flood I'm able to pixel-map light onto the faces of the cast, which I do in Affirmation, so even they become a texture to the stage."

Among the various other effects from Quantum, many specifically designed for the show, are the XLSG SmokeStorm, confetti bursts (left) and the spectacular pyrotechnics on the Sun. Dan Ivory-Castile, Quantum's crew chief said: "The XLSG SmokeStorm kicks out an immense output of smoke. Within 10 seconds we can fill the entire Golden Circle waist-deep with fog. It's powered by Quantum's custom-designed heating element system and separate control system."

Back to lighting: Routledge continues: "The MAC Quantums light the walkway from above, and more importantly provide a colour changing top light for the white gauze which they colour wash beautifully. They're also not a bad key light above the dancers."

Another string to Routledge's bow is calling followspots, he has 13 on the show, three Robert Juliat Lancelots at the back of the house, four RJ Victors to the sides of the house for the walkway and B Stage, and six Lycian M2 flown rear spots. There's some very tight cueing required so why not delegate to Gawler? "I did think about that, especially as the show has a very busy start, but I like to chop and change through the shows, I like the challenge. With a regular band you can simplify spot calling, assigning each operator to a specific musician, but not with a show like this. All of them are constantly being re-assigned targets. Luckily, they've all operated before. It's a very complex show, but I think they enjoy it all the more for that."

I saw the followspots in action from many vantage points: the Lancelots are a given in any situation really, but considering the Victors' position close to hundreds of very bright moving lights they were equally impressive.

#### Positive Earth

Routledge says: "We were almost the last band to rehearse at LH2 and the last show to load out the hire shop. Had the fire happened a week earlier, with so much new kit bought for the show, we'd have been in dire straits. To look at Neg Earth at this point in time it's flabbergasting





to me how effective they are. Caroline Beverley, our Neg Earth account manager is no different from previous tours. If there have been problems, they've been completely hidden from us. You wouldn't know anything had happened."

#### Sound

There is something of a small revolution taking place in the audio department - ArrayProcessing from d&b audiotechnik. I asked tour system tech Tony Smith to summarise just what ArrayProcessing does: "Array Processing (or AP) gives you the same sonic character, a consistent tonal balance and even level distribution, throughout the audience listening area. That's regardless of loudspeaker Series (we're using mainly J and V-Series), array length or splay settings."

How does that help Gary Bradshaw at front-of-house? Bradshaw has been mixing Take That's audio for many years. A confirmed master of his art, he finds himself for this tour with a change of supplier (Skan PA) and a new twist on a PA system with which he is all too familiar. "The first thing I've noticed about using d&b's new ArrayProcessing software is that the tonal balance is far more uniform all over the gig; better front-to-back and side-to-side. Truth is, we keep saying we will do a show without it, but we don't. When we first rehearsed in LH2 we didn't use it, but once we got into the Hydro for dress rehearsals it made sense to try it then. Of course, the Hydro has its own acoustic problems and although they have made improvements, it's still pretty bad - the long sub

verb in particular - but the side reflections have been calmed down. Obviously I'm not out in the house during the show, but with us doing residencies in just about every venue we've played so far, I've had the opportunity to listen to the system from many vantage points, and I've experienced that uniform tonality everywhere I've listened."

What about the show itself? "Out front I'm still using a DiGiCo SD7, and on the recommendation of Skan I'm trying the Bricasti reverb' . . . The way I'm using it, the Bricasti sounds just like a Lexicon 480, but so it should as I'm using the same programmes. I've yet to explore further. I have had an SD7 since the George Michael Symphonica tour (see LSi December 2011) and used one on the last Take That tour, Progress. We are carrying a spare SD7 as Steve Lutley is using one for monitors as well, but it's just collecting dust. I'm using a lot of the on-board dynamics and effects because of that busy cueing between songs - it keeps my attention focussed on the desk - but the Bricasti has the edge with the reverb. I decided against too much off-board, I did consider a classic CLA Compressor but they can add to the background so I stuck with what's in the desk. It's better in some ways. That said, I do have the XTA SIDD de-esser with just a single of notch outs for Gary's voice."

