



**Sydney Cricket Ground Trust**

**NOISE MONITORING, AFL: SYDNEY  
SWANS VS COLLINGWOOD MAGPIES  
MAY 2019**

**May 2019**



Report Prepared by: **EVENT NOISE MANAGEMENT**

Queensland – 3/4 Tombo Street, Capalaba, QLD 4157  
New South Wales – 69 Reservoir Street, Surry Hills, NSW 2010

☎ 1300 851 761  
✉ enm@ane.com.au

Project Reference: 5701.1

Document Title: Noise Monitoring, AFL: Sydney Swans VS Collingwood Magpies may 2019

Client: Sydney Cricket Ground Trust

Document Reference: /Network/Projects/5701/Reporting/AFL\_2019/5701\_AFL\_Report01.odt

Version:	Description:	Date:	Author:	Checked by:	Approved by:
00	Draft for internal review	28/05/19	DR	BW	-
01	Report for Client	29/05/19	DR	BW	BW
02					
03					

**Company:**

EVENT NOISE MANAGEMENT is a registered trading name of Air Noise Environment Pty Ltd in Queensland and New South Wales.

**Copyright:**

EVENT NOISE MANAGEMENT retains ownership of the copyright to all reports, drawings, designs, plans, figures and other work produced by EVENT NOISE MANAGEMENT during the course of fulfilling a commission. The client named on the cover of this document shall have a licence to use such documents and materials for the purpose of the subject commission provided they are reproduced in full or, alternatively, in part with due acknowledgement to EVENT NOISE MANAGEMENT. Third parties must not reproduce this document, in part or in full, without obtaining the prior permission of EVENT NOISE MANAGEMENT.

**Disclaimer:**

This document has been prepared with all due care and attention by professional environmental practitioners according to accepted practices and techniques. This document is issued in confidence and is relevant only to the issues pertinent to the subject matter contained herein. EVENT NOISE MANAGEMENT holds no responsibility for misapplication or misinterpretation by third parties of the contents of this document. If this document does not contain an original signature, it is not an authorised copy. Unauthorised versions should not be relied upon for any purpose by the client, regulatory agencies or other interested parties.

Where site inspections, testing or fieldwork have taken place, the report is based on the information made available by the client or their nominees during the visit, visual observations and any subsequent discussions with regulatory authorities. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to EVENT NOISE MANAGEMENT is both complete and accurate. It is further assumed that normal activities were being undertaken at the site on the day of the site visit(s).

## **Executive Summary**

*Monitoring of noise levels at sensitive receptors in the area surrounding Sydney Cricket Ground was undertaken during the AFL match between Sydney Swans and Collingwood Magpies held on 24 May 2019 to determine compliance with the following noise criteria defined in the site's Noise Management Plan (NMP):*

*'When measured at the specified monitoring locations, the  $L_{Amax}$  of noise emanating from any sound amplification equipment must not exceed 60 dB (A) during any sporting events.*

*This noise limit applies to wind speeds up to 5m/s, above which wind generated noise on the microphone limits measurement accuracy. During periods of wind greater than 5m/s this noise limit does not apply.*

*Noise levels measured when wind speed exceed 5 m/s (at microphone height) should not be used to measure compliance with noise limits, as wind generated noise may influence measurement accuracy. During periods of wind greater than 5 m/s the Trust must continue to take all reasonable and feasible actions to minimise noise.'*

*Noise levels were measured for the duration of the amplified activities associated with the event from 7:30 pm though 11:00 pm at the three positions required by the Noise Management Plan.*

*Throughout the monitoring, noise levels were recorded at each location every two minutes. During each two minute period notes were also made regarding the sources of noise in the area and the source of any potential exceedences of the noise criteria. The noise levels recorded represent the highest RMS noise level recorded during the two minute period.*

*During the match it was identified that noise levels from the event PA system were within the criteria defined in the site's NMP throughout the noise monitoring.*

*The event noise was audible:*

- At various times at Position 1, and measured between 45 dBA and 55 dBA*
- At various times at Position 2, and measured between 48 dBA and 54 dBA*
- Occasionally at Position 3, and measured noise from the event was less than 50 dBA*

*Ambient levels as a result of vehicles, pedestrians, and other extraneous sources in the local areas, were measured up to and above the criteria (60 dB(A)) frequently.*

