

Aquarius Acoustics

The Sound People

Supplying a professional sound service for professional sound users from installations to live front of house sound, in a giant national arena or in the local pub, all with world-class equipment.

Health & Safety Document

Risk Assessment & Method Statements

For Venue Sound Re-enforcement & Stage
Production

Reviewed January 2012

CONTACT

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1.0 Statement of intent

Aquarius Acoustics is committed to carrying out its undertaking without risk of injury or ill health to its employees or others who may be affected by the work the company does.

This document is presented in pursuance of the statutory requirements of the Health and Safety at work etc. Act 1974 and its subordinate legislation as it applies to the indoor music events.

To this end Aquarius acoustics undertakes to:

- ◆ Provide adequate control of the health and safety risks arising from its work activities;
- ◆ Consult with my employees on matters affecting their health and safety;
- ◆ Provide and maintain safe plant and equipment;
- ◆ Ensure safe handling and use of substances;
- ◆ Provide information, instruction and supervision to its employees;
- ◆ Ensure all employees are competent to do their tasks, and to provide them with adequate training;
- ◆ Prevent accidents and cases of work-related ill health;
- ◆ Maintain safe and healthy working conditions
- ◆ Review and revise this policy as necessary at regular intervals.
- ◆ Inform others about the risks presented by our activities.

Signed: *D Pickering*

Date: Wednesday 25th January 2012

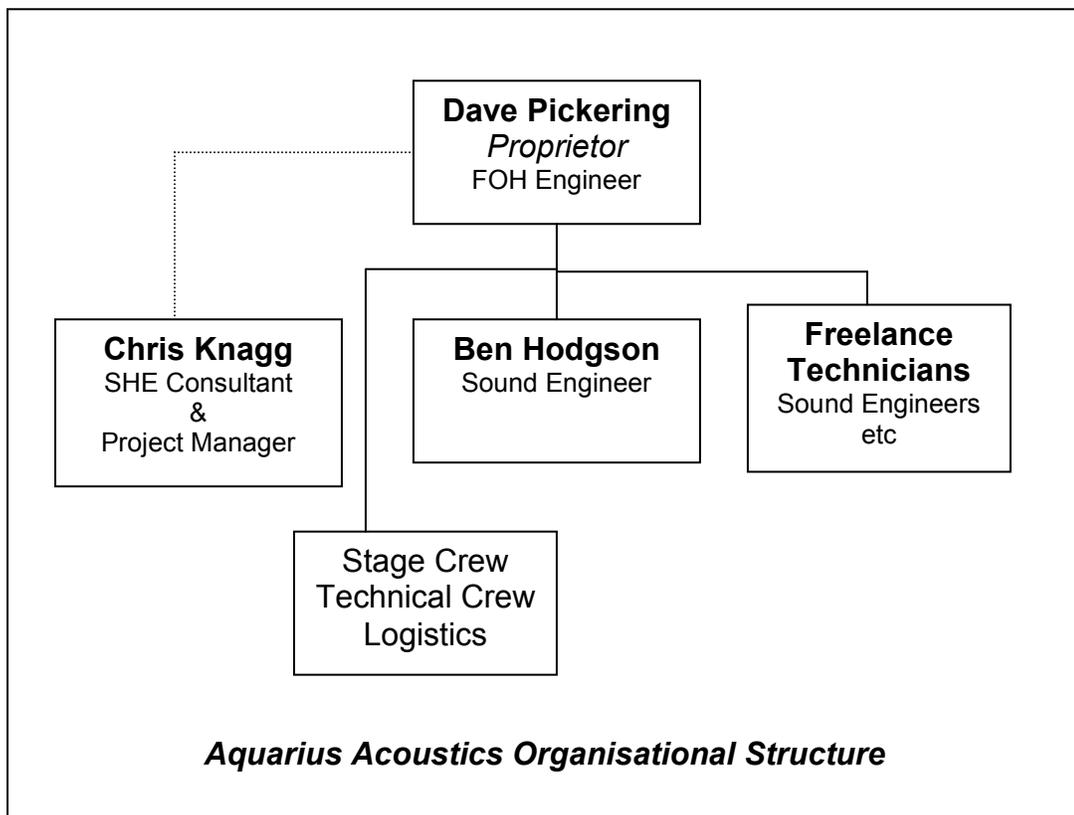
2.0 Competency

Aquarius Acoustics is owned and operated by Mr. Dave Pickering. He is a member of the Chartered Institute of Electrical Engineers and has extensive sound engineering experience in both indoor and outdoor arenas.