"Almost the entire performing area is in front of the PA, so I do spend the night on all three vocalists' mic channels, but they know the problems and are very helpful in the way they

sing and manage the mics when not using them. So generally I just watch and pull the fader when needed, especially on the harmonies when things can get a bit hot. The bike sequence when they're flying and up in the more powerful regions of the PA where it's throwing further is problematic, but Tony has notched the relevant cabinets for me at the critical frequencies. It's always a surprise to me how few are needed - two or three notch-outs is enough. Although there are other vocal mics out there vying for attention, we've stuck with the hand-held Sennheiser with the dynamic capsule that we've been using for a few years now. The fact is, we've had good results in the past, so we stay with it."

The band are placed more at the heart of the stage than they were on the Progress tour. "The band are excellent and I think the fact this stage design has them more involved in being part of the stage show helps their performance . . . the great thing is they can all see one another. All BV comes from the band, Mike, Milton and Lee, and despite the name there are no voices from the choir stalls. The BVs are very important when the boys venture out, they enable me to bring vocal pressure when I'm having to rein in the main vocal. It's a very busy show as far as cue management is concerned but at least there are very few tracks to manage, just the claps for the Queen cover, and some thunder effects for The Flood. Musically, everything you hear is being played on stage and the band are at the top of their game. It's a real pleasure to mix."



Take That Stage Walkways



## Take That Live 2015

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What of the new supplier? "This is my first proper tour with Skan, though of course I've encountered them before. They do have a great attention to detail which I like, and they are ready to spend if you really need something. Not that there was ever anything wrong with Capital who used to do the Take That tours. I used the MLA in Hyde Park and had good results, it was just that Chris Vaughan has been using Skan a lot for the other acts he looks after - Muse and Biffy Clyro in particular. And of course I'm well used to using d&b J- and V-Series through my work with George Michael. It's a system I like very much, so it's been a comfortable transition. The refinement of having ArrayProcessing is the icing on the cake."

#### Tony Smith: ArrayProcessing

Tony Smith is a regular presence on Coldplay tours and had already spent time with d&b familiarising himself with the operation of ArrayProcessing (AP). "At the moment it's hard to judge just what impact AP is having, but after using it for over 20 shows I think it will be hard to switch back to the old settings, and it's certainly no chore to apply. Once you get a handle on AP it really is intuitive, with great tonality throughout the room without impinging on the workflow of your day.

"Getting the room dimensions are even more crucial - AP calculation resolution is in 20cm intervals, barely eight inches. All the CAD drawings we have of the venues are to that level of accuracy. That said, I do check the fundamental measurements when we first come in, four or five key points is all that's needed to make me feel happy. The only thing I would say is if you're dealing with areas needing specific reduction, then you need to be really precise, otherwise you have punters above and below who will have a very poor listening experience. This also applies for the AP calculations throughout the entire room. But the fact you can significantly reduce the amount of energy directed toward highly reflective surfaces and with such accuracy is a real boon."

#### Monitors

Steve Lutley is flying solo on monitors, having had support mixer Simon Hodge to take care of the band on the last tour while Lutley focussed

on the core four voices plus Robbie Williams, any of whom could at any time be more than half a football pitch away. "So this is a return to situation normal for me," he says. "I've done four or five Take That tours prior to Progress where it was just me on monitors."

His assistant Glen Fuller looks after the stage. Fuller told me he's been wearing a pedometer and finds he covers around 20km a day. While it's not a football pitch it's not far off and, awkwardly for Lutley, he is situated beneath the stage. Even were he not, there is realistically no position above ground where he could see the band and the 'boys' all of the time. "Yes, I do have a camera system but, to be honest, it's not a lot of use. I took all my visual cues from rehearsals and made extensive notes. In my head, whatever song, I always know where they are. For the cast, that's the guests in the choir stalls, and for the dancers, they all get an IEM feed."

The cast are very much part of the show, and naturally some cue information is essential. "Basically it's the house feed. I send Gary's FOH mix to them all, plus any Pro Tools from me, though mainly that's cue information/ directions for them linked to the time-code."

The IEM count for a touring band is unnaturally high; add in the radio mics and ancillaries and

the RF issues are significant. Skan founder Chris Fitch takes personal charge of the planning for such large systems. "RF is one of my specialisms," says Fitch. "The RF envelope is roughly 25m x 55m x 6m with up to 40 simultaneous transmitters - not a huge quantity of RF devices but quite enough to go badly wrong in the wrong hands." (A PDF of the RF plan is available with the online version of this article).

Fitch continues: "All RF licensing is coordinated by me as a desk-top exercise. Although we have an experienced RF technician on the tour in crew chief Liam Tucker, we find this is better approached in advance. In general, we've used four 8MHz TV channels. Two for artist and band IEMs; one for openers and cast IEMs; and one for all RF mics. We also use the shared UK spectrum for less critical applications, i.e. shout mic and acoustic measurements."

Lutley explains how he manages the show: "The band is very good and once monitor levels are set they require little, if anything, extra from me. Although I don't spend as much time listening to their mixes as I do the boys', if they need anything they each have a 'secret' mic injected direct into my solo matrix so I can hear them no matter what I'm listening to at the time. The band are all on in-ears, all Sennheiser; the only exception is Milton who uses d&b M4 wedges. For the size they're excellent and he's very happy. The hand-helds are all Sennheiser too, 5235 with the regular dynamic capsule. When they're out in front of the PA for the bicycle sequence and when they're on the B Stage for Could it be Magic the notched filter that Tony applied to the PA is very helpful, but it's still a strange environment for monitoring. Instead of a strict monitor mix I have to listen to what spill is coming down Gary's mic and then push it in my mix so that Gary doesn't hear what's in the PA and get his timing confused. Because of my focus on the three lead voices I do neglect the band in some ways, but they are good and it's no different for them when we do Gary Barlow's solo tours - they're used to it. There's nothing different from the last tour except how we mic the Toms, which have Sennheiser 421s on them. We did it for Jeff Lynne in Hyde Park with Gary last summer. It was Lynne's thing and Gary and I both liked the results. The mic is a bit of a faff -







we have to tape them to the clips and you do need to use a boom arm, but the result is well worth the hassle."

Is the lack of direct sight the sole big issue? "This is a show of high concentration for me," says Lutley. "I have to think about what I'm doing on the desk and at the same time hold an image in my mind of where they will be; that's one reason why I refer so little to the camera monitors; they're almost a distraction."

#### Production

"Yes it's true, I am closing The Production Office down," began Chris Vaughan. "After 12 years of running two or three projects simultaneously it was time to slow down. Taking overall control of the financial/creative and production for tours worked well and has allowed us to produce some amazing shows. It's a service which I will continue to offer my clients, but I just wanted to step back and enjoy life a little more. The work has been so intense in recent years, I found myself never taking a break." Who would begrudge Vaughan the opportunity for a little more quality time?

He's also made the change as some strong headwinds have affected a couple of his usual vendors, not least Neg Earth. "To be honest, from where I sit you just wouldn't know they had experienced a catastrophic fire just as our tour began," says Vaughan, echoing Routledge (above) "It's just remarkable, it really demonstrates what a strong, robust organisation Dave Ridgway has built."

So what of the video element? "This is a prestige production and like most production managers, I like to do business with people I know and trust. In my experience that closeness ends up meaning you get better service. I know Alex Leinster and any team he has assembled in the past has always been able to deliver. I had no doubts that he could do the same this time with his new company Video Design. He has the same high values for presentation that he's always demonstrated and

the packaging of the systems he has provided is perfect. Put it this way: video is a big part of this presentation and as you know we have 32 trucks on the road, yet our last show in Sheffield we loaded out in under three and hours."

Are other changes to the customary Take That touring package? "Yes, Skan is a change for Take That, although we've worked together for a long time, most notably on Muse tours. Again, the key components are crew and the way their equipment is packaged. When I first took over Muse all those years ago I explained to Paddy Hocken, their crew chief at the time, that packaging was critical for an efficient tour. It also means crews don't exhaust themselves with badly put together systems. The benefit is more attention and energy for the skills we value, the ability to produce great sound for the whole audience. In Paddy's case, when he presented the ideas to Chris Fitch at Skan they took the concept to the extreme, and have continued to always closely examine what each tour needs, and adapt their systems to suit. Skan is a very slick operation. It was the last couple of Gary Barlow tours that really sealed the deal for them on this tour. It's the relationship, knowing that if I have to pick up the phone in the middle of the night from the US my problem will be dealt with quickly and efficiently. It's the same with Dave Ridgway at Neg Earth."