*On two occasions at Position 1, instantaneous levels (1/8th second) were above the 60 dB(A) criteria as a result of PA announcer. The operators were informed and volumes adjusted to within compliance immediately on both occasions.*

*All positions were generally dominated by ambient activity such as vehicle noise, pedestrians, pub noise, birds, and the occasional aircraft. Event noise was generally audible during a break in or minimal ambient activity.*

*No noise complaints were received by the Trust or by Event Noise Management staff during the event.*

## CONTENTS

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
<b>1.1</b>	<b>SCOPE OF ASSESSMENT</b>	<b>1</b>
<b>1.2</b>	<b>EVENT DETAILS</b>	<b>1</b>
<b>1.3</b>	<b>EVENT NOISE CRITERIA</b>	<b>1</b>
<b>2</b>	<b>MONITORING METHODOLOGY</b>	<b>3</b>
<b>2.1</b>	<b>MONITORING POSITIONS</b>	<b>3</b>
<b>2.2</b>	<b>OPERATORS</b>	<b>4</b>
<b>2.3</b>	<b>MONITORING EQUIPMENT</b>	<b>4</b>
<b>2.4</b>	<b>WEATHER CONDITIONS DURING THE EVENT</b>	<b>5</b>
<b>3</b>	<b>RESULTS OF MONITORING</b>	<b>6</b>
<b>3.1</b>	<b>METHODOLOGY</b>	<b>6</b>
<b>3.2</b>	<b>MONITORING RESULTS</b>	<b>6</b>
<b>3.3</b>	<b>EVENT HOTLINE</b>	<b>7</b>
<b>4</b>	<b>CONCLUSIONS</b>	<b>8</b>

### **APPENDIX A: ACOUSTIC GLOSSARY**

### **APPENDIX B: DETAILED MONITORING DATA**

# 1 INTRODUCTION

## 1.1 SCOPE OF ASSESSMENT

Sydney Cricket Ground Trust (SCGT) commissioned Event Noise Management to conduct event noise monitoring during the AFL Swans VS Magpies match held on 24 May 2019 as part of the requirements under the Noise Management Plan (NMP) for the facility<sup>1</sup>.

This report presents a summary of the results of the monitoring and a comparison with the noise criteria for the event as defined in the NMP.

## 1.2 EVENT DETAILS

The sporting event was held at the Sydney Cricket Sports Ground on Friday 24<sup>th</sup> of May 2019. The gates opened at 5:50 pm, the game commenced at 7:50pm and concluded at approximately 10:20 pm. Amplified music, announcements and advertising occurring at various times between these periods, and after the game, continuing until 11:00 pm at low levels.

## 1.3 EVENT NOISE CRITERIA

Noise limits for sporting events held at Sydney Cricket Sports Ground are provided in the site's NMP as follows:

*'When measured at the specified monitoring locations, the  $L_{Amax}$  of noise emanating from any sound amplification equipment must not exceed 60 dB (A) during any sporting events.*

*This noise limit applies to wind speeds up to 5m/s, above which wind generated noise on the microphone limits measurement accuracy. During periods of wind greater than 5m/s this noise limit does not apply.*

*Noise levels measured when wind speed exceed 5m/s (at microphone height) should not be used to measure compliance with noise limits, as wind generated noise may influence measurement accuracy. During periods of wind greater than 5 m/s the Trust must continue to take all reasonable and feasible actions to minimise noise.'*

Section 6.2.1 of the NMP details the monitoring positions that must be considered as follows:

### **'Monitoring Locations**

*For both sporting events and concerts attended monitoring locations will be as set out below.*

### **For activities taking place at the SCG:**

- *At a point within one (1) metre of the boundary nearest to the SCG, at the corner of Poate Road and Poate Lane, Centennial Park;*

<sup>1</sup> Sydney Cricket Ground and Allianz Stadium, Noise Management Plan (NMP), prepared by ERM for Sydney Cricket and Sports Ground Trust (SCGT), April 2015



- *At a point within one (1) metre of the boundary nearest to the SCG, at the corner of Leinster and Regent Streets, Paddington; and*
- *At a point within one (1) metre of the boundary nearest to the SCG, at the corner of Robertson Road and Martin Road (northern intersection), Moore Park.*



