ACOUSTICS & NOISE CONTROL

# NOISE MANAGEMENT PLAN

**PRODUCED ON BEHALF OF SWALCLIFFE PARK EQUESTRIAN**

**SUBMITTED TO:**

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## 1. INTRODUCTION

1.1 Idibri has prepared this Noise Management Plan (NMP) on behalf of Swalcliffe Park Equestrian (SPE) which is applicable to events for more than fifty horses.

1.2 This NMP provides details required under condition 5 of the officers report recommending approval of application 14/01762/F by Cherwell District Council. The condition wording is shown in Appendix A.

1.3 This NMP addresses the control of noise from:

- Public address systems
- Power generation equipment
- Construction and dismantling activities
- Traffic movements
- Animal sounds

## 2. NOISE LIMIT

2.1 Application 14/01762/F for Swalcliffe Park Equestrian is recommended for approval subject to the following condition regarding noise:

> *'Prior to any further equestrian events of greater than 50 competing horses taking place on a site, a Noise Management Plan (NMP) detailing the methods to be employed to achieve compliance with a noise limit of 45 dB $L_{Aeq,15min}$'*

2.2 The specified limit of 45 dB $L_{Aeq,15min}$ is set at nearby noise sensitive dwellings which are shown in Appendix B.

2.3 It should be noted that measurement at the boundary of the site alone may not be reliable in demonstrating compliance with the above criterion as typical ambient sound on a non-event day can exceed 45 dB $L_{Aeq,15min}$.

2.4 This NMP provides a practicable and demonstrable method by which to control noise to the specified level based on calculation and near-field measurement.

2.5 In addition, noise monitoring at the boundary of the site may be undertaken provided that the specific noise (public address or plant) is at least 10 dB above the existing ambient level (dB $L_{Aeq,T}$) otherwise measurements would be unreliable.

2.6 It is considered that the assessment criterion is applicable only to sound from public address systems and stationary plant such as generators – see Section 3 and Section 9.

2.7 For other sources such as animals, vehicles on site or sound from setup and take-down of events, this NMP outlines practicable measures by which SPE will limit noise impact at nearby dwellings.

## 3. PUBLIC ADDRESS SYSTEMS

### Introduction

3.1 Noise from public address systems will be controlled by:

- Setting levels for PA systems appropriately.
- Locating and orientating speakers away from noise sensitive receptors
- Using a greater number of low powered speakers to provide sound coverage
- Where necessary, providing screening by hay bales or similar to achieve additional reduction in noise levels.

3.2 Noise from public address systems will be controlled by:

### Method for Control

3.3 SPE will use the information in Appendix C to help determine suitable locations for loudspeakers based on level and distance from dwellings beyond the site boundary.

3.4 The information in Appendix C will be used in combination with subjective assessment and the judgment of events organizers to establish the best practicable setup for public address systems in terms of noise control.

3.5 SPE will implement a methodology for commissioning public address systems similar to the following:

- Set out loudspeaker locations based on requirements for the effective and safe running of an event.
- Determine the distances from each loudspeaker to its nearest dwelling.
- Refer to the graph in Appendix C to determine the maximum measured sound pressure level at a distance of 1 m from the loudspeaker in the direction of the nearest dwelling.
- Use handheld sound measuring equipment such as the iTest Mic (by Studio 6 Digital: http://www.studiosixdigital.com/audio-hardware/itestmic/) with an Apple device to confirm the level of the loudspeaker when operating.
- Adjust the level of the loudspeaker accordingly.

3.6 It is not practicable for loudspeaker locations to be predetermined by SPE for all events in the calendar and the methodology described here will allow an appropriate balance between noise control and flexibility of use to be maintained.

3.7 Where loudspeakers are located in close proximity to dwellings then SPE will use screening to achieve appropriate level limit at dwellings. This will be achieved using hay bales or temporary fences.

### Equipment

3.8 Horn loudspeakers are used for public address at events. A typical loudspeaker type is the Atlas CJ-46. The directivity response for the Atlas CJ-46 is shown in Appendix F which will be used to help set appropriate near field levels and orientation during commissioning prior to events.

### On-Site Engineer

3.9 SPE team and/or an audio engineer will be present on site prior to and during events to set-up, commission and control the PA systems.

3.10 SPE and/or the on-site engineer will maintain a direct line of communication with the person assigned to handle complaints during events. This will allow a timely response to any justified complaints regarding noise from public address systems.

