


# Beyond the Darkside

*The ultimate Pink Floyd Spectacular*



"From a Wish to the Moon & Beyond Tour"  
**Technical Specifications**

**2009**

 **SENNHEISER**

**Martin**  
Professional A/S

**at**  
PROFESSIONAL

# BTDS Technical - Quick Reference Guide

## 1. General Show Information:

- [Delivery](#) Page 1.
- [Storage](#)
- [Bump In / Out](#)
- [Stage Requirements / Rigging](#)
- [Power Requirements](#)
- [Laser Effects](#) Page 2.
- [General information](#)
- [Technical theatre staff required](#)
- [Show Performance times](#)
- [Show Personnel](#)
- [BTDS Show set up schedule](#) Page 3.

## 2. Sound equipment:

- [Breakdown of F.O.H equipment](#) Page 4.
- [Monitor systems, Microphones etc](#) Page 5.
- [Speaker Positions and F.O.H Diagram](#) Page 6.
- [Monitors and Riser positions Diagram](#) Page 7.

## 3. Lighting Equipment:

- [Fixtures & Fittings](#) Page 8.
- [Trussing Systems Specifications](#) Page 10.
- [Trussing Diagrams](#) Page 13.

## 4. Stage equipment: Page 15.

## 5. From A Wish to the Moon & Beyond Set List: Page 16.

## 6. Hits of the decades & Animals Set List: Page 17.

## 7. Best of the Wall & Some Set List: Page 18.

## 8. BTDS Safety Procedures and data sheets:

- [Laser Set Up Procedures](#) Page 19.
- [Pyrotechnics Management Plan](#)
- [Pyrotechnics safety distance Diagram](#) Page 19.
- [Jem Pro Haze Fluid Safety Data sheets](#) Page 20.
- [Jem Pro Smoke Safety Data sheets](#) Page 26.
- [Pyrotechnics Certificate of Conformity](#) Page 30.
- [Pyrotechnics Testing certificate](#) Page 31.

## 8. Inflatable Pig sizes and dimensions: Page 33.

# Beyond The Darkside. ®

Management: DST Office +61 (07 3372 3932.  
Show Producer: Kevin Hunt +61 (0)413 616857.  
Show Director: Athol Sargood +61 (0)422 318360.  
Production Manager: Michael Kitching +61 (0)435108622.  
Transport Logistics:



[management@beyondthedarkside.com](mailto:management@beyondthedarkside.com)  
[www.beyondthedarkside.com](http://www.beyondthedarkside.com)

## Australian Technical details and other information.

**Technical request:** Can the venue please provide a cad drawing of venue in DWG format to the Artists Production manager Michael Kitching [michael@beyondthedarkside.com](mailto:michael@beyondthedarkside.com) one month prior to performance.

### Transport. ANL Transport Logistics (arranged by BTDS)

- Equipment is delivered in the form of 2 x 40' containers on trailers. We can arrange for delivery whichever way the venue loading bay is able to accommodate.
- 1.2 metre high loading dock is required for unloading.
- Enough loading / car park area to manoeuvre 1 x 40' semi trailer/s
- Call Michael Kitching (07) 3373 3932 for any special transport enquiries or difficulties or [michael@beyondthedarkside.com](mailto:michael@beyondthedarkside.com)



**Storage needed:** – Either a Truck or Container is often left at the venue site as storage for the empty flight cases if needed – In some smaller venues with no storage area some of our cases such as the 4.5 Meter Circle cases (x 2) and pod cases (x 2) will need to be stored so a container must be parked close to stage/loading dock doors. Call Michael Kitching 0435 108622 if containers are not able to stay in loading area.

**Load in / out:** - It is extremely important to be notified of any lifting or stairs on load in or out as certain pieces of equipment are as heavy as 100kg and 2 meters long after being taken out of their protective cases.

**4 Loaders** are required for standard loading dock style bump in and out. - (DST will supply).

**6 Loaders** are required for stair / lift bump in and out. - (DST will supply).

Load in and set up can take from 8 to 10 hours depending on venue difficulties and restraints (i.e. small area in which to setup and work with the large amounts of equipment, or difficulties with loading into Venue.)

3 –6 hour pull down and Load out depending on what show setup required – unless venue difficulties.

**Note:** A large amount of high-tech delicate equipment has to be handled.

### Rigging / Stage Requirements: - Australian Theatres / Entertainment Centres.

BTDS will be using it's very own **stand alone trussing system** (All specs on **Page 10**)

**Minimum clear stage area requirements** for Trussing system set up are **18m (w) x 11m (d) x 10m (h).**

**Stage Floor rating** is to be **480kg spread over 5.4m x 4uprights** if tower sections are to be placed on stage (Preferred).

If towers are to be placed on ground next to stage, **stage is to be no higher than 0.9m**

Only very basic duty Technician is required whilst setting up of show, if required.

**Set up must commence 5:00 am**, 14 hours before show time to allow for technical problems.

On site BTDS – Qualified Ticketed Rigger – Brian Loughlin 0412475837.

### Main Power outlets requirements: -

- 1 x 400 amp set of 3 Phase Power lock outlets or mains power board for power lock tails.
- 1 x 32 amp. Wilco 3 Phase outlet. - For Sound / Stage production.

or

- 1 x 32 amp. Wilco 3 Phase outlet. - For Sound / Stage production.
- 1 x 32 amp. Wilco 3 Phase outlet. - For Lighting Pod Hoists and Mirror Ball
- 1 x 32 amp. Wilco 3 Phase outlet. - Pig Dimmers, Pig Lights, House Lights and Work Lights.
- 1 x 63 amp. Wilco 3 Phase outlet. - For Lighting / Lasers.

**Please note:** All equipment is currently electrically tested and tagged.

If power is to be supplied by 3 phase cable extensions, please place 3 phase at upstage prompt

Alternatively – if the above can not be supplied an electrician is required to wire us straight into the mains.

**Laser Effects:** 1 x 10 watt class 4 laser will be used during the show. (Laser procedures Page 19)  
2 x LED - 100mw ILDA laser scanners.

**Pyrotechnics – Queensland Only,** we do not do pyrotechnics in any other state.

Mines and energy dept will be notified of the use of pyrotechnics prior to show  
Local police and Fire authorities should be notified.

Pyrotechnics are to be 2m forward of the Artists Mic stand line with a safety of 3m to Audience (**Page 18**)

A Local fireworks person to the area needs to be supplied – Only if we intend to use pyrotechnics.

This will be stated in Contract. The people we use are organized through [www.rapidaction.com.au](http://www.rapidaction.com.au)

**General show Information: -**

**Staging:** A level solidly constructed and reinforced stage measuring **18 m wide by 11m deep 10m high** (minimum) with wings on both sides, large enough to hold PA speaker system and accommodate a monitor station. The stage should be at least 1.2m high (not to exceed 2m) and must be able to withstand weights between 480kg per square metre and 700kg per square metre. Stage must be free and clear of house equipment.

**Stage risers:** 5 x 2.4 x 1.8m @ 400mm – **These we require from the theatre**

**Smoke effects:** 4 x smoke machines & 2 x hasers for lighting and laser effects throughout the show.

**Pigs:** 6m high 4m wide 3m deep on stage or side of stage.

**Surround Rear Speakers:** a secure space for rear speaker systems is required - sound is done in 5.1 surround sound mode (Page 6). Rear Speaker positions Minimum 3 seats per side (1.4m x1.4m).

**Secure area for F.O.H** Audio and Lighting control equipment and staff. (Area needs to be 2 rows of 8 seats)

Front of house operation position must be between 17 metres and 25 metres from front of stage, an area 6m x 2m in the middle of the auditorium.

**Orchestra Pit** (If theatre has such) is to be raised to 500mm below stage level for wall of Pinspot lighting.

Orchestra Pit seats must not to be sold. This will push the audience back further from the stage giving them a better view of the show. – this will have been requested in initial contract.

**Air-conditioning:** The venue must insure that the venue air-conditioning (especially within the stage area) is to be switched off during the performance; it may be on preshow and during intermission but not during the performance. Air conditioning has a major impact on the BTDS singing performers during the show which badly affects their performance.

**Technical Theatre staffing requirements:** (setup schedule next page).

- **Load in / Set up** - Basic Duty technician (Only 1 person – same person)  
Split shifts if necessary – no overtime please.
- **Show time** - Basic Duty technician
- **Load out** - Basic Duty technician (Only 1 person – same person) Split shifts if necessary – no overtime please

**Show Performance times consist of:**

3 Hours show duration - Short break of 15 minutes in the middle.

**Example:** 8:00 pm - Start - Show Time.  
9:30 pm - Intermission.  
9:45 pm - Start of second show.  
10:30 pm - Encores (up to 30 Minutes)  
11:00 pm - Finish.

**Show personnel consist of the following:**

Band will consist of 9 players.

Crew will consist of 7 people.

4 – 6 Loaders will be required for load in and load out.