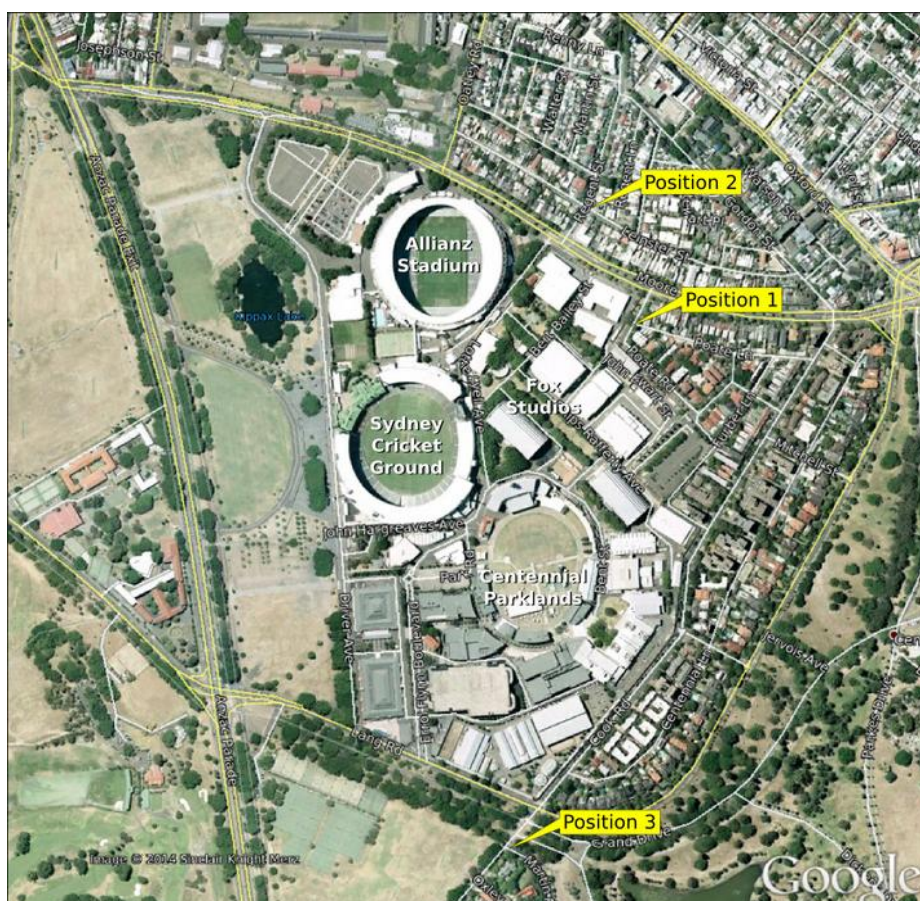
## 2 MONITORING METHODOLOGY

### 2.1 MONITORING POSITIONS

Monitoring during the match were undertaken at three fixed monitoring positions as required by the NMP. Table 2.1 presents a summary of the monitoring locations assessed during the event, with the monitoring positions identified on Figure 1.

**TABLE 2.1: SUMMARY OF MONITORING POSITIONS**

Position	Description
1	Fixed monitoring position located within 1 m of the front boundary at the corner of Poate Road and Poate Lane
2	Fixed monitoring position located within 1 m of the front boundary at the corner of Leinster and Regent Streets
3	Fixed monitoring position located within 1 m of the front boundary at the corner of Robertson Road and Martin Road (northern intersection)



**Figure 1: Noise Monitoring Positions (External Fixed Locations)**

## 2.2 OPERATORS

During the monitoring, Event Noise Monitoring personnel were located at each position identified in Figure 1. The monitoring exercise was undertaken by the following personnel:

- Position 1: James Daramola: BEng(Mech), AAS (Grad).
- Position 2: Daniel Richardson: Certificate III IDMT (Undergrad)
- Position 3: Beau Weyers: BEng(Mech and Space), MAAS, RPEQ

## 2.3 MONITORING EQUIPMENT

Table 2.2 presents a summary of the equipment used the monitoring. The sound level meters used for the monitoring conform to Australian Standard 1259 "Acoustics - Sound Level Meters", (1990) Type 1 (precision sound level meter), and have an accuracy suitable for both field and laboratory use.