## 4. PLANT

### Introduction

4.1 Power at events is typically provided by portable, local generators.

4.2 Noise from generators will be controlled by:

- Selection/specification of low noise generators, where possible.
- Appropriate location of generators away from nearby noise sensitive dwellings.
- Where necessary, the use of hay bales or similar to provide additional attenuation by screening.

4.3 In addition, information in Appendix C can be applied to establish acceptable distances between portable generators (and similar equipment) and dwellings at the site boundary.

4.4 Noise from portable generators will meet the specified noise level limit at nearby noise sensitive dwellings.

### Method for Control

4.5 SPE will use the information in Appendix C to help determine the suitability of locations for plant in terms of noise.

4.6 This will be achieved in a similar way to that described in Section 3 above also using the information provided in Appendix C.

### Power for Public Address Systems

4.7 Public address systems at events are typically powered using Honda type EU20i generators and the manufacturer's specification for this unit is shown in Appendix F.

4.8 A representative noise level for this type of unit is 54 dB $L_{pA}$ at a distance of 1 m. As a guide, the minimum required distance between a generator of this type and the site boundary is less than10 m.

4.9 SPE will take into consideration the required minimum distance where a number of generators are located close together.

4.10 SPE will review requirements for minimum distances between generators and the site boundary where alternative units are used. This type of assessment can be based on measured or manufacturer's noise level data for a particular generator.

### Independent Retailers

4.11 Independent retailers will be present at events. Some retailers require power and will bring generators.

4.12 Assessment has shown that a distance of 50 m between retail typical generators and the site boundary can be sufficient to achieve the specified noise level limit at nearby noise sensitive receptors.

4.13 Noise from portable generators is not considered significant. This is based on assessment and observations from events. However, where noise from plant is identified by SPE staff as a potential problem then this will be dealt with according to the methods described above including by appropriate location and screening.

## 5. CONSTRUCTION AND DISMANTLING

### Typical Activities and Noise Control

5.1 Construction and dismantling activities are undertaken at events for the following:

- Jumps
- Judges/commentator's cabins
- Tents and gazebos for retail and refreshments
- Delivery/collection of portable toilets
- Installation of temporary stabling

5.2 The potential for disturbance by noise from general event construction and dismantling activities described above will be minimized by:

- Adherence to the agreed operating hours.
- Locating loading and unloading areas away from noise sensitive receptors.
- Allocating clear site operations and vehicles routes away from nearby noise sensitive dwellings and to minimize the need for reversing movements.
- Switching off idling engines, plant or equipment between works.
- Undertaking potentially loud fabrication or assembly works off site or in enclosed workshops nearby.
- Using modern equipment and plant which complies with relevant noise emissions standards.

5.3 Operating hours for set-up and take-down activities associated with events have been agreed by Cherwell District council and SPE. These are shown in Appendix D.

5.4 SPE will seek to maintain good public relations as this can be essential to minimize the potential impact of construction noise.

5.5 The character, intensity, duration and operating hours of the construction and dismantling activities associated with events are in keeping with normal agricultural activity.

### Temporary Stabling

5.6 Temporary stabling is currently used at one event in the season and is a flat-packed semi-rigid system with a tent-like roof which can be erected and dismantled quickly and with minimal noise.

5.7 Temporary stabling will be located away from the noise sensitive receptors. The Location is shown in Appendix E and is approximately 150 m from the nearest dwelling.

5.8 Temporary stabling is transported by heavy goods vehicle. The driver of this vehicle will be instructed to turn off the vehicles engine while the stables are loaded and unloaded.

5.9 Loading and unloading of temporary stabling is undertaken by a tractor. Noise from this source is considered typical in a rural environment.

## 6. TRAFFIC

### Arrivals and Departures

6.1 As part of an effort to control noise, SPE will follow the guidance and protocol stated in the DTPC Transport Statement dated October 2014 which is provided separately by others.

6.2 SPE will also implement guidance in the Swalcliffe Park Equestrian Events Management Plan Report No. J251/EMP revision A.

### On the Site

6.3 Noise from slow moving vehicles traversing the site is insignificant compared with levels generated by both events and non-events traffic travelling at greater speeds on nearby roads and in closer proximity to the noise sensitive dwellings identified in Appendix B.