(This will be arranged by DST)



## **Beyond The Darkside® - Setup Schedule**

**Set up based on the average 2000 seating theatre.**

**Based on set up with concert ground support trussing System.**

**Note:** The schedule below only applies if we have to set up on the day of the show. Set up the day before will be from 8:00am through to 5:00pm and show day 8:00am through to load out. (This will be arranged with management)

- 4:45 am - Containers / Truck and crew arrive at venue.
- 5:00 am - Containers / Truck is in place at loading dock, doors open unloading begins. Towers are unloaded and all help to erect towers.
- 6:00 am - All equipment unloaded. Containers / Truck locked or removed.
- 8:00 am - Truss system assembled at working height. Circle assembled and rigged. F.O.H. F.O.H Speakers placed into position and strapped down.
- 09:00 am - F.O.H. Mixing position determined. Multi-cores run. Rear speaker stacks in place.
- 11:00 am - Lighting rig flown to height. Monitors and stage equipment rigging begins.
- 12:00 pm - Lunch.
- 12:30 pm - Stage lighting, Monitors and Stage gear rigging continues.
- 2:00 pm - Lighting and Laser focus.
- 3:00 pm - Sound check.
- 4:00 pm - Sound check finishes.
- 4:00 pm to
- 6:00 pm - This time can be used for sorting any problems or maintenance.
- 6:00 pm - Dinner for Band and Crew.
- 7:00 pm - Show Call.
- 7:30 pm - Show begins.
- 9:00 pm - Intermission.
- 9:20 pm - Second half of show.
- 10:30 pm - Show ends.
- 11:05 pm - Break down begins. Stage gear and stage lighting first.
- 11:20 pm - Stage cleared. Stage gear and stage lighting road cases placed on loading dock.
- 12:00 am - Container / Truck in place. Lighting and audio break down in reverse order of going up.
- 2:30 am - Begin loading of containers / Truck.
- 3:00 am to 4:00 am - Containers / Truck doors close – containers / Truck loaded.
- Note the load out time gets to be brought forward by one hour by show night 4 as packing away gets quicker. i.e. 3:00am finished container / Trucks loaded.

# **BTDS Sound equipment breakdown** (All equipment is privately owned & supplied by the show)

**Sound Equipment listed below will suit up to 5000 Capacity Venue.  
80'000 watts 5.1 surround sound system, 10 send in ear monitor system.**

The Artist will supply the audio system which contains surround sound speaker stacks 1.4m x1.4m which will be placed at the discretion of the artist's audio engineer at or near the rear of the venue.

The PA system has a minimum height of 3.5m from the stage floor to the top speaker if the venue has side of stage seating



## **F.O.H. Speaker Cabinets and Amplification: - System runs in surround mode**

**Front - 2 x speaker stacks. Flash/ Flood light type System Left front & Right Front**

- 12 Acoustic Technologies Show Stack cabinets
- 6 Ground Swells double 18" 4000 watt cabinets
- 4 Acoustic Technologies LG07 Stack cabinets (**Centre**)
- 4 Acoustic Digital processors F.O.H
- 6 Acoustic Technologies E3500 watt power amps
- 4 Acoustic Technologies E1500 watt power amps
- 6 Q4 DE6000 watt power amps



**Rear - 2 speakers stacks. Left Rear & Right Rear. (Main Auditorium Only)**

- 4 Acoustic Technologies Show Stack cabinets
- 2 Acoustic Digital processors R.O.H
- 2 Acoustic Technologies E1500 watt power amps
- 2 Acoustic Technologies E2500 watt power amps



## **F.O.H. Consoles:**

- 1 Yamaha DM2000 VCM – 96 channel Digital mixing surround sound console
  
- 1 60 way Multi-core system in built road case. (50 mtrs)



## **F.O.H. Drive rack:**

- 2 18IRU drive / effects rack c/w case
- 4 Behringer ADA 8000 units
- 1 TC Electronics M1 Multi Effects Processor
- 1 TC Electronics D2 Multi Effects Processor



## **Talkback systems**

- 2 Jands TBM Master stations
- 6 Jands TBS Talkback stations
- 2 Beyer DT - 108 Single Muff headset
- 6 Beyer DT - 109 Dual Muff headset

- 7 Sennheiser E945 Series,
  - 6 Sennheiser E914 Series,
  - 3 Sennheiser E906 Series,
  - 13 Sennheiser E904 Series,
  - 2 Sennheiser E901 Series,
  - 2 Sennheiser E905 Series,
  - 4 Sennheiser E845 Series,
  - 1 Sennheiser E608 Series,
  - 1 Sennheiser E602 Series,
  - 1 Sennheiser Ew182 - GS Series,
  - 1 Sennheiser MD441 Series,
  - 2 Sennheiser MD421 Series,
  - 6 Shure SM57 Series,
  - 1 Rode NT1a Series,
- + Other various effects, stands, cables and road cases etc



**Monitor Console:**

- 1 02R/96 - 56 Channel mixing console.
- 2 Behringer ADA 8000 units



**Other Audio:**

- 3 10m – 16 channel multi-cores – cross stage looms Boxes
- 1 Audio Draws Case - Lockable

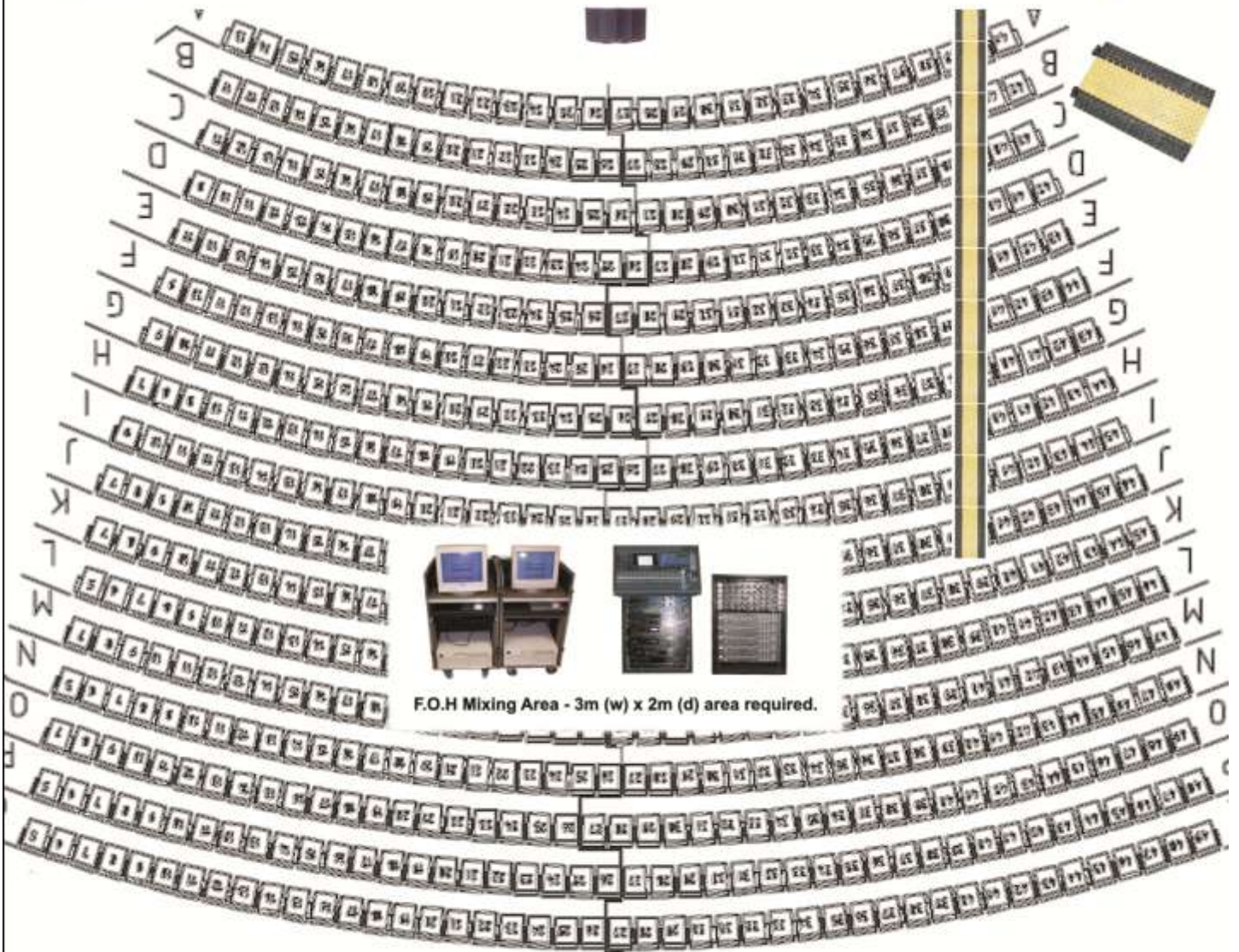
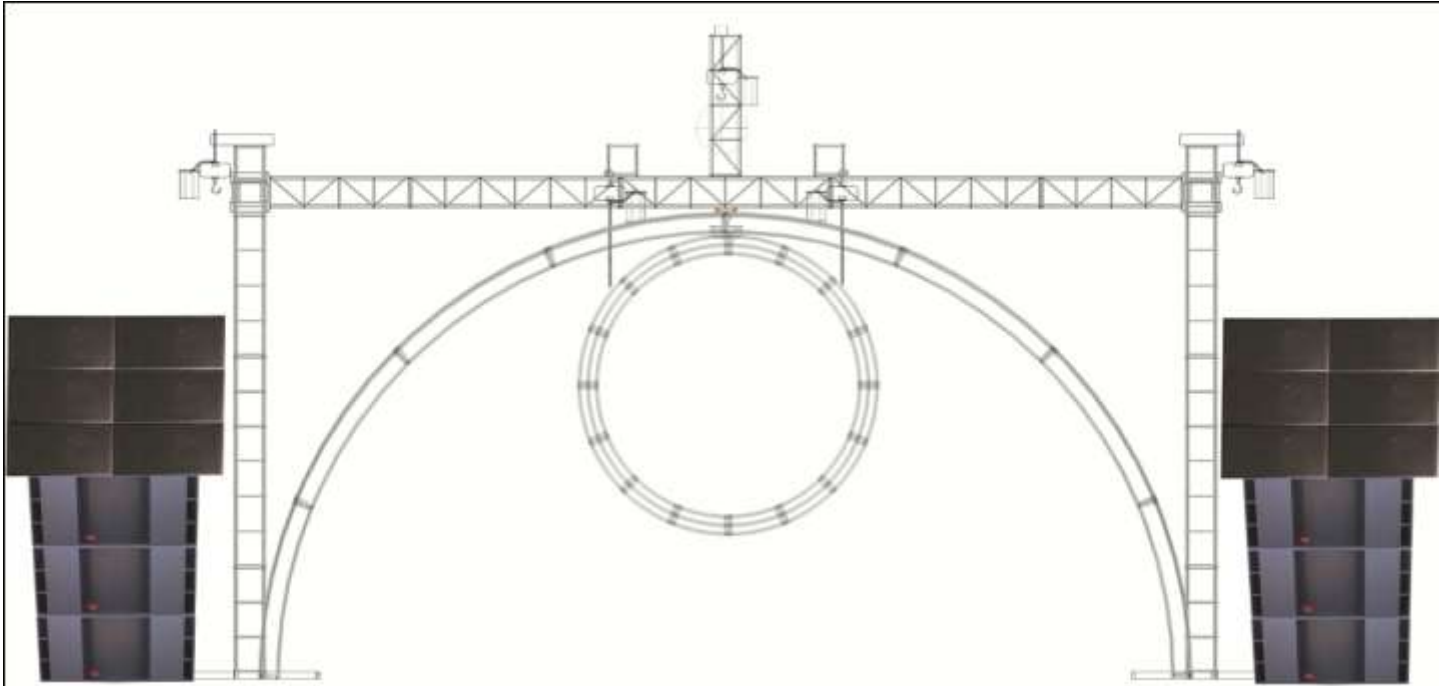
**Monitor Drive Racks:**

- 1 16IRU drive / effects rack c/w case
- 8 Q Audio PE137 Graphic Equalizers
- 1 16IRU drive / effects rack c/w case
- 2 Q Audio PE137 Graphic Equalizers
- 6 SIEM- 111T / SIEM-111R in ears
- 2 Behringer Power Play Pro XL Headphone amps
- 2 Acoustic Technologies E1500 watt power amp
- 4 2 X 15" & Horn Side fill speakers

**Others:**

- 4 Draws cases
- 10 Leads Packers
- 100 XLR Microphone cables
- 26 Mic Stands
- 1 Mic Stands Case
- 1 Multi cores lead packer
- 36 Speakon Monitor cables

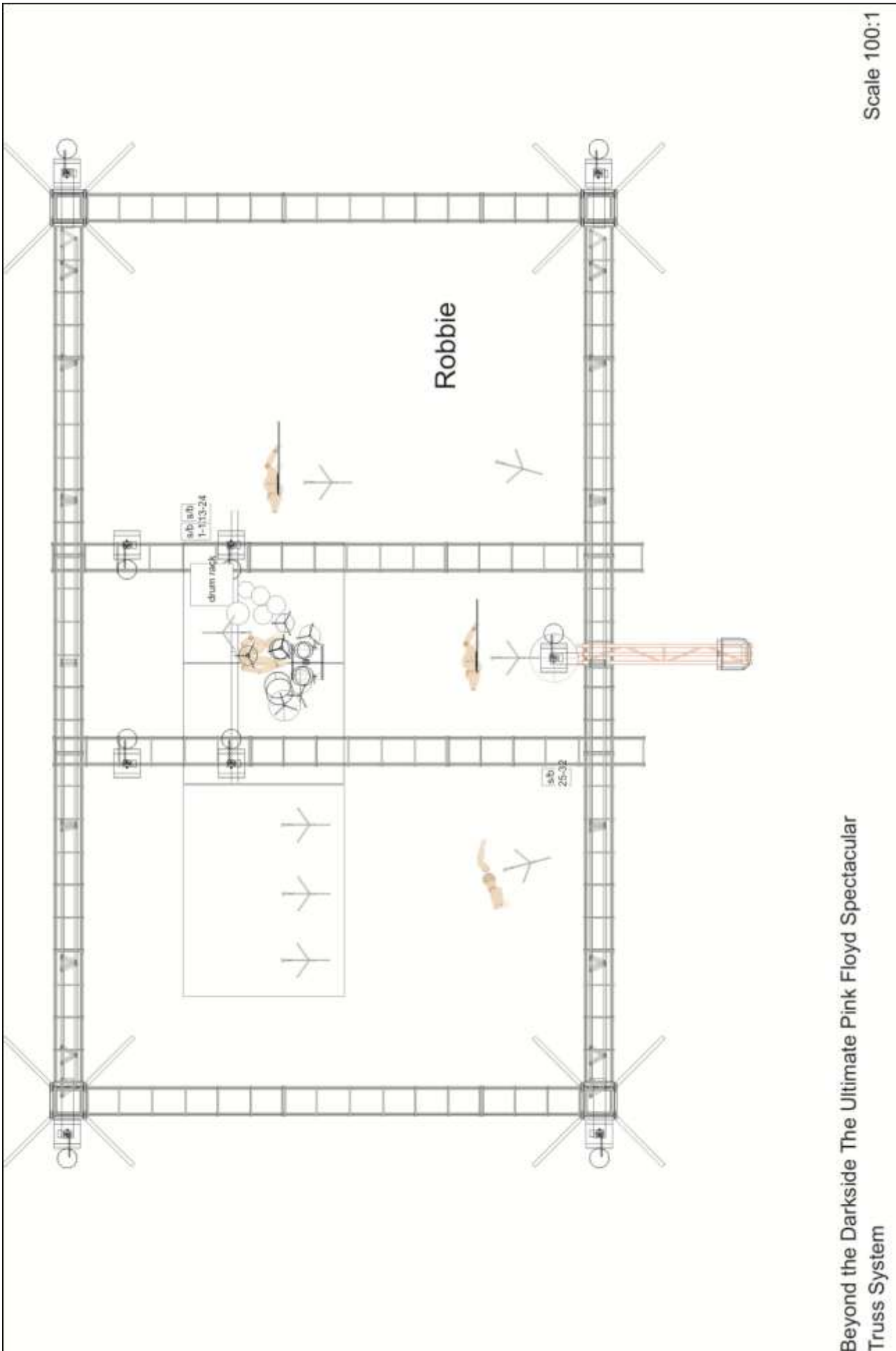




Beyond the Darkside show surround sound system layout

80'000 watts 5.1 Surround Sound System  
 Darkside Trading Pty Ltd. Australia 2009.





Beyond the Darkside The Ultimate Pink Floyd Spectacular  
Truss System

Scale 100:1

# BTDS Lighting equipment breakdown

- 1 10-watt air-cooled Copper Vapour Laser split over 2 x laser benches.
- 1 2 x 100mwatt LED laser scanners.
- 2 Laser bench - 2 x scan heads, 1 blade scanner, Targeting mirrors and other various effects
- 2 Studio Due mirror deflectors + DMX controller
- 52 Martin Pro 518 scanners (Moving lights) 18 colours, Rotating gobos etc.
- 64 Martin 812 Scanners (Moving lights)
- 12 Martin Pro 218 scanners (Moving lights)
- 8 Martin Pro 400's
- 4 Hi End – Intellabeams.
- 8 Geni OBY- 3 moving head fixtures.
- 12 DMX - RGB Truss lanterns
- 12 DMX - RGB Par 64 LED lanterns
- 1 2032 Martin computers controllers. (For testing)
- 4 3032 Martin computers controllers.
- 4 Martin 516 (16 channels of Martin to 0 – 10 volt converters)
- 1 Martin Light Jockey controller
- 2 Martin Freekie controller
- 2 Showtime 12 channel DMX Lighting desk
- 1 Berringer 24 channel DMX Euro Lighting desk
- 2 Martin hasers.
- 4 Martin pro 2000 smoke machines
- 1 4.5 meter circular video screen (Surrounded by 24 x Martin 812 lights)
- 2 Rigging packers - contains rigging equipment
- 4 Cable packers - contains all 240 cables, data cables and 3 phase cables.
- 2 Dynalite 12 pack Dimmer Racks
- 9 Blocks of 25 Pin spots - Front Floor lighting + Weiland cables.
- 4 Truss towers, carriages Truss towers can be 4m, 4.5m & 7.5m
- 10 4m sections of Quad Concert Truss, spigots and pins.
- 6 3m sections of Quad Concert Truss, spigots and pins.
- 2 2m sections of Quad Concert Truss, spigots and pins.
- 4 3m Sections of Tri Truss, spigots and bolts.
- 4 2m Sections of Tri Truss, spigots and bolts.
- 12 Curved sections of tri truss – makes 1 x 13m circle or 2 x 13m arches
- 4 CM Loadstar 1 ton chain hoists + cases
- 5 Donati 250kg motorized Chain hoists + cases – for the 2 x pods and opening mirror ball.
- 1 CM Loadstar controller
- 1 Donati Controller
- 1 Eiki LCD Video Projector
- 1 Sony LCD Video Projector
- 1 NEC LCD Video Projector
- 1 Video Draws / leads packer - contains video cabling
- 1 Din Master 6 DMX Dimmer unit



## Miscellaneous - Other Equipment - used in show.

- 1 24" mirror ball with motor.
- 2 Fan forced inflatable 20 foot pigs.
- 1 Electronic detonation system for pyrotechnics - flash pots. (We use 52 shots per normal show)
- 1 400amp Power lock system with 20m cables all flight cased.
- 1 PSA 631 - 3 Phase readout distribution Board
- 2 PSA 321 - 3 Phase readout distribution Boards
- 4 30 amp 3 Phase Distribution Boards
- 3 10m 32amp 3 Phase Cables extensions
- 1 10m 63 amp 3 Phase Cable extension
- 100 XLR - Data cables.
- 1 3 Phase Leads packer case
- 1 3 Phase Chain Motor Leads packer case
- 12 3 Phase Chain motor leads





Above: A Typical truss system set up



Above: 32amp 3-Phase distribution rack



Above: Truss tower outriggers



Above: 63amp 3-phase distribution rack.



Above: The Wall of Pinpoint lighting



Above: 10watt Copper Vapour laser bench and laser.

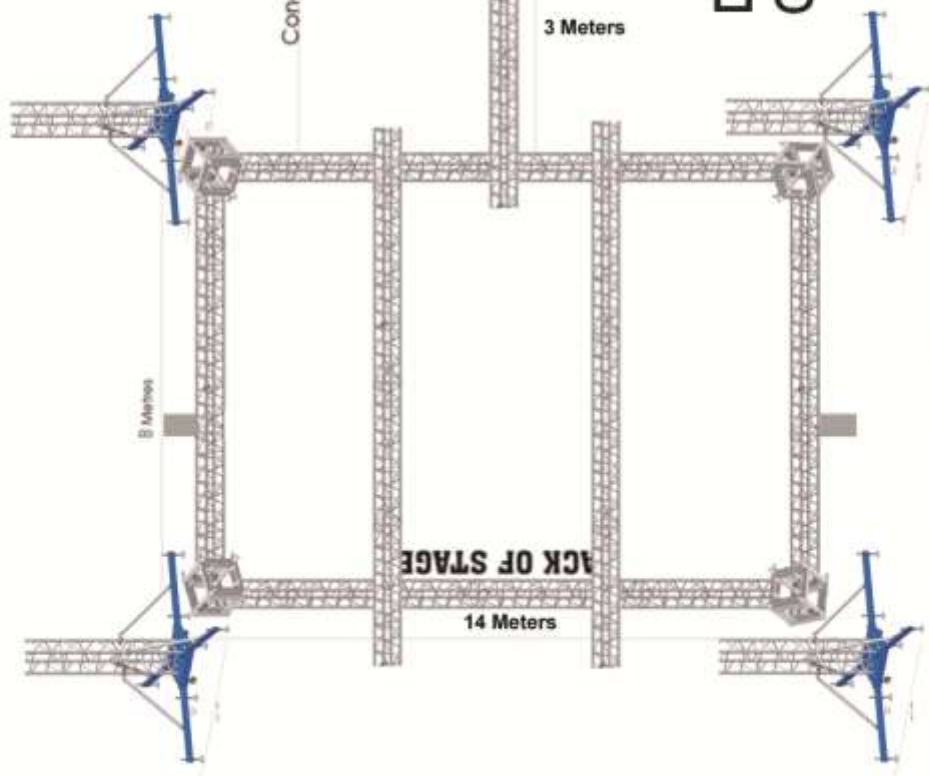


**Concert Truss:**  
 10 x 4 Metre sections  
 6 x 3 Metre sections  
 2 x 2 Metre Sections

# Truss Towers x 4

Lifted by:  
 4 x 1 Ton CM Loadstar Chain hoists

- Rigging & couplers specs
- 500kg Lighting clamp
- 500kg Eye ring coupler
- 500kg 360 double coupler



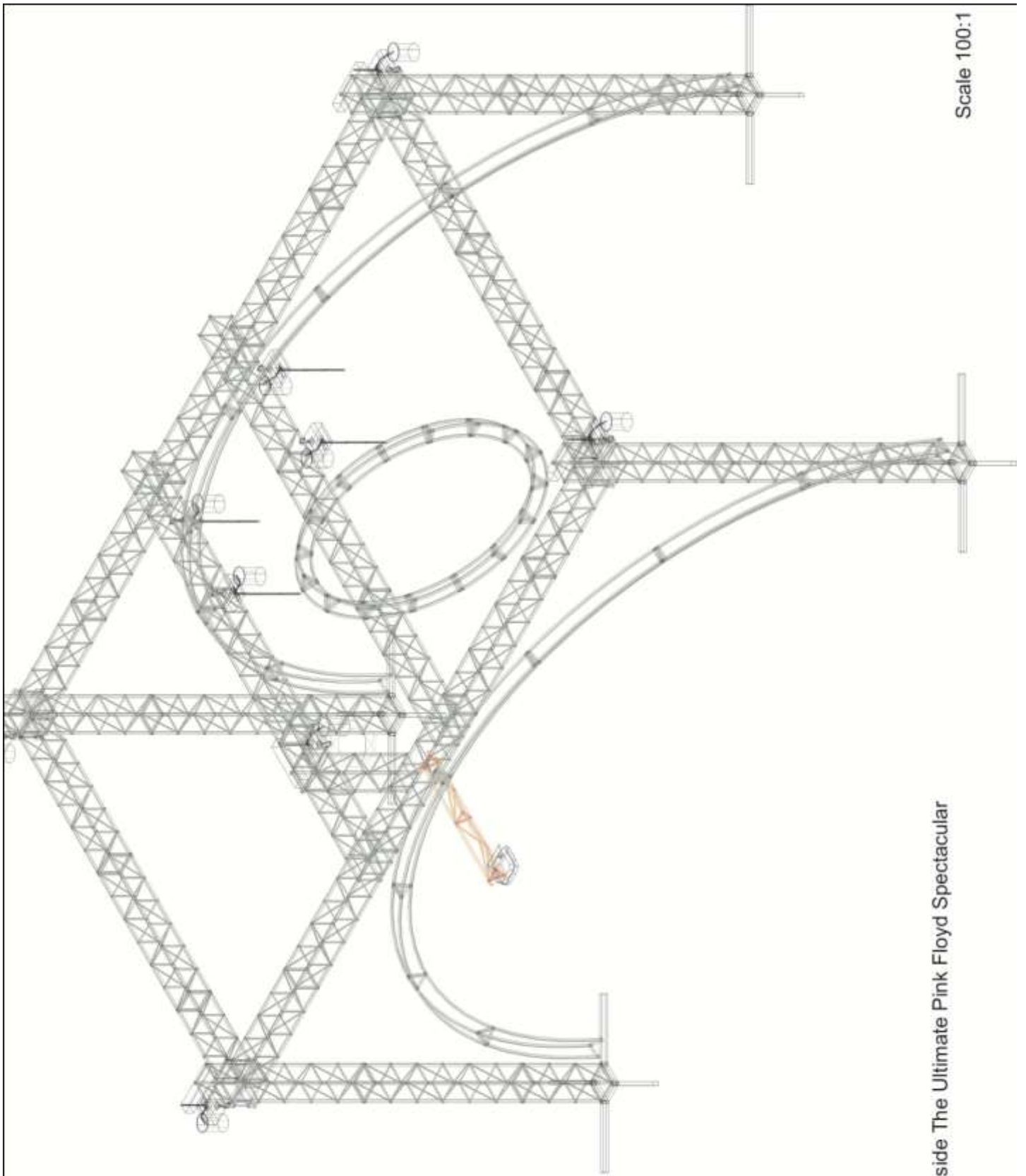
**Tower Truss:**  
 4 x 3m Sections  
 8 x 2m Sections  
 4 x 0.5m Sections



## Darkside Trading Pty Ltd. Ground support system.

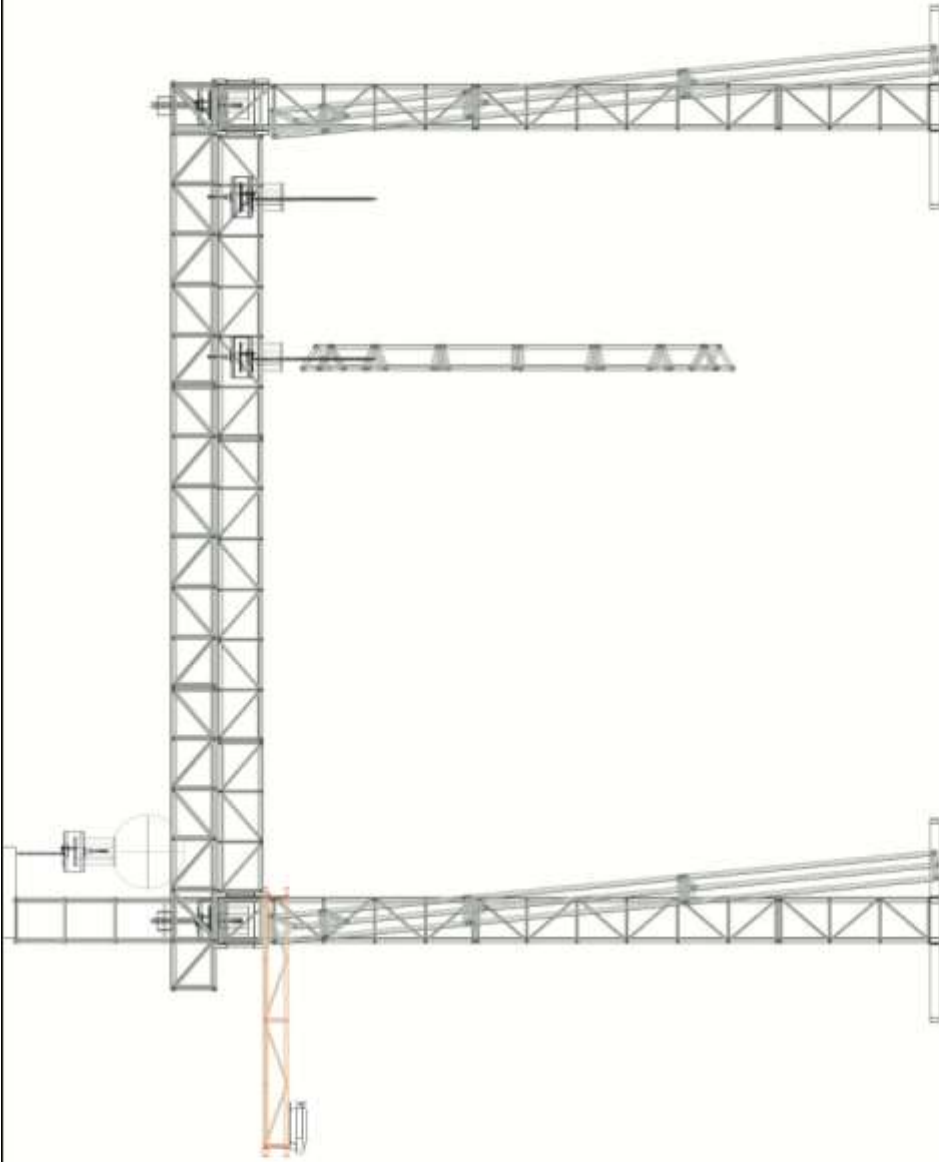
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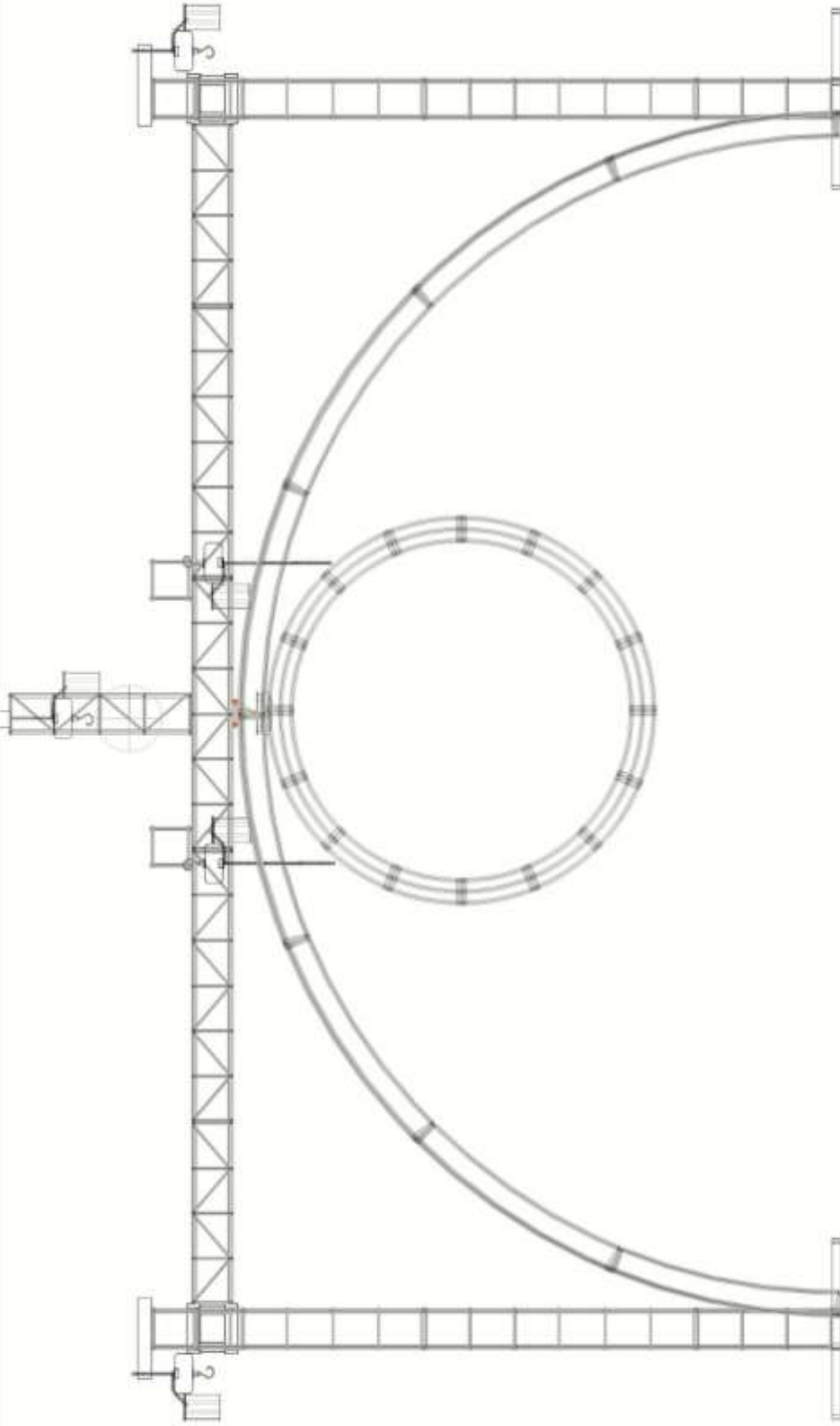
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Beyond the Darkside The Ultimate Pink Floyd Spectacular  
Truss System



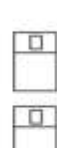
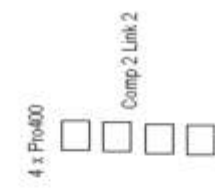
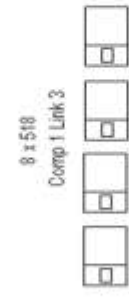
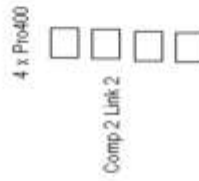
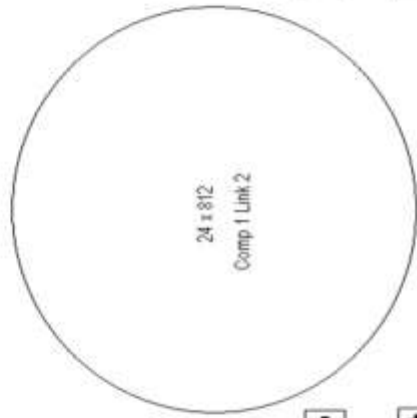
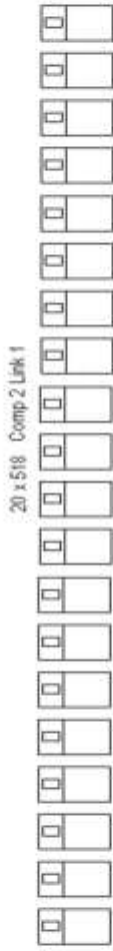
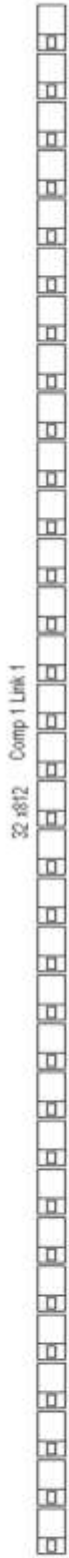
Beyond the Darkside The Ultimate Pink Floyd Spectacular  
Truss System

Scale 100:1



Beyond the Darkside The Ultimate Pink Floyd Spectacular  
Truss System

Scale 100:1





# BTDS Stage equipment breakdown

- 1 7 x Shell drum kit with racks, Cymbals and Rotor toms.
- 1 Roland Electronic percussion + 16 trigger Pads, Alesis D4 + 3 trigger Pads
- 1 Yamaha 0X1 mixing console – Electric Drums Mixer.
- 1 4 x 10" Ashdown Speakers Bass speaker - Bass Player
- 1 1 x 15" Ashdown Speakers Bass speaker - Bass Player
- 1 DAP 2 way xover
- 1 AM 1600 Amplifier
- 1 Roland Boss GTB 10 Bass Guitar effects processor
- 4 Bass Guitars
- 1 M-Audio Keystation Pro 88 controller
- 1 Roland VR 760 Synthesizer
- 1 Casio VZ keyboard
- 1 Power Mac G5 dual core 2Ghz Computer - Music Computer.
- 1 Pentium E8600 DUO core 3Ghz Computer - Music Computer.
- 1 Dual Pentium III 1.4 Ghz Computer - Video.
- 5 M-Audio Delta 1010.
- 3 M-Audio USB 8X8 MIDI / SMPTE.
- 1 Alto 4 channel head phone amplifier.
- 1 Berringer 4 channel D.I Rack mount.
- 2 UPS Power supplies



- 2 Fender twin reverb guitar amplifiers
- 1 Boss GT 6 Guitar effects processor.
- 2 Roland GP 16 Guitar processor and foot controllers
- 2 Fender Stratocaster Guitars (modified)
- 1 Fender lap steel
- 1 Fender Telecaster
- 2 Line 6 Variax Acoustic Guitars
- 1 Fender twin reverb guitar amplifier – Second Guitarist
- 1 Fender Stratocaster Guitar - Second Guitarist
  
- 2 Saxophones – Alto & Tenor



# Beyond the Darkside Show <sup>®</sup>



**Management:** Office +61 (7) 3372 3932.  
**Show Producer:** Kevin Hunt +61 (0)431 616857.  
**Show Director:** Athol Sargood +61 (0)422 318360.  
**Production Manager:** Gary Walker +61 (0)417 008296.  
[producer@beyondthedarkside.com](mailto:producer@beyondthedarkside.com) [www.beyondthedarkside.com](http://www.beyondthedarkside.com)

## From A Wish to the Moon & Beyond Tour

### Wish you were here show

#### Part 1 of Show - Time 1hr 35 mins

- 1 Shine On You Crazy Diamond 1 - 5
- 2 Welcome to the Machine
- 3 Have a Cigar
- 4 Wish You Were Here
- 5 Shine On Pts 6 & 7
- 6 Dogs
- 7 Learning to Fly
- 8 Sorrow
- 9 Dogs of War
- 10 What Do You Want From Me
- 11 On the Turning Away
- 12 One of These Days

### Dark Side of the Moon show

#### Part 2 of Show - Time 0hr 40 mins

- 11 Breathe / Speak To Me
- 12 Time
- 13 Breathe Reprise
- 14 Great Gig In the Sky
- 15 Money
- 16 Us & Them
- 17 Any Colour You Like
- 18 Brain Damage
- 19 Eclipse

### The Wall – Best of . . . . .

#### Part 3 Encores - 35 mins

- 20 In the Flesh
- 21 Mother
- 22 Happiest Days of our Lives
- 23 Another Brick in the Wall Pt2
- 24 Comfortably Numb
- 25 Run Like Hell



# Beyond the Darkside – The Animals Tour

## Hits of the Decades show

Part 1 of Show - Time 1hr 30 mins

- 1 Shine On You Crazy Diamond 1 - 5
- 2 Welcome to the Machine  
Learning to Fly
- 4 High Hopes
- 5 Time
- 6 Breathe - Reprise
- 7 Great Gig In the Sky
- 8 One Slip
- 9 What Do You Want From Me
- 10 Money
- 11 Wish You Were Here
- 12 On the Turning Away
- 11 Brain Damage
- 12 Eclipse
- 13 One of These Days

## Animals show

Part 2 of Show - Time 40 mins

- 14 Pigs on the Wing Pt 1
- 15 Dogs
- 16 Pigs 3 Different ones
- 17 Sheep
- 18 Pigs on the Wing Pt 2

## The Wall – Best of . . . . .

Part 3 Encores - 35 mins

- 19 In the Flesh
- 20 Mother
- 21 Happiest Days of our Lives
- 22 Another Brick in the Wall Pt2
- 23 Comfortably Numb
- 24 Run Like Hell



# Beyond the Darkside – Best of the Wall Tour

## Part 1 of Show - Time 1hr 05 mins Hits of the Decades show

- 1 Shine On Pts 6-7
- 2 Echoes
- 3 Astronomy Domine
- 4 Learning To Fly
- 5 Sorrow
- 6 High Hopes
- 7 Time
- 8 Take It Back
- 9 Welcome to the Machine
- 10 Terminal Frost
- 11 One Of These Days

## Best Of The Wall Plus Some Part 2 of Show - Time 1hr 07 mins

- 12 In The Flesh
- 13 Another Brick In The Wall Pt1
- 14 Happiest Days Of Our Lives
- 15 Another Brick In The Wall Pt2
- 16 Mother
- 17 Goodbye Blue Sky
- 18 Young Lust
- 19 One Of My Turns
- 20 Another Brick In The Wall Pt3
- 21 Hey You
- 22 Comfortably Numb
- 23 Run Like Hell

## Part 3 Encores - 21 mins

- 24 Wish You Were Here
- 25 Money (DSOTM)
- 26 Sheep (Animals)



# Beyond the Darkside Laser & Pyrotechnics Safety Setup procedures

## BEYOND THE DARKSIDE LASER SETUP

Beyond The Darkside uses a Spectronika Ltd. CV Lasers 10 watt Copper Vapour Laser.

- The Laser Bench is positioned Prompt Side of Stage
- The Laser is equipped with an emergency shutoff and a beam shutoff.
- The control desk also allows for the beams to not be sent out over the audience.
- The Laser Bench is fitted with a physical beam stop, which is bolted into position on the bench.
- Beams are split on the bench and focused out over the audience onto a hard surface.
- Beams Focused over the audience maintain a minimum separation of 6 m in height and 2.5 m laterally from any surface upon which spectators can stand as per AS NZS 2211.3:2002
- There are physical barriers in place on the Laser Bench and on the stage to prevent a stray beam from ever being able to strike anyone on stage or in the audience.
- No audience scanning will be done.
- We use a Lead Crystal to scatter the beam as an effect. These scattered beams will not be on the audience.
- The Laser System is tagged and tested and all scattered beams meet European Specs.
- The Production also uses two (2) 100 mw ILDA LED laser scanners.

## BEYOND THE DARKSIDE PYROTECHNICS MANAGEMENT PLAN – Qld Only.

- The Show Director located at the Front Of House mixing position calls the Pyro ques. The Pyro Operator is located upstage centre.
- The Show Director and the Pyro Operator are in constant contact via talkback headsets.
- The Show Director has a clear view of the firing area and the pyrotechnic devices.
- The pyrotechnic devices are located between stage effect lighting on the orchestra fore stage and the stage monitor wedges in front of the performers. These act as a physical barrier to stop performers stepping into the firing area.
- The devices are no less than two (2) metres from performers and no less than three (3) metres from the audience. This area is also marked with laser designators so people know that it is an off limits area.
- No devices are detonated if the Show Director sees any person on the fore stage area or within the safety area.
- This area also has laser target mirrors located in it and we have made it very difficult for any person to gain access to this area during the show.
- The Show Director gives a talk to all persons in the show about the laser and pyro area showing them the laser designators. He physically walks the area to show them the boundaries and test fires pyros so that each person knows what it is like when the pyros are fired.

## Stage Dimensions and Safety Distances

8 Metres

For reasons of safety for both stage workers and the audience, the marked safety distances are required for the use of pyrotechnics.

2 Mtrs

16 METRES

Pyrotechnics Line

3 Mtrs

First Row of seating or People barrier.



## SAFETY DATA SHEET PRO HAZE FLUID

### 1. Identification of the Substance/Preparation & Company/Undertaking

#### 1. Identification of the substance or preparation:

Name: Pro Haze Fluid  
Synonyms: Technohaze Fluid

#### 2. Use of the substance/preparation:

Fluid for use in the creation of smoke effects using a dedicated smoke machine.

#### 3. Company/undertaking identification:

Martin Manufacturing (UK) Plc.      Tel: +44 (0) 1507 604399  
Belvoir Way,                              Fax: +44 (0) 1507 601956  
Fairfield Industrial Estate,  
Louth,  
Lincolnshire,  
LN11 0LQ  
UK

### 2. Composition/Information on Ingredients

Contains:

Food grade glycols

Polyglycols CAS Registry Number: 57-55-6

De-mineralised water.

Contains no substances in Part 1 of the Approved Supply List, or with a maximum exposure limit (MEL) specified in Schedule 1 of COSHH.

Contains monopropylene glycol, for which an occupational exposure standard has been set

### 3. Hazardous Information:

No significant hazard to man or environment under normal conditions of handling and use.

Ingestion: low toxicity.

Eye/skin: low toxicity

Inhalation: low concentration of hazardous substances in vapour. Undiluted vapour should not be inhaled. (**Note:** The concentration of smoke components in the final product is below the OES under normal operating conditions)

Revision No.: C      Date:07/06/2007  
Replaces SDS No.:114B      Date:05/01/2005

**SDS No. 114C      Date: June 2007**

Sheet 1 of 5



**SAFETY DATA SHEET**  
**PRO HAZE FLUID**

<b>4. First Aid Measures</b>		
<b>Exposure Route</b>	<b>Symptom</b>	<b>Treatment</b>
Inhalation	Mild irritation of nose & throat	Remove from exposure, rest and keep warm. In severe cases, or if recovery is not rapid or complete, seek medical attention
Skin Contact	Mild irritation	Drench the skin with plenty of water. Remove contaminated clothing and wash before re-use. If large areas of the skin are damaged or if irritation persists seek medical attention
Eye Contact	Mild irritation	Irrigate thoroughly with water for at least 10 minutes. Obtain medical attention
Ingestion	Mild irritation of gastro-intestinal tract	Wash out mouth with water. Do not induce vomiting. If patient is conscious, give water to drink. If patient feels unwell seek medical attention.
<b>5. Fire Fighting Measures</b>		
Suitable Extinguishers		Alcohol-resistant or all-purpose-type foam. Use carbon dioxide or dry powder for small fires only
Unsuitable Extinguishers		Do not direct a solid stream of water or foam into hot burning pools; as this may cause frothing and increase the intensity of a fire
Hazardous Combustion Products		Oxides of carbon including aldehydes
Special Equipment for fire Fighting		Self contained breathing apparatus
<b>6. Accidental Release Measures</b>		
Safety Precautions		Wear appropriate PPE when handling - see section 8
Environmental Precautions		Prevent entry into drains and water courses
Clean up Procedure		Bund or absorb material with sand, earth or other suitable absorbent material. If possible, transfer to a salvage tank, otherwise absorb residues and place in suitable labelled containers and hold for waste disposal - see section 13
<b>7. Handling and Storage</b>		
Safe Handling		Avoid prolonged skin contact. Avoid contact with eyes. Ensure good general ventilation of area. Avoid creating spray. Do not breathe undiluted vapour
Storage		Store in original closed containers Store at ambient temperature Store away from materials listed in section 10
Specific Use(s)		Only for use in designated smoke machine for the production of smoke as a special effect

Revision No.: C      Date:07/06/2007  
Replaces SDS No.:114B      Date:05/01/2005

**SDS No. 114C      Date: June 2007**

Sheet 2 of 5





## SAFETY DATA SHEET PRO HAZE FLUID

### 8. Exposure Controls and Personal Protection

Exposure Limit Values	Does not exceed 10mg/m <sup>3</sup> for particulate suspension and 474mg/m <sup>3</sup> for total vapour plus particulates.
Exposure Controls:	
Respiratory	Type approved RPE for organic vapours and mists, if required
Hand	PVC coated or rubber gloves
Eye	Goggles or face shield
Skin	Overalls and boots
Hygiene Measures	Always wash thoroughly after handling chemicals

### 9. Physical and Chemical Properties

Appearance:	Colourless Liquid
Odour:	Mild
pH	Neutral
Boiling Point/Range:	101.6 - 201.6 °C
Melting Point/Range:	< -20 °C
Flash Point:	> 78 °C (test flame extinguished at 78 °C)
Flammability Limits:	2.9 - 18.1 v/v (estimated)
Vapour Pressure:	2.67 kPa at 20°C
Relative density:	1.050 at 20 °C/20 °C
Solubility in water:	Completely miscible

### 10. Stability and Reactivity

Stability	Stable in normal conditions
Known hazardous reactions	Possibility of explosive decomposition if combined with strong acids or bases at elevated temperatures
Conditions to avoid	Elevated temperatures
Materials to avoid	Strong acids and bases; strong oxidisers
Hazardous decomposition products	Oxides of carbon, including aldehydes

### 11. Toxicological Information

OES for monopropylene glycol set at 150 ppm (total vapour and particulates) for 8-hour TWA, and 10 mg/m<sup>3</sup> (particulates) for 15-minute STEL.

LD<sub>50</sub> for monopropylene glycol:

21000 - 33700 mg/kg oral - rat, >10000 mg/kg skin - rabbit.

May cause slight irritation to skin, eyes and mucous membranes. Large doses may produce adverse effects on liver, kidneys and central nervous system.

No evidence in developmental toxicity studies for either embryotoxic or teratogenic effects.

Revision No.: C      Date:07/06/2007  
Replaces SDS No.:114B      Date:05/01/2005

SDS No. 114C      Date: June 2007

Sheet 3 of 5



## SAFETY DATA SHEET PRO HAZE FLUID

### 12. Ecological Information

Mobility	Liquid with low volatility, soluble in water, predicted to have high mobility in soil
Persistence and Degradability	The preparation is largely biodegradable: BOD <sub>5</sub> = 1.08 gO <sub>2</sub> /g; ThOD = 1.68 gO <sub>2</sub> /g; COD = 1.63 gO <sub>2</sub> /g BOD <sub>20</sub> /ThOD = 86%
Bio accumulative Potential	Low
Short and long-term effects	LC <sub>50</sub> , fathead minnow = 4600 - 54900 mg/l EC <sub>50</sub> , Daphnia magna = 4850 - 34400 mg/l
Other	

### 13. Disposal Considerations

Substance	Via an authorised waste disposal contractor to an approved waste disposal site, observing all local and national regulations
Container	As for substance. Used containers must not be cut up or punctured until completely purged of product residues

### 14. Transport Information

No special precautions for transport

### 15. Regulatory Information

Supply label details	In accordance with CHIP 2, Regulation 9.
Label Name	Regular DJ
Symbol	} No risk or safety phrases stipulated
Risk phrases	
Safety phrases	
E.E.C. Number	

Use of this material may be governed by the following regulations:

COSHH, HSWA, MHSW

Users are advised to consult these regulations for further information. The information contained in this data sheet does not constitute an assessment of workplace risk as required by other health and safety legislation.

Revision No.: C      Date:07/06/2007  
Replaces SDS No.:114B      Date:05/01/2005

**SDS No. 114C      Date: June 2007**

Sheet 4 of 5



**SAFETY DATA SHEET**  
**PRO HAZE FLUID**

**16. Other Information**

No special training is required for handling this preparation other than normal precautions for safe handling of chemicals

This material is usually used for the production of synthetic smoke in an appropriate JEM smoke- machine. The concentration of smoke components is below the OES under normal operating conditions.

It must not be used for any other purpose, or in any other equipment

Further details may be available on request from the supplier, whose address and telephone number are given in section 1.

**This datasheet updated to meet Commission Directive 2001/58/EC**

**Sources of information:**

Suppliers' Safety Data Sheets for substances used as raw materials in the preparation.

EH 40/97

NFPA 325M

**Legal Disclaimer:**

The above information is based on the present state of our knowledge of the product at the time of publication. It is given in good faith, no warranty is implied with respect to the quality of the specification of the product. The user must satisfy himself that the product is entirely suitable for his purpose.

If you have purchased the product for supply to a third party, it is your duty to take all necessary steps to ensure that any person handling and using the product is provided with the information in this sheet. If you are an employer it is your duty to tell your employees and others who may be affected by any hazard described in this sheet and of any precautions that should be taken.

Revision No.: C      Date:07/06/2007  
Replaces SDS No.:114B      Date:05/01/2005

**SDS No. 114C      Date: June 2007**

Sheet 5 of 5



## SAFETY DATA SHEET PRO SMOKE SUPER FLUID

### 1. Identification of the Substance/Preparation & Company/Undertaking

#### 1. Identification of the substance or preparation:

Name: Pro Smoke SUPER Fluid

Synonyms: ZR Fluid

#### 2. Use of the substance/preparation:

Fluid for use in the creation of smoke effects using a dedicated smoke machine.

#### 3. Company/undertaking identification:

Martin Manufacturing (UK) Plc. Tel: +44 (0) 1507 604399

Belvoir Way, Fax: +44 (0) 1507 601956

Fairfield Industrial Estate,

Louth,

Lincolnshire,

LN11 0LQ

UK

### 2. Composition/Information on Ingredients

Contains:

Food grade glycols

Polyglycols CAS Registry Number: 57-55-6

De-mineralised water.

Contains no substances in Part 1 of the Approved Supply List, or with a maximum exposure limit (MEL) specified in Schedule 1 of COSHH.

Contains monopropylene glycol, for which an occupational exposure standard has been set

### 3. Hazardous Information:

No significant hazard to man or environment under normal conditions of handling and use.

Ingestion: low toxicity.

Eye/skin: low toxicity

Inhalation: low concentration of hazardous substances in vapour. Undiluted vapour should not be inhaled. (**Note:** The concentration of smoke components in the final product is below the OES under normal operating conditions)

Revision No.: C Date:07/06/2007  
Replaces SDS No.:111B Date:05/01/2005

SDS No. 111C Date: June 2007

Sheet 1 of 5



**SAFETY DATA SHEET**  
**PRO SMOKE SUPER FLUID**

<b>4. First Aid Measures</b>		
<b>Exposure Route</b>	<b>Symptom</b>	<b>Treatment</b>
Inhalation	Mild irritation of nose & throat	Remove from exposure, rest and keep warm. In severe cases, or if recovery is not rapid or complete, seek medical attention
Skin Contact	Mild irritation	Drench the skin with plenty of water. Remove contaminated clothing and wash before re-use. If large areas of the skin are damaged or if irritation persists seek medical attention
Eye Contact	Mild irritation	Irrigate thoroughly with water for at least 10 minutes. Obtain medical attention
Ingestion	Mild irritation of gastro-intestinal tract	Wash out mouth with water. Do not induce vomiting. If patient is conscious, give water to drink. If patient feels unwell seek medical attention.
<b>5. Fire Fighting Measures</b>		
Suitable Extinguishers		Alcohol-resistant or all-purpose-type foam. Use carbon dioxide or dry powder for small fires only
Unsuitable Extinguishers		Do not direct a solid stream of water or foam into hot burning pools; as this may cause frothing and increase the intensity of a fire
Hazardous Combustion Products		Oxides of carbon including aldehydes
Special Equipment for fire Fighting		Self contained breathing apparatus
<b>6. Accidental Release Measures</b>		
Safety Precautions		Wear appropriate PPE when handling - see section 8
Environmental Precautions		Prevent entry into drains and water courses
Clean up Procedure		Bund or absorb material with sand, earth or other suitable absorbent material. If possible, transfer to a salvage tank, otherwise absorb residues and place in suitable labelled containers and hold for waste disposal - see section 13
<b>7. Handling and Storage</b>		
Safe Handling		Avoid prolonged skin contact. Avoid contact with eyes. Ensure good general ventilation of area. Avoid creating spray. Do not breathe undiluted vapour
Storage		Store in original closed containers Store at ambient temperature Store away from materials listed in section 10
Specific Use(s)		Only for use in designated smoke machine for the production of smoke as a special effect

Revision No.: C      Date:07/06/2007  
Replaces SDS No.:111B      Date:05/01/2005

**SDS No. 111C      Date: June 2007**

Sheet 2 of 5



## SAFETY DATA SHEET PRO SMOKE SUPER FLUID

### 8. Exposure Controls and Personal Protection

Exposure Limit Values	Does not exceed 10mg/m <sup>3</sup> for particulate suspension and 474mg/m <sup>3</sup> for total vapour plus particulates.
Exposure Controls:	
Respiratory	Type approved RPE for organic vapours and mists, if required
Hand	PVC coated or rubber gloves
Eye	Goggles or face shield
Skin	Overalls and boots
Hygiene Measures	Always wash thoroughly after handling chemicals

### 9. Physical and Chemical Properties

Appearance:	Colourless Liquid
Odour:	Mild
pH	Neutral
Boiling Point/Range:	101.6 - 201.6 °C
Melting Point/Range:	< -20 °C
Flash Point:	> 78 °C (test flame extinguished at 78 °C)
Flammability Limits:	2.9 - 18.1 v/v (estimated)
Vapour Pressure:	2.67 kPa at 20°C
Relative density:	1.050 at 20 °C/20 °C
Solubility in water:	Completely miscible

### 10. Stability and Reactivity

Stability	Stable in normal conditions
Known hazardous reactions	Possibility of explosive decomposition if combined with strong acids or bases at elevated temperatures
Conditions to avoid	Elevated temperatures
Materials to avoid	Strong acids and bases; strong oxidisers
Hazardous decomposition products	Oxides of carbon, including aldehydes

### 11. Toxicological Information

OES for monopropylene glycol set at 150 ppm (total vapour and particulates) for 8-hour TWA, and 10 mg/m<sup>3</sup> (particulates) for 15-minute STEL.

LD<sub>50</sub> for monopropylene glycol:

21000 - 33700 mg/kg oral - rat, >10000 mg/kg skin - rabbit.

May cause slight irritation to skin, eyes and mucous membranes. Large doses may produce adverse effects on liver, kidneys and central nervous system.

No evidence in developmental toxicity studies for either embryotoxic or teratogenic effects.

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Replaces SDS No.:111B      Date:05/01/2005

SDS No. 111C      Date: June 2007

Sheet 3 of 5



## SAFETY DATA SHEET PRO SMOKE SUPER FLUID

### 12. Ecological Information

Mobility	Liquid with low volatility, soluble in water, predicted to have high mobility in soil
Persistence and Degradability	The preparation is largely biodegradable: BOD <sub>5</sub> = 1.08 gO <sub>2</sub> /g; ThOD = 1.68 gO <sub>2</sub> /g; COD = 1.63 gO <sub>2</sub> /g BOD <sub>20</sub> /ThOD = 86%
Bio accumulative Potential	Low
Short and long-term effects	LC <sub>50</sub> , fathead minnow = 4600 - 54900 mg/l EC <sub>50</sub> , Daphnia magna = 4850 - 34400 mg/l
Other	

### 13. Disposal Considerations

Substance	Via an authorised waste disposal contractor to an approved waste disposal site, observing all local and national regulations
Container	As for substance. Used containers must not be cut up or punctured until completely purged of product residues

### 14. Transport Information

No special precautions for transport

### 15. Regulatory Information

Supply label details	In accordance with CHIP 2, Regulation 9.
Label Name	Regular DJ
Symbol	} No risk or safety phrases stipulated
Risk phrases	
Safety phrases	
E.E.C. Number	

Use of this material may be governed by the following regulations:

COSHH, HSWA, MHSW

Users are advised to consult these regulations for further information. The information contained in this data sheet does not constitute an assessment of workplace risk as required by other health and safety legislation.

Revision No.: C      Date:07/06/2007  
Replaces SDS No.:111B      Date:05/01/2005

**SDS No. 111C      Date: June 2007**

Sheet 4 of 5



## SAFETY DATA SHEET PRO SMOKE SUPER FLUID

### 16. Other Information

No special training is required for handling this preparation other than normal precautions for safe handling of chemicals

This material is usually used for the production of synthetic smoke in an appropriate JEM smoke- machine. The concentration of smoke components is below the OES under normal operating conditions.

It must not be used for any other purpose, or in any other equipment

Further details may be available on request from the supplier, whose address and telephone number are given in section 1.

**This datasheet updated to meet Commission Directive 2001/58/EC**

#### Sources of information:

Suppliers' Safety Data Sheets for substances used as raw materials in the preparation.

EH 40/97

NFPA 325M

#### Legal Disclaimer:

The above information is based on the present state of our knowledge of the product at the time of publication. It is given in good faith, no warranty is implied with respect to the quality of the specification of the product. The user must satisfy himself that the product is entirely suitable for his purpose.

If you have purchased the product for supply to a third party, it is your duty to take all necessary steps to ensure that any person handling and using the product is provided with the information in this sheet. If you are an employer it is your duty to tell your employees and others who may be affected by any hazard described in this sheet and of any precautions that should be taken.

Revision No.: C      Date:07/06/2007  
Replaces SDS No.:111B      Date:05/01/2005

**SDS No. 111C      Date: June 2007**

Sheet 5 of 5



Bob Robinson

## *Australian Pyrotechnics and Explosives*

414 Airforce Rd, Helidon, QLD [PO Box 40 Helidon Qld 4344] Ph. 0421 189694

Manufacturer of Fireworks and Pyrotechnics (Manuf. Lic. 0402379, Sell Lic. 0403854)

Shoppgoods, Display and Close Proximity Fireworks Testing (Lic. 0501237)

### **Certificate of Conformity 050022**

The following fireworks were sampled by Rapid Action Fireworks and submitted for assessment by R. L. Robinson.

Lot No.	ID	Manufacturer	Type	Size mm	Effect
RAF11/12	Smoke-Flash	Safex Chemie GMBH	Flash Pot (indoor)	N/A	Flash & report
RAF11/12	Silver Jet A1	Safex Chemie GMBH	Gerb (indoor)	12	Silver sparks

Samples submitted 26/10/07

Testing completed 02/11/07

The fireworks described above have been:

1. Inspected for labelling,
2. Inspected for structural and visible design defects,
3. Tested for safety performance,

according to the stipulations of the Queensland Fireworks Product Safety Sampling and Test Standard and no critical defects have been found.

ISSUE DATE 02/11/2007



R. L. Robinson

Testing Licence No. 0501237 (exp 18/11/07)

## Indoor Pyrotechnics Testing Record

Name of pyrotechnic Silver Jet A1 Art. No. 9139800  
 Manufacturer/Brand Safex Chemie GmbH (Comet)  
 Description Indoor gerb / stage jet Size (mm) 12  
 Supplier Rapid Action Fireworks Date of supply 26/10/07  
 Batch/Lot No. RAF11/12 Lot size 1100 Sample size 5  
 Name & signature of tester R. Robinson *R. L. Robinson* Date tested 2/11/07  
 Temperature 27 °C

Description	Result	Comments
<b>Labelling</b>		<u>German label on each article.</u>
Border (or equivalent)	Pass / Fail	<u>Instruction sheet in box</u>
English language	Pass / Fail	
Contrasting print	Pass / Fail	
Warning [optogram]	Pass / Fail	Warning Dangerous Explosive Fireworks 1.4G UN 0336 TUP
Description	Pass / Fail	<b>Rapid Action Fireworks</b>
Instructions	Pass / Fail	<b>SILVER JET</b> Emits hot sparks.
UN Number	Pass / Fail	Safety distance 2m around, 6.5m above. Use on fire-resistant surface 2mx2m
Manufacturer & Supplier	Pass / Fail	Manufactured by Safex Chemie GmbH
Font size	mm	
<b>Dimensions</b>		
NEQ	<u>2.4</u> g	
Internal Diameter (Av)	<u>11.8</u> mm	
Number of firing tubes	<u>1</u>	
Tube wall thickness (Av)	<u>3.3</u> mm	
Tube length	<u>47</u> mm	
<b>Structural</b>	Pass / Fail	<u>damage, leaks, structural integrity, fuse attachment</u>
<b>Performance</b>		
Noise Level @ 5m	— dB(A)	
Noise Level @ 10m	— dB(A)	
Noise Level @ 20m	— dB(A)	
Noise Level @ m	— dB(A)	
Burns on Floor	Pass / Fail	Tissue paper set alight. Holes in paper <u>20</u> mm
Burns above item @ <u>2.8</u> m	Pass / Fail	Tissue paper set alight. Holes in paper mm
Burns above item @ m	Pass / Fail	Tissue paper set alight. Holes in paper mm
Effect height (max)	<u>7.9</u> m	
Function duration	<u>1.5</u> sec	
Burst/Effect diameter	<u>2</u> m	
Debris Projected m	Pass / Fail	case fragments, plugs/caps, molten plastic, smouldering debris
Malfunction	Pass / Fail	misfire, hang-fire, erratic flight, tube failure
Effect type	<u>gerb</u>	
Effect colours	<u>silver</u>	

Notes... 2 holes in base paper from 5 tests  
sparks not capable of burning paper < 1/2  
recommended clearance.  
Batch numbers needed on boxes.

**"One of these days I am going to cut YOU into little pieces"**

**6 Metres (20 feet) tall**



**15 foot wide - 10 foot depth**

**Beyond the Darkside Inflatable Pig Prop (2 of)**

Production Supplied by Darkside Trading Pty Ltd

[www.beyondthedarkside.com](http://www.beyondthedarkside.com)