The sound level meters and calibrator have been checked, adjusted and aligned to conform to the Type 1 specifications by a third party NATA accredited laboratory within the last 24 months and issued with a conformance certificate.

**TABLE 2.2: SUMMARY OF MONITORING EQUIPMENT**

Position	Instrument Model	Instrument Serial	Instrument Calibration Due Date	Field Pre-Calibration	Field Post-Calibration
1	Nor140	1404663	12/06/19	94.0	94.0
2	Nor140	1404664	21/11/19	94.0	94.0
3	Nor140	1405306	14/07/19	94.1	94.1
Field Calibrator	BNK 4231	3012190	13/05/19	-	-
Field Calibrator	Rion NC-74	34483804	27/11/19	-	-

Field calibrations of each of the instruments were also undertaken prior to and immediately after the monitoring was completed. Less than 0.5 dB drift occurred over the measurement periods. All instruments were fitted with a windshield and monitoring was completed at a height of 1.5 m above ground level.



## 2.4 WEATHER CONDITIONS DURING THE EVENT

For the duration of the game and amplified activities, there were generally northerly winds on Friday 24<sup>th</sup> May. The weather included low thin cloud cover and mild temperatures cooling as the night progressed.

The recorded wind direction had the potential to transport noise toward the southern compliance monitoring position, leading to lower noise levels observations related to the event noise at other locations.

Table 2.3 presents a summary of the meteorological data from Sydney Airport during the event.

**TABLE 2.3: SUMMARY OF METEOROLOGICAL DATA**

Time (pm)	Temp	Rain (mm)	Relative Humidity	Wind Direction	Wind Speed (km/hr)	Gusts (km/hr)
7:00	18.6	0	51	NNW	9	9
7:30	18.3	0	50	NW	9	11
8:00	17.4	0	50	WNW	7	9
8:30	17.9	0	52	N	9	11
9:00	18.1	0	54	N	7	9
9:30	17.5	0	55	N	7	11
10:00	17	0	54	N	11	11
10:30	15.6	0	61	NNW	13	15
11:00	15.1	0	64	NNW	13	15
11:30	15.6	0	64	NNW	11	13

## **3 RESULTS OF MONITORING**

### **3.1 METHODOLOGY**

Noise monitoring was completed continuously at each location with the maximum noise level recorded for every two minute period. During the monitoring, observational notes were also made regarding the sources of noise in the area and the source of any potential exceedances of the noise criteria. The noise levels represent the highest RMS noise level recorded during the two minute period. Hence, even where exceedances are identified, it is possible such exceedances are due to noise sources unrelated to amplified event noise (e.g. road traffic noise).

Where a measured value resulted in a level of noise above the criteria, and directly attributed to the amplified noise from the event, the required adjustment is relayed to the PA / mixing desk operator to reduce to within compliant levels. Live attended monitoring and observation allowed the identification of SCG related noise levels, and exclusion of extraneous noise sources.

### **3.2 MONITORING RESULTS**

Noise monitoring results were recorded at each location every two minutes of amplification between 7:30 pm and 10:50 pm on Friday 24<sup>th</sup> of May 2019.

It is noted that event noise was audible from commencement of measurements, as gates opened at 5:50 pm, however was sporadic in content and audibility, generally remaining just perceptible above ambient noise (traffic, pedestrians, aircraft). Generally the amplified activities from SCG were more clearly audible at Positions 1 and 2, despite the northerly winds toward Position 3.

During periods of elevated music or announcement (commencement, quarter and half-time breaks, and conclusion) the amplified activities were audible and distinguishable from general ambient noise, although generally remaining much lower than maximum contributions from traffic. Amplified sound included ground PA announcements, box score announcements, advertising and background music were occasionally audible.

At Position 1, amplified sound was audible when in operation but generally between 48 and 54 dB(A) with only two occasions of very brief levels (1/8th of a second) above 60 dB(A) maximum variance of 3 dB(A).

At Position 2, amplified sound was audible when in operation but generally between 45 and 55 dB(A) with only one occasion of very brief levels (1/8th of a second) at 60 dB(A) from a PA announcement.

At Position 3, amplified sound was audible when in operation but generally below 50 dB(A) with no periods above 60 dB(A), despite the northerly winds.

The measured noise levels and associated observational records gathered during the monitoring are presented in Appendix B. During the AFL match it was identified that noise levels from the event were within the criteria defined in the site's NMP throughout the noise monitoring with the following exceptions:

- 8:30 pm – Position 1, PA announcement at 63 dB(A), direction to operator was provided

and adjustments made. Music was noted to be 56 dB(A) or less. Excursion as a result of announcer.

- 9:02 pm – Position 1, PA announcement at 62 dB(A), direction to operator was provided and adjustments made. Music was noted to be 55 dB(A) or less. Excursion as a result of announcer.

It is noted that almost all recorded  $L_{Amax}$  noise levels for a 2-minute period, were measured up to or greater than the noise criteria 60 dB(A) set in the NMP. However, these noise levels do not represent non-compliance with the NMP as the  $L_{Amax}$  levels recorded were attributable to extraneous noise sources and not the PA system. These sources included the following: passing vehicles, aircraft overhead, pedestrians, birds, emergency service sirens (P1 and P2). This also included the periods where amplified event noise was above the 60 dB(A) criteria. Therefore the measured exceedances were unlikely to impact the area. However were taken as an opportunity to adjust the system and programmed upper volumes, to ensure levels do not exceed in the future.

### 3.3 EVENT HOTLINE

During the event no noise complaint related calls were received on the event hotline established by the Sydney Cricket Ground Trust. No complaints were received by Event Noise Management staff for investigation.

## 4 CONCLUSIONS

Noise monitoring of amplified noise from Sydney Cricket Ground during the AFL Swans vs match held on 24<sup>th</sup> May 2019 was completed at three positions as required by the site's Noise Management Plan. Noise levels were measured for the duration of the amplified activities associated with the event from 7:30 pm to 11:00 pm.

During the AFL match it was identified that noise levels from the event were within the criteria defined in the site's NMP through the noise monitoring. At all positions the event noise was Audible at various times and exceeded briefly on a few occasions.

During the event, the acoustic environment was defined by road traffic noise along Moore Park Road, and Lang Road. For the majority of the time, the actual amplified sound levels were difficult to distinguish from the road traffic noise levels, and were noted to be generally below the traffic levels. During periods of low traffic, the noise monitoring and site observations confirmed that amplified sound was below the 60 dB(A) limit for the majority of the time. However, on 2 occasions at Position 1 observations were able to identify instantaneous noise levels (1/8th of a second) from PA announcements above the limit by up to 3 dB(A). In each of these instances, the designated sound engineer was informed following each of the exceedences for rectification. Music remained well within compliance, with only variability of PA announcer resulting in the short excursion.

The majority of the noise levels measured at all three positions were dominated by extraneous noises sources, and most periods measured above the criteria were as a result of extraneous noise sources. Event noise levels were obtained during a break in traffic, or during periods of minimal extraneous noise.

Therefore the measured exceedances were unlikely to impact the area. However were taken as an opportunity to adjust the system and programmed upper volumes, to ensure levels do not exceed in the future.

No noise complaints were received by the Trust or by Event Noise Management staff during the event.

# **APPENDIX A**

## **ACOUSTIC GLOSSARY**

## APPENDIX A: GLOSSARY OF ACOUSTIC TERMINOLOGY

<b>A-Weighting</b>	A response provided by an electronic circuit which modifies sound in such a way that the resulting level is similar to that perceived by the human ear.
<b>dB (decibel)</b>	This is the scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and the reference pressure (0.00002N/m <sup>2</sup> ).
<b>dB(A)</b>	This is a measure of the overall noise level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
<b>Facade Noise Level</b>	Refers to a sound pressure level determined at a point close to an acoustically reflective surface (in addition to the ground). Typically a distance of 1 metre is used.
<b>Free Field</b>	Refers to a sound pressure level determined at a point away from reflective surfaces other than the ground with no significant contribution due to sound from other reflective surfaces; generally as measured outside and away from buildings.
<b>Hertz (Hz)</b>	A measure of the frequency of sound. It measures the number of pressure peaks per second passing a point when a pure tone is present.
<b>L<sub>Aeq</sub> Equivalent Continuous Sound Level</b>	This is the equivalent steady sound level in dB(A) containing the same acoustic energy as the actual fluctuating sound level over the given period. For a steady sound with small fluctuations, its value is close to the average sound pressure level.
<b>L<sub>A90,T</sub></b>	This is the dB(A) level exceeded 90% of the time, T.
<b>L<sub>A10,T</sub></b>	This is the dB(A) level exceeded 10% of the time, T.
<b>L<sub>A50, T</sub></b>	This is the dB(A) level exceeded 50% of the time, T.
<b>L<sub>WA</sub></b>	The A-weighted sound power level in dB.