6.4 Visitor will not be permitted to leave vehicle engines running while parked for events.

6.5 Visitors will not be permitted to play loud music from vehicles or similar during events.

## 7. HORSES AND COMPETITION PROCEDURE

### Horses

7.1 Previous assessment has identified that the whinnying of horses can be audible at the site boundaries.

7.2 For the NMP we consider this a normal and acceptable type of sound in a rural setting. Further, monitoring and/or effective control of noise from horses is impracticable.

7.3 SPE, competitors and spectators alike understand that the comfort and welfare of participating horses is paramount. By enacting this principle, any unnecessary whinnying or other sound from horses is avoided.

### Competition Procedure

7.4 Equestrian events such as show jumping and dressage often use audible signals to call competitors to competition.

7.5 Audible signals can include a bell, buzzers or car horns.

7.6 Previous assessment and observations during events has established that these signals, although sometimes audible at the perimeter are not significant in terms of level or duration and do not require specific measures for control.

## 8. COMMUNICATION AND COMPLAINTS MANAGEMENT

### Communication

8.1 SPE will notify nearby residents of the details of forthcoming events as this can be one of the most effective ways to ensure that the potential for disturbance is minimized.

8.2 SPE will inform all relevant event partners (construction staff, independent retailers, etc) of the importance of noise control.

8.3 Events partners will comply with restrictions on their activities should these be reasonable and justified in the interests of controlling noise.

8.4 SPE will maintain an appropriate level of awareness amongst permanent and temporary staff as to the details and general principles of the NMP.

### Complaints Handling

8.5 SPE will designate a senior member of staff who will be responsible for the handling of complaints during events. Contact details will be made available to Cherwell District Council.

8.6 SPE will operate a complaints telephone number and email address through which noise complaints can be directed. This will enable an immediate response to be made to any reasonable complaints and for SPE, or their designated representative, to assess whether or not action is required.

8.7 Information regarding complaints will be recorded on a standard template which will include but is not limited to:

- The date and time of the compliant.
- The method by which the complaint was made.
- Details of the complainant such as their location, an email address or phone number for follow-up action.
- The nature of the complaint.
- The action taken by SPE in response to the compliant.
- Details of any follow-up contact with the complainant.
- If no follow-up action then the reasons of this.

8.8 SPE will fully investigate all complaints and where reasonable and practicable, will put in place measures to address the issue raised.

8.9 All relevant information will be made available to Cherwell District Council on request.

## 9. NOISE MONITORING

9.1 Specific monitoring of noise from public address systems and plant can be undertaken by measurement in close proximity to these items and compliance with the specified noise level limit and demonstrated by calculation.

9.2 This will take place during the setup/commissioning stage of events according to the method described in Sections 3 and 4 and with reference to the information shown in Appendix C.

9.3 After commissioning and during events, SPE will undertake regular monitoring by subjective assessment at the site boundary and use reasonable judgment to determine if levels of sound from public address systems or plant are likely to cause significant disturbance at nearby dwellings.

9.4 As part of any noise monitoring undertaken, a record will be kept to include details of the date, time and location of measurement, weather conditions and notes concerning noise sources in the area. This information will be made available to Cherwell District Council.

9.5 Officers from Cherwell District Council may undertake monitoring of similar events and SPE will provide full cooperation.

9.6 Those undertaking noise monitoring on behalf of SPE will comply with requests made by Cherwell District.

## APPENDIX A: PLANNING CONDITION

### Application 14/01762/F – Condition 5

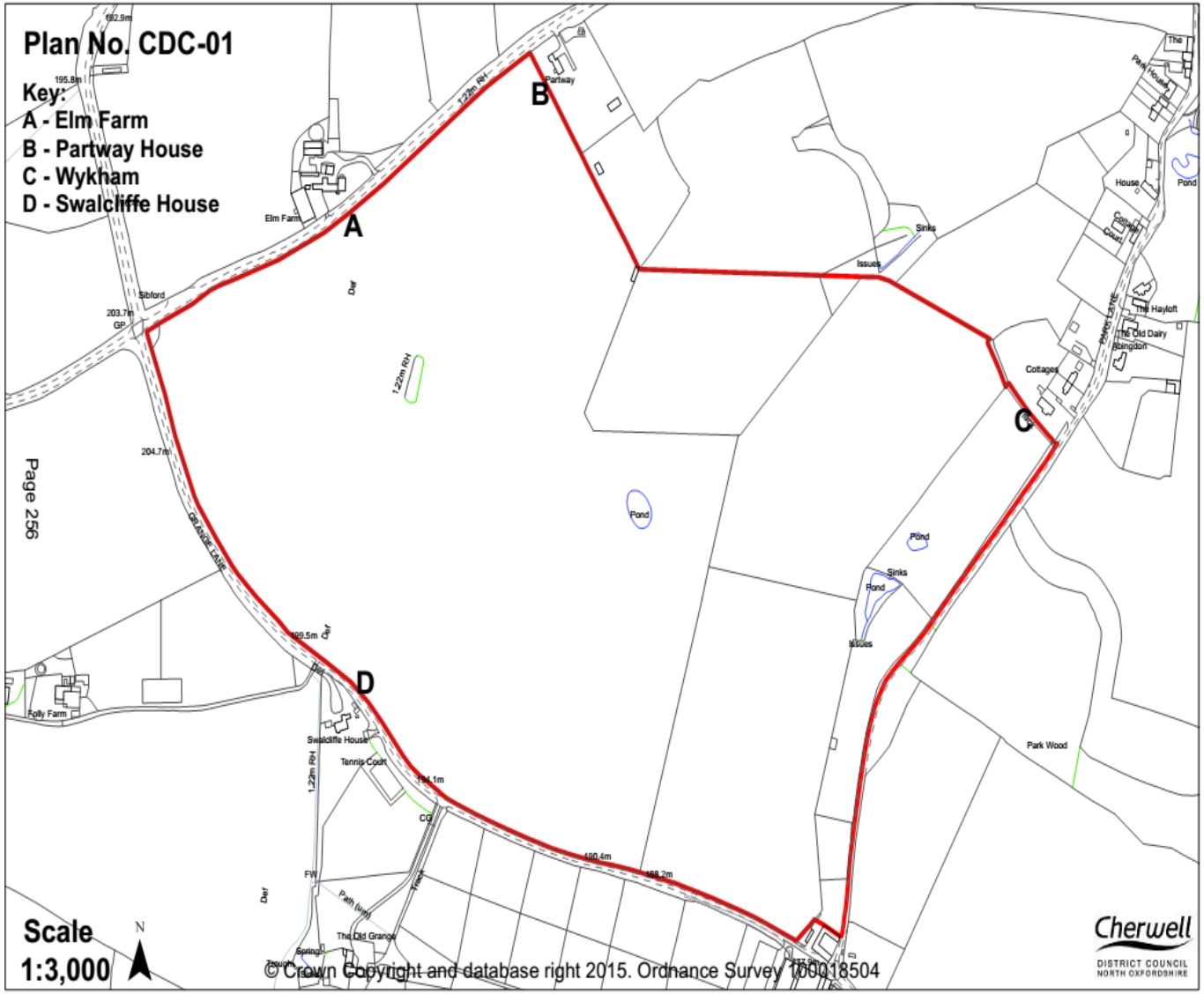
'*Prior to any further equestrian events of greater than 50 competing horses taking place on a site, a Noise Management Plan (NMP) detailing the methods to be employed to achieve compliance with a noise limit of 45 dB* $L_{Aeq,15min}$*, when measured free field at noise sensitive locations adjacent the residential properties of Partway House, Elm Farm, Swalcliffe House and Wykham, shown on the attached plan ref. CDC-01, shall be submitted to and approved in writing by the Local Planning Authority.*

*The NMP must identify all sources of noise generated by the equestrian use which may include those sources of noise associated with the construction and/or dismantling of any temporary structures, the operation of any sound amplification equipment, the internal movement of traffic within the site, hours of operation of the site in all phases of use, etc. The NMP must indicate the means that will be used to reduce noise at source to a minimum and where noise levels cannot be reduced the means of mitigation must be stated. Mitigation may include the sensitive positioning of certain elements of the use in such a way as to minimise the impact of a particular activity on noise sensitive premises. The NMP must also include a method and timetable for the periodic quantitative monitoring of noise emitted from the site and a procedure for recording and responding to complaints received either directly from local residents or via the Local Authority.*

*The NMP once approved must thereafter be implemented. Should justified complaints be received the NMP will be amended in such a way that prevents the recurrence of complaints of that type in the future. No operational changes shall be made in relation to noise without prior written approval by the Local Planning Authority in which case a revised NMP shall be submitted approved through the submission of a further 'approval of details reserved by condition' application.*

*Reason - In order to safeguard the amenities of the area and to comply with Policy ENV1 of the Adopted Cherwell Local Plan and Government guidance contained within the National Planning Policy Framework.*'

## APPENDIX B: PLAN CDC-01 NOISE SENSITIVE LOCATIONS



## APPENDIX C: SUPPORTING INFORMATION

SPE will use the information below to determine suitable distances between equipment which generates sound and dwellings at the boundary of the site.