What of marshalling two companies to provide the enormous set? "Set building is between Brilliant Stages and Total Fabrications: Brilliant provides the rolling stage, but the bulk of the work is a combination of the two. There was simply so much to do with this production in such a truncated build period that no single company could deliver the whole thing. Both delivered and did a really good job. There is an awful lot of detail in this stage. The choir stalls for the volunteer cast, built by Total, is a good example - and the walkway - they just get it. Parts of the walkway are big carts and other walkway sections fit within those carts for transport - lights and décor, the whole thing is self-contained. The walkway and B Stage is gone 15 minutes after the show closes, they're

chasing the seating off the arena floor; it's quite something to see. In fact, for me, the biggest problem is getting the trucks in fast enough. Apart from that, the only pre-rig we have is the grid for the 3D flying, 28 motors in all."

"Everything else is universal and goes in on the day. I don't want to sound ballsey about it, but with just about the whole production as universal, that's a big saving in terms of production costs. Yes, I was a little anxious about the 'out' when we set-up in Glasgow. Phil [Broad, tech and rigging supervisor] Richard [Wearing, stage manager and king of load out] and myself drew up the equipment flow, and then refined those plans for each venue. You never really know until you get into each venue. But that said, this is the most relaxed and painless tour I've done in a while. Add another trailer full of PA and we could play stadiums."

#### Set Build

This is a two-part set build, Brilliant providing forestage piano lift, main stage, band stage and 'wiggly' stairs, and service lift, their most challenging piece the nine section box lifts. Total Fabrications Ltd (TFL) made the choir stalls, the huge circular walkway, screen surrounds, the B Stage and the flying sun/acrobatic ball. Arguably their most challenging piece is the lighting pylons. Although these two companies both provided elements for the previous Progress tour, the inter-connectedness of the listed elements made this a much more intimate affair.

Tony Bower, boss of Brilliant Stages, told me: "We designed the box lifts as production wanted. Although they were built almost as a prototype we didn't actually have time to build a prototype and test our design. Of course, we've worked with box-lifts, chain drives and hydraulics before, so with that knowledge we just went for it and it worked really well. What did come out of that experience was our first cooperative with LiteStructures, of which we are now a part, and their Automation department. They did a stunning job. Where we inter-connected with TFL was seamless - we exchanged CAD



drawings, the flow of information was good, and the job got done without any drama."

Mervyn Thomas at TFL explained the division of labour: "When we all sat down with Chris Vaughan at the beginning it all fell into place; both Total Fabs and Brilliant got to play to our strengths. There were elements Brilliant didn't want to do, and bits we didn't, so independently the division of labour fell right into place."

Nigel Tranter, who project managed the set build for TFL, explained the challenges of the pylons: "The pylons structurally were quite tricky. Essentially truss-like structures, they're tapered on all four faces (irregularly) to almost nothing, so making them in sections for touring meant connection points were tricky to determine. Also, with fittings for over 60 lights on each one, we had to be careful about the position of the web struts so they didn't interfere with the lights. The off-stage pylons were even worse - canted off at 30°, they required some difficult rigging as they were free at the bottom, just suspended from the top. Naturally, they would incline to hang vertically, so a three-point rolling bridle had to be carefully calculated to get them in the correct attitude."

### 3D Flying

"I designed the grid structure from which we suspend the flying system," began Phil Broad, head of technical and rigging for Chris Vaughan Productions. "It's supplied by Gavin Weatherall at The Wire Rig Company. Four winches, floor mounted at each distant corner of the performance area, it runs wires up and around a series of diverter pulleys to move loads around in 3D space. From my perspective, knowing the parameters of what we wanted to achieve, the grid effectively sets the level for everything else. It also meant repositioning a few things - the curtain has to be outside to keep clear of the wires, for example."

"It also meant a lot of more detailed advance work than we might normally do. I had to visit every venue and the important thing was not to lose trim, the need for 17.5m was an absolute for the optimum performance, so making sure the grid didn't fall beneath any catwalks at this trim was important. That said, we always knew Birmingham was going to be a compromise. There's no escaping the lowness of the roof steel, but we devised a plan to put in the system without the grid, attaching the pulley system direct to the roof steel. That made the rigging of it a bit slower but we had the time."

"However, those pulleys are under considerable forces in lateral directions, especially as we still only achieved 12.4m at Birmingham, and they absolutely cannot move. But it still looked good enough to be worthwhile. The bike sequence is the big one, the contraption itself weighs in around 450kg; add the weight of the boys and it's between 600 and 700 according to Gareth

Williams who operates it. We test that every day, fully loaded."

Gareth Williams of Motion Control explains 3D flying: "Gavin Weatherall comes from the early days of Unusual Rigging and has done a lot of good work with motion control. The Wire Rig Co is his in partnership with Ian Speed from Camera Revolution. The winch system was built for them by Stage One and is controlled by Q-Motion. It's a very nice system and with all the work you'll have seen it do on Commonwealth and Olympics Ceremonies it's as bullet-proof as they come. So even though I only arrived at the very tail of the rehearsals, the fact I was totally familiar with it, and that it has simple 'fly and record' programming put us in good shape very quickly."



Yes it was a bit hairy in Birmingham - the bridles being a lot shallower is always a concern when you've been working with a consistent trim and grid at all other venues, but it worked well. With half the tour left we've already gone through every permutation, so it's in the bag."

### Video

Video Design founder Alex Leinster was in attendance at Manchester. "Naturally, with a new company almost everything we're providing is new kit: cameras, d3 video servers, Karerra switchers, and all packaged for speed and efficiency as Chris Vaughan likes it. The Winvision 9mm, 220sq.m of it, is sourced from a big dry-hire provider, but we test and calibrate all equipment before it goes out anyway. At a personal level I've been involved in so many projects with Chris in the last few years. As well as Take That I've serviced the Gary Barlow solo tours, Muse and Biffy Clyro, so our working relationship is well established. Personally, I think the consolidation that has recently taken place in video for the live event and entertainment is brilliant and I'm

extremely grateful for the show of confidence from Chris and several other customers."

The PPU is situated backstage right, with the main control area for video processing beneath stage centre. Video Design also provides a large number of projectors, all Panasonic, for up to six IMAG screens depending on venue size (four here at Manchester). "We have others projectors that provide the image for interactive video segments upstage centre," continued Leinster. "A projector rises on a piano lift for that segment, and one overhead for a sequence down on the B stage. The interactive system is by Frieder Weiss, linked to IR detection for movement there is a small amount of tolerance for variation in the interactive system. The actual content used is quite stylised and the end result is a strong effect."

"The distances involved in getting video to the B Stage are great, so we've also invested in a high-speed fibre system using technical grade fibre. We developed this system ourselves and are very pleased with the result - the data flow is immense. The shadow work on the white gauze drawn around the stage was originally to be done with a light source, but nothing was immediately available from a single source to the required brightness - a role our projector with its wide angle lens was ideally suited to."

"As it transpired the quality of light was to Kim's delight and it being a projector allowed him the added bonus of inserting some video generated vignettes within the shadow sequence which really enhanced the end result. It's a very playful sequence and simply realised, which makes it all the more effective. Like so much with Kim, it's important that as much of the audience as possible gets to experience these things, so director Matt Askem relays the sequence onto the IMAG screens for the audience sat in the 270° seats."

### Content

Richard Shipman, who manages video content for the show, has often featured in LSI, but this show is manifestly different, with the driving imperative of a finely-tuned and massively coherent visual presentation. Does that increase the pressure on content management? "Running the show is still driven from time-code, so in practical terms, not really. But it does mean it was much harder in rehearsals than it might normally be. That month spent in rehearsals was well worth the effort; unlike other shows where you get creative creep - with requests to change things here and there - with this show it had to be nailed in rehearsal. The content is all provided by Tom at North House Films and he's done a terrific job."

Shipman tends to underplay his role, but if you see the show you can see how tight the timing is between content, stage moves, and live action. And it is a thing of beauty.

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