# **APPENDIX B**

## **DETAILED MONITORING DATA**



## EVENT NOISE MANAGEMENT

<b>Project Number:</b>	5701	<b>Date:</b>	24 May 2019
<b>Project Description:</b>	SCG - AFL		
<b>Monitoring Location:</b>	Position 1 – Corner of Poate Lane and Poate Street		
<b>Operator:</b>	JD		
<b>Weather Description:</b>	Slightly Overcast with light winds		
<b>Instrument:</b>	Nor 10	<b>Calibrator Model:</b>	BNK 4321
<b>Instrument Serial:</b>	1404663	<b>Calibrator Serial:</b>	3012190
<b>Instrument NATA Calibration Validity:</b>	29/06/2017	<b>Calibrator NATA Calibration Validity:</b>	13/05/19
<b>Pre-calibration:</b>	94.0	<b>Post calibration:</b>	94.0

Time	L <sub>Amax</sub> dB(A)	Description of Noise and/or Changes to Weather
19:32:00	68.2	Nearby Van Noise, PA Just audible
19:34:00	70.9	Nearby Car Noise, PA Just audible
19:36:00	72.6	Motorbike, Road Noise, Music audible but low volume (orchestral)
19:38:00	72.5	Road Noise, Plane
19:40:00	66.7	Road Noise
19:42:00	70.6	Road Noise
19:44:00	70.7	Road Noise, Plane
19:46:00	74.1	Road Noise, Plane
19:48:00	73.2	Road Noise, Plane
19:50:00	71.7	Road Noise and Pedestrians
19:52:00	72.2	Road Noise and Pedestrians, Plane, Siren
19:54:00	68.3	Siren, Road Noise, Crowd
19:56:00	69.0	Crowd, Pedestrians, Road Noise
19:58:00	70.5	Crowd, Taxi, Road Noise

Time	L <sub>Amax</sub> dB(A)	<u>Description of Noise and/or Changes to Weather</u>
20:00:00	69.6	Crowd, Pedestrians, Car
20:02:00	65.9	Crowd on/off and Road Noise
20:04:00	72.8	Crowd on/off and Road Noise
20:06:00	68.7	Crowd on/off and Road Noise
20:08:00	73.3	Crowd on/off and Road Noise
20:10:00	68.4	Crowd on/off and Road Noise
20:12:00	72.7	Crowd on/off and Road Noise
20:14:00	70.7	Crowd on/off and Road Noise
20:16:00	66.7	Crowd on/off and Road Noise
20:18:00	68.1	Crowd on/off and Road Noise
20:20:00	64.7	Crowd on/off and Road Noise and Helicopter
20:22:00	73.1	Cars and PA/ads audible
20:24:00	72.3	Cars and PA/ads audible, Motorbike, Bat
20:26:00	67.9	Cars and PA audible up to 60 dB(A)
20:28:00	71.5	Motorbike Max, Cars and Music audible
20:30:00	72.6	Crowd and road noise, no amplification
20:32:00	73.5	Crowd and road noise, no amplification
20:34:00	71.5	Crowd and road noise, no amplification
20:36:00	73.6	Crowd and road noise, no amplification
20:38:00	64.3	Crowd, Road Noise
20:40:00	67.6	Crowd, Road Noise
20:42:00	73.2	Crowd, Road Noise
20:44:00	64.5	Crowd, Road Noise
20:46:00	72.3	Cars and Crowd, Road Noise