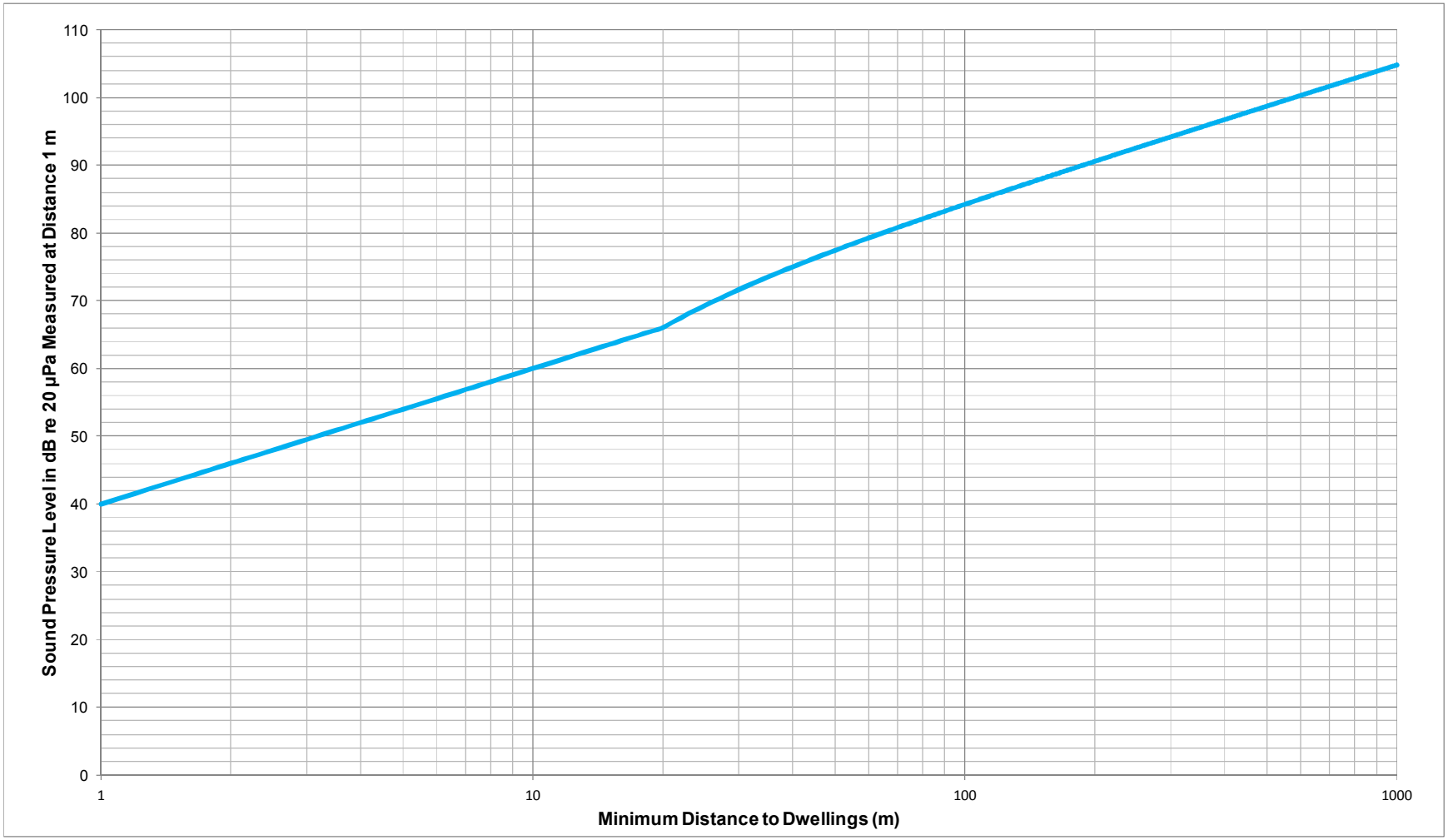
The chart is intended for use with:

- Public address systems and loudspeakers
- Stationary plant such as generators, air conditioning units

Notes to accompany the below graph are:

- The calculations used to create the graph below exclude air absorption, meteorological effects (such as wind direction) and screening by topography or structures.
- Calculations are calibrated to achieve a level of 40 dB $L_{pA}$ at the specified distance to nearby dwellings.
- The sound pressure level limits in the below graph are valid only at a measurement distance of 1 m from the source equipment or loudspeaker.
- This information is intended as a guide and based on a single noise source. Detailed calculations could be undertaken as part of events commissioning to assess cumulative impacts where the complexity of a specific setup warrants. Our experience of events is that sound sources are located suitably far apart that cumulative effects are insignificant.
- Where units are screened by structures, vehicles, hay bales, etc it may be acceptable for the maximum required distance to dwellings to be reduced. This can be assessed either by calculation or by subjective assessment. In many case, the sound level, distance and screening effects can mean that equipment is inaudible at the site boundary.
- With specific reference to loudspeaker locations, the use of the below graph can take account of off-axis response by ensuring that measurements to verify the required sound level are made in direction of nearby dwellings rather than according to the orientation of the loudspeaker.

Appendix C continued…




*Sound pressure level of sound source (measured at 1m) versus required distance from dwellings at the site boundary*

## APPENDIX D: OPERATING HOURS

The following hours of operation will apply:

| Description | Operating Hours |
|---|---|
| Equestrian Events (1 and 2 day events) | 08:00 - 20:00 |
| Set Up Days | 08:00 - 20:00 |
| Take-Down Days | 08:00 - 20:00 |

*Operating hours for SPE events*

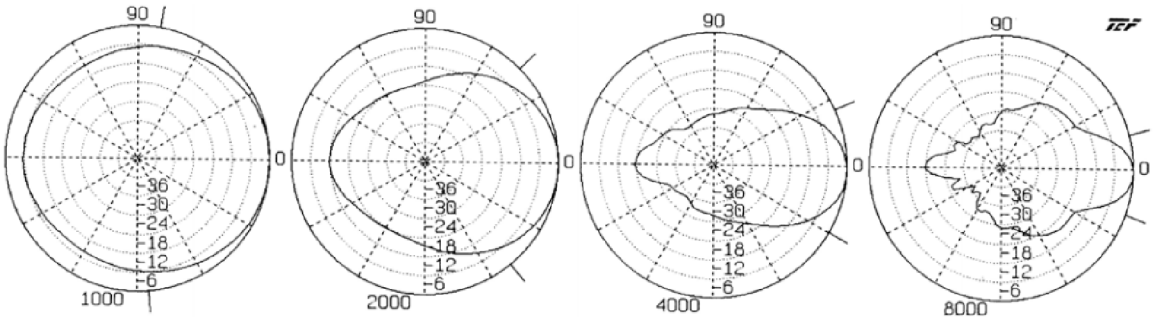
## APPENDIX E: LOCATION OF TEMPORARY STABLING

## APPENDIX F: TECHNICAL INFORMATION

### Atlas CJ-46 Horn Loud Speaker

The directivity of the Atlas CJ-46 is shown below and is taken from the manufacturers' technical data.

**CJ-46 (Normalized to Zero on Axis) (-6dB)**




### Honda EU20I Generator Specification

| | |
|---|---|
| **Primary usage** | Leisure Use |
| **Type** | Portable |
| **Max output (W)** | 2000 |
| **Voltage stability (%)** | + or - 1 |
| **Output voltage (V)** | 230 |
| **Rated output (W)** | 1600 |
| **Frequency rating (Hz)** | 50 |
| **DC voltage (volts)** | 12 |
| **Power Stability** | Inverter Technology® |
| **DC current (amps)** | 8 |
| **Engine type** | GX100 |
| **Type** | single cylinder 4-stroke OHV air cooled |
| **Oil capacity** | 0.4 litre with Oil Alert® |
| **Starter system** | recoil |
| **Length (mm)** | 510 |
| **Width (mm)** | 290 |
| **Height (mm)** | 425 |
| **Dry weight (kg)** | 21 |
| **Noise Level (1/4 load) (dB(a))** | 52 |
| **Run Time, up to (hrs)** | 10 |
| **Fuel tank capacity ( litres)** | 4.1 |
| **Fuel type** | Unleaded petrol |