Neil Dolman, an experienced sound and theatre engineer, who specialises in monitor engineering and lighting design, rigging and engineering will accompany Dave Pickering on events.

Aquarius Acoustics have a number of freelance technicians that work for the company on events. All of the technicians have backgrounds in theatre and/or live sound and they all go through a background check as well as a trail period to ensure competency at ever level.

Mr Chris Knagg is the company's safety health and environmental consultant; he has a Nottingham Trent University Diploma in Occupational Health Safety & Environment Management and is a Corporate Member of the Institution of Occupational Safety & Health and the International Institute of Risk & Safety Managers. He has extensive experience of large indoor and outdoor events both as a safety professional and as a DJ and stage/event manager.



3.0 **Description of undertaking**

Aquarius Acoustics provide contract sound reinforcement and event production services for outdoor and indoor music events. This includes sound, lighting, staging, power generation and distribution and technical crew.

4.0 Existing site conditions and provisions

All venues are different, however many have similar features and common risks. The venue operator will be consulted prior to arrival on site to ensure enough crew and resources are available to do the job safely.

The nature of the work and equipment involved make any load in, rigging and load out, labour intensive and a significant manual-handling task. To minimise the risk in this respect to all concerned, Aquarius Acoustics require the use or assistance of (with local operator as necessary) all lifts, winches, ramps and mechanical handling devices available at the venue. Local crew must be experienced and trained in safe handling techniques.

A stable and suitable power supply and distribution cables terminated on stage with suitable 3-phase sockets plugged separately into the lighting and sound distribution racks. A separate power source should be used for sound and lighting wherever possible. (To be agreed with Sound engineer prior to event).

The electrical systems are to be installed, checked and certified by a competent electrician prior to use.

The client will be required to show the sound engineer a valid test certificate for the installation before use.

It is assumed that the client will ensure that access to the stage, back-stage and mix position is limited to authorised personnel and artists by means of barriers, security personnel and a pass system where appropriate.

It is assumed that the client has consulted with the Environmental Health Department of the enforcing authority and determined the maximum permitted sound pressure levels for this event and the method by which they are to be determined and measured with. It is assumed that the Client will notify Aquarius Acoustics of these and any other environmental restrictions required in meeting any of specific licensing requirements of this event.

It is assumed that the Client has made adequate provision for the fighting, prevention, detection, and raising the alarm in the event of a fire at the event. A CO2 fire extinguisher will be required on stage and at the mix position.

It is assumed that the client will provide when needed a competent electrician to deal with electrical supplies when required.

5.0 **Assessment of risk**

Here are the work activities and associated risk assessments identified as presenting a significant risk of injury or ill health to Aquarius Acoustic staff and others during the event. Whilst this is as comprehensive as possible, circumstances may arise during the contracted period where further assessment may be required.

The venue operator will be consulted on arrival at any venue, to determine any local rules, conditions and problems that may affect the safety of Aquarius personnel. The Crew Boss will ensure all Aquarius staff are briefed before load in is commenced.

5.1 **Vehicle movements on the site**

There is a significant risk to staff and others from contact with moving vehicles. In particular reversing vehicles for example Fork lift trucks, cranes, other contractor's trucks and amenity vehicles such as skip wagons and road sweepers.

5.2 **Loading and un-loading and movement of equipment.**

Loading and un-loading of sound equipment from the truck presents a risk to staff and others from lifting, lowering, carrying and moving heavy equipment. There is a particular risk to visitors and persons who are not familiar with this type of operation. Most of the equipment is flight cased and on wheels and there is a risk from being injured if in collision with or crushed between the equipment particularly in and around ramped areas.

5.3 **Working alongside other contractors**

The nature of the work and the timescales involved make it necessary to work at the same time as other contractors on the site. There are risks to staff from other contractor's activities for example:

The lighting contractor

- Moving, placing and unpacking/packing equipment
- Rigging and de-rigging lighting structures and equipment
- Laying and removing cables
- Working overhead flying and focussing lighting

The staging contractor

- Rigging and de-rigging
- Partially complete structures

5.4 Working on raised platforms

Staff could be seriously injured if they fell of any raised area and particularly if they fell onto any object or part of the temporary structure and its fixings.

5.5 Stacking and un-stacking speaker boxes

The stacking of the sound system presents a significant risk to staff and others. The lifting and lowering operations can be hazardous where there are constraints on working space or the floor conditions are un-sound or slippery.

Where a telescopic fork lift or traditional fork lift is available and used to lift, place and stack the sound system, there is a risk from vehicle movements, raised loads, operator error and dislodge equipment or structures.

5.6 Laying of speaker, signal and power cables

The laying of any cable in a temporary environment can create trip hazards. All staff and visitors can be at risk of injury during the rigging and de-rigging operations. Cables not laid away from pedestrian access and egress routes can present trip hazards during performance times, particularly in low light conditions.

The multi-core cables and Front Of House (FOH) power supply cables are to be laid around a route agreed with the venue operator. Biological hazards from body fluids, discarded drug paraphernalia and broken glass could present a significant risk to the health of those persons laying and handling cables and ramps.

5.7 Working under suspended lighting rigs

Staff are at risk from the activities of the lighting contractor, when flying and focusing lighting equipment. Equipment and tools may be dropped from height during the rigging and de-rigging activities. Equipment may fall during performances if not properly secured.

5.8 Connecting and using the temporary mains supply

Temporary and site electrical distribution systems present a higher risk to its users than permanent installations. In particular systems where the power is generated on site by portable generators and the distribution system is open to the weather and accessible to others. There is a significant risk to all staff and visitors, which can result in severe injury or death.

5.9 Connection of electrical equipment not provided by Aquarius Acoustics

Electrical equipment brought onto stage by performers, may not be in a good and well maintained condition. There is a significant risk of death or serious injury from electrocution from faulty or incorrectly wired equipment.

5.10 Wet weather conditions

Foul weather, torrential or heavy rain and high winds can cause electrical equipment and systems to get wet, resulting in dangerous operating conditions, damage to equipment, personal injury or death and curtailment of the event.

5.11 Working outdoors at night

The lack of daylight presents the need for artificial light. Reduce visibility; shadows and lighting contrasts can increase the risk from some activities. Staff and visitors are at increased risk from slips, trips and falls in low light or dark conditions. There is also an increased security risk during late evening and night times including vandalism and the presence of undesirables.

5.12 Emergency and unusual situations

Staff are at risk of serious personal injury in the event of crowd sways and crushes, particularly in the front of stage areas. In circumstances where the crowd is no longer under the control of the event stewards, there is significant risk to staff including violence and aggression.

5.13 Sound & system checks

High levels of noise can cause serious hearing damage. Sudden high level noise output can cause those not expecting it to jump or panic. The result could be fatal or result in serious injury.

5.14 Working in front of large PA systems

Staff who work in the pit at the front of the stage for long periods of time during the performances are at risk from noise and vibration.

5.15 Visitors and un-authorised visitors

Visitors and un-authorised visitors who are not familiar with this type of working environment are themselves at risk from personal injury and could put our staff at risk of injury also. The level of risk will vary greatly dependant on the activities at the time of their visit.

5.16 Temporary Structures

Vibrations from the bass and subsonic frequencies generated by the sound system can have an undesirable effect on temporary structures and anything placed on or fastened to it. Experience has shown that fastenings may become loose over a period of time and freestanding items may move. There is a risk of collapse from stacked items such as speaker stacks and a risk from falling items such as lighting equipment.

5.17 Flying sound system components

The flying of speaker systems is a lifting operation. Staff and others are at risk from falling objects during the rigging, lifting and de-rigging operations.

There is also a risk from structural collapse if proper flying points are not used or their safe working loads exceeded.

6.0 Method statement

6.1 Vehicle movements on the site

There is a significant risk to staff and others from contact with moving vehicles. In particular reversing vehicles and construction vehicles for example Fork lift trucks, cranes and amenity vehicles such as skip wagons and road sweepers.

- 6.1.1 If available a site plan showing vehicle access, loading and unloading and traffic routes shall be obtained from the Client.
- 6.1.2 On arrival on site the vehicle driver will report to the Venue Manager or his representative.
- 6.1.3 Vehicles will only be reversed when absolutely necessary and only under the close supervision of a lookout. The lookout will ensure that everyone in the area is aware of the vehicle movements.
- 6.1.4 Vehicles will not be taken off road onto un-metalled or grassed areas unless specifically instructed to do so by the venue Manager. The protection of all grassed areas where the public has access to from damage by wheel rutting is paramount.

6.2 Loading and un-loading and movement of equipment.

Loading and un-loading of sound equipment from the truck presents a risk to staff and others from lifting, lowering, carrying and moving heavy equipment. There is a particular risk to visitors and persons who are not familiar with this type of operation. Most of the equipment is flight cased and on wheels and there is a risk from being injured if in collision with or crushed between the equipment particularly in and around ramped areas.

- 6.2.1 Before the loading and un-loading operations commence, the FOH Engineer or crew boss will inspect all ramps, raised platforms and runways for slips trips and falls, stability and other hazards.
- 6.2.2 To avoid injury to any individual involved in the loading and un-loading operations, only experienced persons will carry out this operation. Visitors or volunteers must be discouraged from assisting.
- 6.2.3 All manual-handling operations will be carried out as a team effort. No one will attempt to lift, lower, push or pull any piece of equipment that is too heavy for him or her on his or her own. Aquarius Acoustic staff are familiar

with the different flight cases and the mass contained within them and all cases are clearly marked. The loading and un-loading operation will be supervised by the FOH Engineer or crew boss.

- 6.2.4 All equipment fitted with wheels will be pushed or pulled to its destination using the ramped access where level changes are necessary. No equipment is to be lifted and carried unless absolutely necessary.
- 6.2.5 Large or heavy pieces of equipment such as mixing desks, cable trunks and amplifier racks will always be team handled.
- 6.2.6 No flight case will be allowed to free wheel down any ramp on its own.
- 6.2.7 All wheeled equipment will be placed and secured on raised platforms so it cannot roll and fall off any un-protected edge.
- 6.2.8 Flight cases will be placed in locations where they will not cause a hazard to other persons working on stage or where the cases will present a hazard during other lifting operations.

6.3 Working alongside other contractors

The nature of the work and the timescales involved make it necessary to work at the same time as other contractors on the site. There are risks to staff from other contractor's activities for example:

The lighting contractor

*Moving, placing and unpacking/packing equipment
Rigging and de-rigging lighting structures and equipment
Laying and removing cables
Working overhead flying and focussing lighting*

The staging contractor

*Rigging and de-rigging
Partially complete structures*

- 6.3.1 The FOH Engineer or Crew Boss must liaise with the Event Manager, Stage Erection Crew and Lighting Engineer to co-ordinate the get-in and rigging of the sound system.

A detailed mobilisation and de-mobilisation plan and timetable have been drawn up. This plan shows all contractors' activities.

Care will be taken to avoid simultaneous rigging operations for example where lighting equipment is being flown or the lighting crew is working above the stage deck installing, setting and focussing lighting. Aquarius Acoustics shall co-operate with other contractors to ensure activities are carried out safely.

The stage should be a designated hardhat area during these operations and access limited to necessary personnel only.

- 6.3.2 The sound crew must not work below any overhead operations.
- 6.3.3 Care must be taken when working alongside lighting contractors when they are laying cables, as there is a significant trip hazard until the cables have been secured.

6.4 Working on raised platforms

Staff could be seriously injured if they fell of any raised area and particularly if they fell onto any object or part of the temporary structure and its fixings.

- 6.4.1 Stage crew must be aware of the dangers of falling from un-protected edges of the stage deck, PA wings and other raised platform areas. Crew should avoid storing cases or equipment directly below any unprotected edge as this could increase the likely hood of serious injury should someone fall.

Where a person could fall off a raised platform and injure him or herself, the Event Manager must ensure there is suitable guarding to the edge of that platform.

- 6.4.2 Stage crew will not remove any edge protection, safety rail or barrier.

6.5 Stacking and un-stacking speaker boxes

The stacking of the sound system presents a significant risk to staff and others. The lifting and lowering operations can be hazardous where there are constraints on working space or the floor conditions are un-sound or slippery.

Where a telescopic fork lift or traditional fork lift is available and used to lift, place and stack the sound system, there is a risk from vehicle movements, raised loads, operator error and dislodge equipment or structures.

- 6.5.1 Most speaker boxes are too heavy for any single person to lift. The sound system will be placed and stacked by at least a two-man team but a four-man team is preferable. Where a forklift truck and operator is available and access permits its use, this will be used for the lifting operations.
- 6.5.2 Where a forklift truck is used one member of the Stage Crew will be designated as the look out to give instructions to the driver. All Stage Crew will remain in full view of the driver until the driver has indicated he has completed all manoeuvres.

- 6.5.3 Web ratchet straps will be used to secure the sound system and prevent movement from vibration.

6.6 Laying of speaker, signal and power cables

The laying of any cable in a temporary environment can create trip hazards. All staff and visitors can be at risk of injury during the rigging and de-rigging operations. Cables not laid away from pedestrian access and egress routes can present trip hazards during performance times, particularly in low light conditions.

The multi-core cables and Front Of House (FOH) power supply cables are to be laid on top of the grass and covered by cable ramps. Biological hazards from dog excrement, discarded drug paraphernalia and broken glass could present a significant risk to the health of those persons laying and handling the cables and ramps.

- 6.6.1 All cable runs should be kept away from stage access and exit routes wherever possible.
- 6.6.2 Where cable runs must cross stage access and exit routes they should be laid across the route at 90° at the narrowest point and at least 3 feet away from any change in level, ramped or stepped area.
- 6.6.3 Cables that cross stage access and exit routes must be securely marked and secured and where available, ramped or matted.
- 6.6.4 Laying cables across grassed areas could expose the Stage Crew to dog excrement, sharps and other materials that could carry or transmit diseases or infections. All crew will wear gloves during this operation and maintain a high-level of personal hygiene. Stage Crew must always wash their hands before eating or drinking. In the case of soiled clothing, you must change your soiled clothing as soon as practical.

6.7 Working under suspended lighting rigs

Staff are at risk from the activities of the lighting contractor, when flying and focusing lighting equipment. Equipment and tools may be dropped from height during the rigging and de-rigging activities. Equipment may fall during performances if not properly secured.

- 6.7.1 Stage Crew must not work below any rigging or flying operations being carried out by the lighting contractor.
- 6.7.2 The stage is considered to be a hardhat area whilst the lighting systems are being installed. Stage Crew must avoid working under or near these types of operations.

6.7.3 *The Event Manager can significantly reduce the risks from overhead work by allowing adequate time for these works to be completed before the sound system is rigged. If time constraints are tight, parts of the sound system can be rigged whilst the lighting is being flown and rigged where the crew do not have to work on the stage and under overhead works. For example PA wings, Front of House and Multi-core.*

6.8 Connecting and using the temporary mains supply

Temporary and site electrical distribution systems present a higher risk to its users than permanent installations. In particular systems where the power is generated on site by portable generators and the distribution system is open to the weather and accessible to others. There is a significant risk to all staff and visitors, which can result in severe injury or death.

- 6.8.1 No electrical equipment is to be connected unless the Event Manager has given permission to do so. The Event Manager must be in possession and have available for inspection a hand-over certificate from the inspecting electrician, stating that the installation meets current electrical installation standards and has been properly tested.
- 6.8.2 The sound system and its electrical distribution system must be connected to a dedicated 3-phase 63-amp supply.
- 6.8.3 Any sound equipment brought on stage for use during performances must be connected via the stage sound electrical distribution system under the supervision of the Monitor Engineer or Crew Boss.
- 6.8.4 Under no circumstances must any sound equipment be connected to the mains supply provided for the lighting and vice versa.
- 6.8.5 All mains connections must be prevented from becoming wet.
- 6.8.6 Stage power must be isolated at the stage distribution point at the end of each night's performance.
- 6.8.7 No one must work on or be exposed to any live conductor. All electrical equipment and systems must be properly isolated before alteration, adjustment or repair.
- 6.8.8 The electrical system must remain earth bonded to the stage structure at all times.

6.9 Connection of electrical equipment not provided by Aquarius Acoustics

Electrical equipment brought onto stage by performers, may not be in a good and well maintained condition. There is a significant risk of death or serious injury from electrocution from faulty or incorrectly wired equipment.

6.9.1 It is recognised that at these types of events, artistes may require to use their own electrical equipment. The Monitor Engineer and Stage Crew will be vigilant when connecting electrical equipment not supplied by Aquarius Acoustics to ensure that the equipment they are connecting is in good order and that there are no visible defects that may present an electrical hazard.

6.9.2 If when connecting the equipment to the distribution system, an Earth Leakage Detector, Residual Current Detector or Miniature Circuit Breaker trips out, then that piece of equipment will be removed from stage until the fault has been rectified and a certificate of test and inspection produced.

6.9.3 D.I. boxes and earth lift switches will be used at the discretion of the Sound Engineers.

6.10 Wet weather conditions

Foul weather, torrential or heavy rain and high winds can cause electrical equipment and systems to get wet, resulting in dangerous operating conditions, damage to equipment, personal injury or death and curtailment of the event.

6.11 Working outdoors at night

The lack of daylight presents the need for artificial light. Reduce visibility; shadows and lighting contrasts can increase the risk from some activities. Staff and visitors are at increased risk from slips, trips and falls in low light or dark conditions. There is also an increased security risk during late evening and night times.

6.12 Emergency and unusual situations

Staff are at risk of serious personal injury in the event of crowd sways and crushes, particularly in the front of stage areas. In circumstances where the crowd is no longer under the control of the event stewards, there is significant risk to staff including violence and aggression.

6.13 Sound & system checks

High levels of noise can cause serious hearing damage. Sudden high level noise output can cause those not expecting it to jump or panic. The result could be fatal or result in serious injury.

6.14 Working in front of large PA systems

Staff who work in the pit at the front of the stage for long periods of time during the performances are at risk from noise and vibration.

6.15 Visitors and un-authorised visitors

Visitors and un-authorised visitors who are not familiar with this type of working environment are themselves at risk from personal injury and could put our staff at risk of injury also. The level of risk will vary greatly dependant on the activities at the time of their visit.

6.16 Temporary Structures

Vibrations from the bass and subsonic frequencies generated by the sound system can have an undesirable effect on temporary structures and anything placed on or fastened to it. Experience has shown that fastenings may become loose over a period of time and freestanding items may move. There is a risk of collapse from stacked items such as speaker stacks and a risk from falling items such as lighting equipment.

6.17 Flying sound system components

Only competent and trained riggers will be permitted to plan and carry out flying operations. The flying points, loadings and method will be agreed with the venue operator before arrival on site. The motors, slings, wire ropes and all lifting equipment will only be used if they have a valid test certificate. An exclusion zone will be established and all persons kept out of it during lifting, adjustment and lowering operations. All control gear will be removed from the lifting equipment and the motors isolated to prevent accidental operation. Safety cables will be fitted as required.