Time	L <sub>Amax</sub> dB(A)	Description of Noise and/or Changes to Weather
20:48:00	61.1	Road Noise
20:50:00	66.5	Road Noise
20:52:00	63.6	Police Siren, Cars and Pedestrians
20:54:00	68.5	Road Noise, Nearby Car and Crowd
20:56:00	78.3	Motorbike, Road Noise
20:58:00	68.1	Male Commentary Audible, Plane, Fireworks, Siren
21:00:00	66.9	Road Noise and Fireworks
21:02:00	62.4	Road Noise and music barely audible
21:04:00	69.8	Road Noise and Nearby Cars
21:06:00	63.3	Road Noise, Fireworks, Crowd Noise
21:08:00	71.5	Crowd, Road Noise
21:10:00	57.6	Road Noise
21:12:00	62.9	Road Noise, crowd
21:14:00	68.6	Road Noise, Commentary and Horn
21:16:00	69.7	Road Noise, music audible
21:18:00	67.9	Road Noise
21:20:00	72.7	Crowd, Road Noise
21:22:00	68.9	Road Noise
21:24:00	63.8	Road Noise, crowd
21:26:00	63.2	Road Noise
21:28:00	63.6	Road Noise, music audible
21:30:00	66.5	Road Noise, crowd
21:32:00	67.2	Road Noise, crowd
21:34:00	62.0	Road Noise, crowd

Time	L <sub>Amax</sub> dB(A)	<u>Description of Noise and/or Changes to Weather</u>
21:36:00	72.2	Road Noise, crowd
21:38:00	66.0	Road Noise, crowd, localise ute gate closure maximum
21:40:00	69.6	Road Noise, crowd
21:42:00	72.5	Road Noise, crowd
21:44:00	59.8	Road Noise, crowd, pedestrians
21:46:00	59.4	Road Noise, crowd, pedestrians
21:48:00	68.5	Road Noise, crowd
21:50:00	60.7	Road Noise
21:52:00	62.2	Road Noise
21:54:00	61.5	Road Noise, crowd, commentary, ads, horn
21:56:00	61	Road Noise, crowd, commentary
21:58:00	62.6	Road Noise, pedestrians
22:00:00	66.6	Road Noise, pedestrians
22:02:00	65.5	Road Noise
22:04:00	66.3	Road Noise, pedestrians
22:06:00	70.1	Road Noise, pedestrians
22:08:00	61.8	Road Noise, pedestrians
22:10:00	65.0	Road Noise, pedestrians
22:12:00	63.3	Road Noise, pedestrians
22:14:00	62.2	Road Noise, pedestrians
22:16:00	60.3	Road Noise, pedestrians
22:18:00	68.9	Road Noise
22:20:00	66.8	Road Noise
22:22:00	66.5	Road Noise, Crowd

Time	L <sub>Amax</sub> dB(A)	<u>Description of Noise and/or Changes to Weather</u>
22:24:00	69.2	Road Noise
22:26:00	57.6	Road Noise
22:28:00	63.3	Road Noise and Pedestrians, Crowd
22:30:00	64.1	Road Noise, Crowd
22:32:00	71.1	Road Noise and Pedestrians
22:34:00	72.2	Road Noise and Pedestrians
22:36:00	68.3	Road Noise, crowd, commentary, ads, horn
22:38:00	61.9	Road Noise, crowd, commentary, ads, horn
22:40:00	63.6	Road Noise and Pedestrians, Car Horn
22:42:00	65.7	Road Noise and Pedestrians
22:44:00	68.0	Road Noise and Pedestrians
22:46:00	-	Road Noise
22:48:00	-	Road Noise
-	-	Observations until 11:00pm indicated amplification inaudible





## EVENT NOISE MANAGEMENT

<b>Project Number:</b>	5701	<b>Date:</b>	24 May 2019
<b>Project Description:</b>	SCG - AFL		
<b>Monitoring Location:</b>	Position 2 – Corner of Leinster and Regent Streets		
<b>Operator:</b>	DR		
<b>Weather Description:</b>	Slightly Overcast with light winds		
<b>Instrument:</b>	Nor 11	<b>Calibrator Model:</b>	BNK 4321
<b>Instrument Serial:</b>	1404664	<b>Calibrator Serial:</b>	3012190
<b>Instrument NATA Calibration Validity:</b>	12/06/2017	<b>Calibrator NATA Calibration Validity:</b>	13/05/19
<b>Pre-calibration:</b>	94.0	<b>Post calibration:</b>	94.0

Time	L <sub>Amax</sub> dB(A)	Description of Noise and/or Changes to Weather
19:28:00	63.7	Traffic (Regent Street) and Pedestrians
19:30:00	79.8	Traffic (Regent Street) and Pedestrians and Yelling
19:32:00	72.3	Traffic (Regent Street) and Pedestrians and Yelling
19:34:00	82.4	Traffic (Regent Street) and Pedestrians
19:36:00	71.2	Traffic (Regent Street) and Pedestrians
19:38:00	75.9	Traffic (Regent Street) and Pedestrians
19:40:00	71.4	Traffic (Regent Street) and Pedestrians and some Event Noise and Fireworks
19:42:00	75.6	Traffic (Regent Street) and Pedestrians and some Event Noise and Fireworks
19:44:00	73	Traffic (Regent Street) and Pedestrians and Planes
19:46:00	75.2	Traffic (Regent Street) and Pedestrians
19:48:00	93.8	Traffic (Regent Street) and Pedestrians, Fireworks, Clapping from Pedestrians (close proximity)
19:50:00	81.3	Traffic (Regent Street) and Pedestrians, Pedestrians talking into microphone
19:52:00	74.8	Traffic (Regent Street) and Pedestrians

Time	L <sub>Amax</sub> dB(A)	<u>Description of Noise and/or Changes to Weather</u>
19:54:00	71.3	Traffic (Regent Street) and Pedestrians some Cheering from Venue
19:56:00	77.3	Traffic (Regent Street), and Pedestrian stepping on metal manhole cover
19:58:00	72.8	Traffic (Regent Street) and Pedestrians some Cheering from Venue
20:00:00	76.7	Traffic (Regent Street), Pedestrians, Car Doors Slamming
20:02:00	66.5	Traffic (Regent Street) and Pedestrians some Cheering from Venue
20:04:00	72.9	Traffic (Regent Street) and Pedestrians some Cheering from Venue
20:06:00	75.8	Traffic (Regent Street) and Pedestrians, Dog Barking
20:08:00	73.9	Traffic (Regent Street) and Pedestrians
20:10:00	72.7	Traffic (Regent Street) and Pedestrians, Cheering
20:12:00	65.8	Traffic (Regent Street) and Pedestrians some Cheering
20:14:00	72.4	Traffic (Regent Street) and Pedestrians
20:16:00	67.9	Traffic (Regent Street) and Pedestrians
20:18:00	86.8	Traffic (Regent Street) and Very Loud Pedestrians
20:20:00	65.8	Traffic (Regent Street) and Pedestrians and Planes
20:22:00	65.7	Traffic (Regent Street) and Pedestrians Quarter Time Siren
20:24:00	72.5	Traffic (Regent Street) and Venue Noise (Music, Ads, Commentary)
20:26:00	65.5	Traffic (Regent Street) and Venue Noise (Music, Ads, Commentary) and Quarter Start Siren
20:28:00	68.2	Traffic (Regent Street) and Venue Noise (Music) Quarter Time Siren and Loud Moped
20:30:00	67	Traffic (Regent Street) and Pedestrians
20:32:00	72.9	Traffic (Regent Street) and Pedestrians
20:34:00	70	Traffic (Regent Street) and Loud Moped
20:36:00	63.9	Traffic (Regent Street)
20:38:00	62.5	Traffic (Regent Street) and Pedestrians

Time	L <sub>Amax</sub> dB(A)	Description of Noise and/or Changes to Weather
20:40:00	80.5	Traffic (Regent Street) and Loud Pedestrians within 1 metre
20:42:00	68.8	Traffic (Regent Street) and Pedestrians, Plane and Helicopter
20:44:00	61.6	Traffic (Regent Street) and some cheering
20:46:00	72	Traffic (Regent Street) and Dogs Barking
20:48:00	67.8	Traffic (Regent Street) and Loud Cheering from Venue
20:50:00	78.1	Traffic (Regent Street) and Pedestrians, Loud Exhaust from Car
20:52:00	72.2	Traffic (Regent Street) and Pedestrians
20:54:00	69.4	Traffic (Regent Street) and Pedestrians
20:56:00	71.9	Traffic (Regent Street) and Pedestrians, Loud Moped
20:58:00	64	Traffic (Regent Street), Half-Time Siren
21:00:00	68.9	Traffic (Regent Street), Commentary, Music, Advertisements, Dog Barking
21:02:00	67.5	Traffic (Regent Street), Commentary, Music, Advertisements, