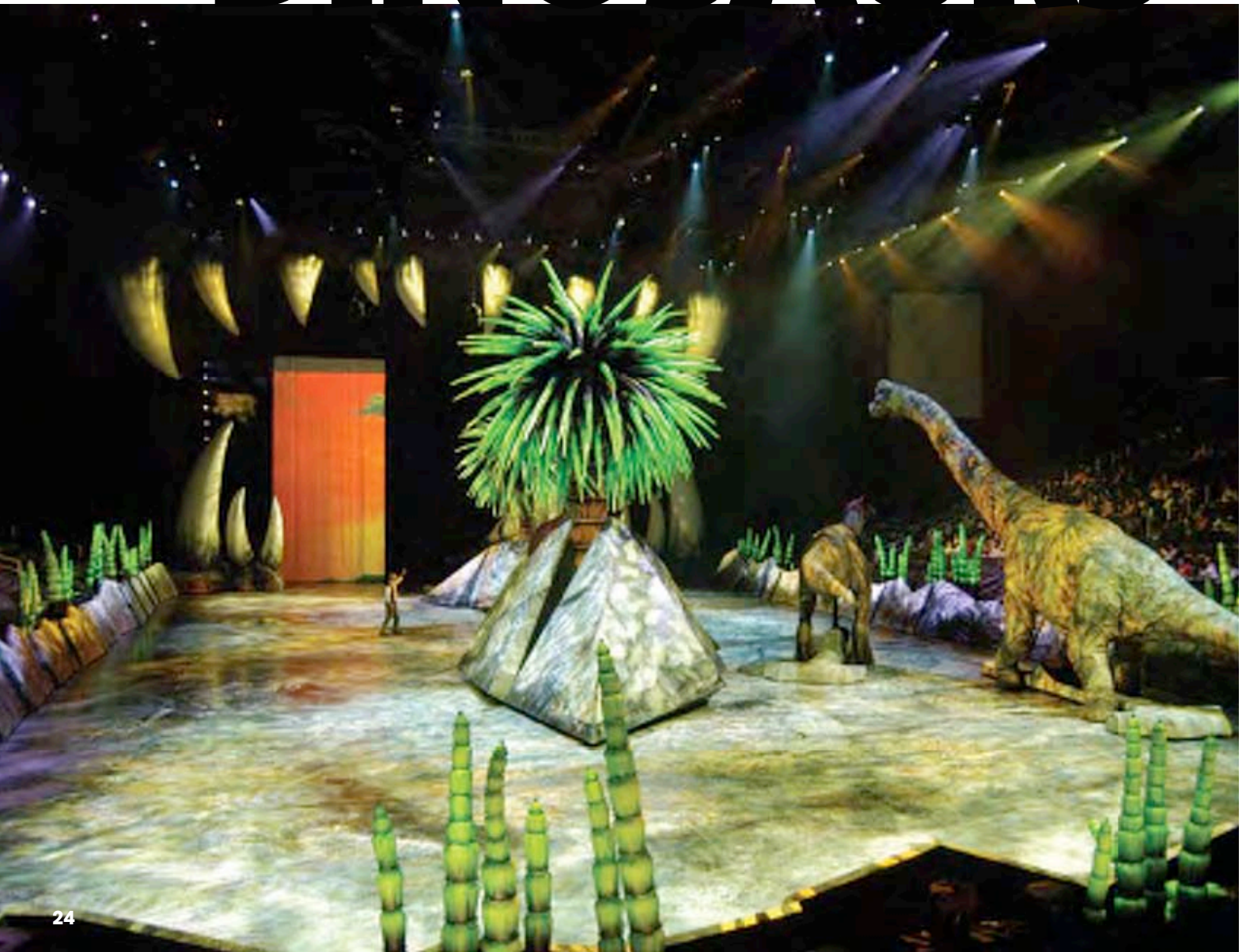


pictured right: **Baby T-Rex stands before Mother T-Rex.**  
"Baby T" is operated by lead suite performer,  
Harley Durst. photos by Michael A. Beck



photo by michael a. beck

# WALKING WITH DINOSAURS



# YOU JUST CAN'T BELIEVE THIS PRODUCTION!

by MICHAEL A. BECK

If you have been in the production business for many years, it is easy to get a little jaded and think you've seen it all. But one look at Walking with Dinosaurs and you are brought face to face with the old saying, "You ain't seen nothing yet."



Walking into the show you have no idea what to expect. Indeed, one of the greatest challenges that promoters of the show face is marketing because the production is so hard to describe. In order to discuss the technical aspect of this show, one has to first describe the show itself.

The whole idea is that there is the paleontologist who walks the audience through some 190 million years of time when the dinosaurs ruled the earth, beginning with the split of Pangaea (one massive continent). The concept is to show the various prehistoric periods of the earth as animal and plant life came to be.

In the beginning (as it were) *Walking with Dinosaurs* was an animated BBC production. Then came the idea to bring it to life and take it on the road. Back off and think about that for a moment. We're talking about taking life-sized animatronic dinosaurs!

Australian special effects designer Sonny Tilders is one of the primary players in the development of the "puppets" (many of which would be larger than an African elephant). He explained how it began, "The first idea was to wrap the creature around a skeleton of existing technology such as a boom lift. The problem with that is that a boom lift is designed to move to a fixed position, hold fast and move to another position. It's not meant to have the fluid motion of an actual living creature."

What became instantly apparent was that the dinosaurs would have to be built on a custom designed hydraulic platform from the ground up.

The first dinosaur to become operational was *Torosaurus* and those who were there speak of its first steps as if seeing a child come to life. It's important to note that these are the largest animatronic creatures ever built. They are full-scale dinosaurs.

There were many factors to be considered. Of course, the most being reality. These creatures would be performing within 20 feet of the audience. *Brachiosaurus* stood 45 feet tall and measured some 70 feet in length. It had 18 axis of the movement that had to be controlled throughout its neck, tail and head.

These movements had to take place smoothly, gently, even subtly. And most of all, had to look like a dinosaur. Muscle tone was achieved through the use of inflatable bladders and beanbags. Once it was



determined how the inside of the animal would be constructed and functioned, it was time to look at the outside.

The skin was critical not only because of how it would look and perform, but because of how much it would weigh. The first thought was latex. But the skeletons couldn't have held up to the weight in a static pose much less in motion. The final answer wound up being spandex with latex texturing.

The skin requires as much attention as any other part of the system. One more by-product of the fact that none of this had ever been done on this scale was that there was no idea how the skin would hold up.

As the skin and bones were being developed, there was also neurology to be considered—how to take a very realistic model of *T-Rex* and bring it to life. After all, the show is called ***Walking With Dinosaurs***.

Each dinosaur took three people to actually come alive. The actual walking was done through the use of a very small cart directly under the creature. The dinosaur was balanced in an upright post that came out of the car. The car controlled the actual walking. Where it went during the show was the responsibility



pictured left: **The colorful inflatable flora appears with the look of time lapsed video and adds great life to the show. photos by Michael A. Beck**

On the occasion when *Mobile Production Monthly* showed up to catch the show, the production experienced its first serious breakdown of the American leg. This is important to note because the dinosaurs were all prototypes. By the time the show reached Atlanta, it had covered the entire country without a major hitch. So, while this mid-show breakdown was catastrophic in that it stopped the show, it took the crew to a place where it had only been one other time when a similar situation occurred in Australia.

There is a part of the show when two 'Torosaurus' were performing and the neck of one of them broke. The show was stopped and the creature was helped off the stage to applause as if it were an injured athlete being helped from the field.

Here's where it got interesting. Once Torosaurus got off the stage, there was a sizable delay. The real problem was that these two creatures had specific roles to play in this segment of the show. The one that had just left was actually supposed to be on stage after the other one left. Because the

of the driver who sat in the very tight enclosure.

The feet of the dinosaur were connected to the car via linkage to create walk-cycle so that the motion of the feet was directly proportional to the revolution of the wheels. This was, of course, calibrated to be proportional to the size of the particular animal that was being driven.

In the larger dinosaurs, there were also speakers in the cars to aid in keeping the sounds of the dinosaur localized. More on audio later.

The rest of the movement was controlled by the "Voodoo" operators. These were the puppeteers. There were two per animal. The puppeteers controlled head and neck movements as well as tail, eye and mouth movements. That was all done, obviously, via UHF radio frequency from whatever balcony could be found in the arena where the puppeteers were.

While there is an actual actor in the show who plays the role of Huxley the paleontologist, the life and personality of all of the other characters of the show are given to them by the puppeteers.

show is so tightly scripted, the Voodoo operators had to actually switch software from one station to another in order to be able to improvise long enough for the next part of the show to take over.

This was the first time the team had ever dealt with this kind of issue, yet the protocol was tightly laid out in advance along with plans B, C, D and more if needed.

There were also smaller creatures (Liliensternus, Utahraptors and Baby T-Rex) that moved on their own power without the aid of a car underneath them or the remote puppeteer. That is to say that they had a person inside of them known as a suite performer. The suite operator performed every function of these creatures. The suite weight was roughly 90 pounds.

There were several times during the production when the dinosaurs' heads and tails would whip violently from side to side or up and down. Lead suit performer, Harley Durst spoke to us



**Lead Suit Performer/  
Baby T-Rex  
Harley Durst**



pictured above: Mother and baby brachiosaurus stand up to 50 feet high and must be lit from head to toe anywhere they go.

left: Mother Brachiosaurus' driver in his car shows the true size of the dinosaur. photos by Michael A. Beck

about that, “It took a little doing learning how to work with the suite rather than against it. There’s a lot going on in there and it all has to be done in a way that creates fluid movement.”

The first try at staffing the suite performer positions was aimed at finding puppeteers to fill the roles. Then there was kinesiology of the suite, and production managed to make it look smooth and realistic. Now there was the another part of the equation. This was the raptors—among the fastest animals of their time. They had to move with explosive speed. This took immense core strength. So the staff went in another direction.

They started looking at physical performers such as acrobats and (in the case of Durst) stunt performers who could be taught to run the suites.

As is the case with any touring production, people come and go. As new suite performers, car drivers, or Voodoo puppeteers come into the show, they are run through the paces of learning the routine. The nightmare of these huge creatures out on the floor running into one another is something no one wants to even think about, so the process starts at the most basic level.

Performers gather around a scale model of the floor with models of the dinosaurs and move them around the floor by hand until they feel comfortable—then they hop and go for a spin.

There has been frequent mention of the stage or floor of this show. In the case of this show, the stage deserves much more mention than passing reference. The show took up 20,000 feet of the arena floor. The first question that arises is why have a stage in the first place?

We spoke to Adam Davis of Tait Towers who explained, “The problem to be solved was that the dinosaurs weigh tons and all that weight is positioned on three small, extremely heavy duty casters. So if we were to let these things run over any surface that was presented, they would have punched right through.”

The challenge became to come up with a surface that could expand and flex up to two inches and take the extreme point load that would be imposed on it. It took over 150 tries to come up with the solution. The answer was a 5 x 5 foot panel that locked together seamlessly and distributed the load without coming apart.

Each panel was made of a custom designed plywood core sandwiched in between layers of specially designed fiberglass. This was banded around the outside with a custom designed aluminum extrusion that allowed the floor to flex and undulate under the specified loads.

The other issue was speed. The entire set was

pictured right: **Baby T-Rex stands before Mother T-Rex. "Baby T" is operated by lead suite performer, Harley Durst. photos by Michael A. Beck**

painted in grey scale, which allowed the lighting to be more effective. The floor was obviously a part of that design. Given that the floor had a specific paint scheme, the panels couldn't go together at random. Davis spoke to that matter as well, "That was a big issue. How do you deploy 800 panels over 20,000 square feet in one hour knowing that every panel has a specific place in the floor? It was all about choreography."

It all becomes about how the panels went into the set carts the very first time at the Tait shop. From there on in it was all a matter of following directions.

But wait, there's more about Tait's involvement. The outer edge of the floor was a barrier of panels set on end to give elevation to the look while visually separating the floor from the audience. Tait also created these panels. These panels didn't have to lock together as did the floor sections. They pretty much leaned into position. They were made of hard coated polyurethane foam. Davis explained that as well, "This stuff is new for us. It's very lightweight and very tough. You could take the claws of a hammer to it as hard as you can and not leave a mark."

Tait Towers also designed the carts that the dinosaurs traveled on. In a show of this kind, the phrase "some assembly required" is not something anyone wants to hear. Therefore, it was imperative to devise a way to travel the dinosaurs with as little dismantling as possible.

Thus the 40-foot set cart. And while Production Director Jake Berry didn't see it as anything as complicated as rocket science, he did say that there were some serious concerns, "Bigger than the issue of building a cart that can carry a 40-foot long dinosaur on it was the matter of coming up with a way of getting the dinosaur up on to the cart. And once you get it up there, you want to be sure that it's not going to tip over when it gets there. So balance was an issue as well".



**Production Director Jake Berry**

The set carts were a matter to be considered by the venues as well. After all, where does one store ten carts anywhere from 25 to 40 feet long?

The set was not just comprised of decking and fascia. As the timeline of the show moved along it went through periods of time when vegetation showed up on the Earth. In some cases it was just greenery. At other times it was flowers of all kinds.

This had to happen quickly in order to keep up with the script. The design choice for this was utterly in-



pictured above: **Torosaurus being loaded into its truck. photos by Michael A. Beck**



pictured above: **Dino drivers and Voodoo operators work out blocking and choreography with a new driver with scale models. photos by Michael A. Beck**

genious. Inflatables. On the outer perimeter of the stage, outside of the fascia panels, were large boxes with holes on the top and fans inside them. The plants were inside the boxes and were inside out.

So when they were deployed, they grew out of themselves going at slightly random speeds giving the look of time-lapsed photography.

Among the first things that happen in the show is the split of Pangea. The Pangea continent is made up

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## vendors

Dinosaurs - Creature Technologies  
Set Construction - Tait Towers  
Rigging - Five Points Rigging  
Audio - Clair Brothers Audio  
Video - Screenworks  
Trucking - Upstaging Trucking  
Lighting - Upstaging Lighting  
Travel - Travel Tech Travel  
Production Support - SOS Services  
Radios - AAA Communications  
Wireless - Wireless First  
Internet Services - Casbah  
Accounting/ Production Services - Fader Higher  
Tour Promoter - Immersion Edutainment  
Tour Promoter - Arena Networks  
Passes - Cube Passes  
Power - CAT Entertainment

PICTURED ON OPPOSITE PAGE

Top to bottom, left to right

*left* Richard Everit – Lead Driver,  
Theresa Everit – Driver  
*right* Steven Richards – Lighting  
Tech, George Reeves – Lighting  
Tech, Richard Allison – Lighting  
Tech, Jonny Tosarello – Lighting  
/ Crew Chief Board Op, Michael  
Kennedy – Lighting Tech

*left* Dino Engineer, Larry  
Aeschlimann works on T-Rex  
*right* Daniell Flood, Edward  
Boyle, Gavin Sainsbury, Terry  
Ryan, Brian Parker, Matt McCoy,  
Graeme Haddon and Nigel  
Hodgson

*left Back:* Lindsey Haney – Video  
Director, Dave Moss – Engineer,  
*Front:* Eric Lee – Video Technician  
*right* Dino drivers, engineers  
& controls: Cameron Malacari,  
Ryan Floyd, Michael Hamilton,  
Ash Cole, Dennis Crespo, Brett  
Bennett, David Fulcher, Roger  
Quinte, Casey

*left* Maeve Laverty driving one of  
the Pangaea pieces during the  
show.

*right* Ash Cole tending to the skin  
of one of the dinosaurs.

*left* Cameron Wenn - Resident  
Director, Katy Pitney – Stage Mgr,  
Mundi Ross - Assistant Stage  
Mgr, Lucy Kennedy - Deputy  
Stage Mgr

*right* Riggers: Todd Mauger,  
Robert Slepicka

PICTURED LEFT

*top* Conrad Hendricks - Audio  
Director, Gene Phillips - System  
Engineer, Josh Flower - System/  
RF Engineer, Rudy Paniagua  
- System Tech, Lisa Mishkin -  
System Tech

*middle* Carpenters: Mike  
Howson - Head Carpenter, Tas  
Dimitrikakis - Carpenter, Andrew  
Johnstone – Carpenter, Maeve  
Laverty – Carpenter, Dan Gurchik  
- Carpenter

*bottom* Carter Baynham and Amy  
Meyers our Automation Crew



## crew list

Executive Director - Bruce Mactaggart  
 General Manager IEA - David J E Thomas  
 Production Director - Jake Berry  
 Production Stage Mgrs - Jon Boss, George Reeves  
 Tour Coordinators - Dori Venza, Kari Stehens  
 Business Mgr- Mike Klein  
 Resident Director - Cameron Wenn  
 Company Mgr - Tanya Miles  
 Set and Video Design - Peter Englund  
 Lighting Design - John Raymond  
 Show Director - Scott Faris

### Tour Crew

Stage Mgr - Pamela Kekos  
 Deputy Stage Mgr - Lucy Kennedy  
 Assistant Stage Mgr - Mundi Ross  
 Carpenters - Mike Howson, Maeve Laverty, Andrew Johnstone, Hajime Minatodani, Dan Gurchik, Martin Capiraso, Brian Blumeyer, John "Pinky" Hurd  
 Head of Creatures - Dennis Crespo  
 Drivers - Angela Dufty, Michael Hamilton, Brett Bennett, Michael Olson, Roger Quinte, Ryan Floyd, Lear McClellan, Madison Harris  
 Skins / Suit Dresser - Rebecca Sloan  
 Skins - Shauni Wall, Brittany Kiefer  
 Engineers - Morgan Durst, Larry Aeschlimann, David Fulcher  
 Controls 1 - Nigel Hodgson  
 Controls 2 / Swing Driver - Casey Ross  
 Automation - Carter Baynham, Christian Hindley  
 Associate Sound Designer - Arnie Hernandez  
 Sound - Gene Phillips, Rudy Paniagua, Lisa Mishkin  
 Comms - Josh Flower, Atiba Riley  
 Lighting / Crew Chief Board Op - Jonny Toasello  
 Lighting - Steven Richards, Michael Kennedy, Richard Allison, Christopher Ubinger  
 Riggers - Todd Mauger, Robert Slepicka  
 AV - Lindsey Haney, Eric Lee, Dave Moss  
 Truck Drivers - Richard Everit, Theresa Everit, John Ferris, Wayne Cameron, Les King, Selwin Champion, Lon Simpson, Gary Adair, Carl Iverson, Tim Kutzler

### Cast/Puppeteers

Suit Performer - Chad Colton  
 Lead Voodoo Puppeteer - Ed Boyle  
 Huxley - Jon Bliss Warren, Robert James  
 Lead Voodoo Puppeteer - Gavin Sainsbury, Graeme Haddon  
 Lead Suit Performer - Harley Durst  
 Suit Performer - Jonathan MacMillan, Justin Terry, David Ely, William Figueroa, William Landsman  
 Swing Puppeteer - Matthew McCoy  
 Auxiliary Voodoo Puppeteer - Dan Flood, Brian Parker, Terry Ryan

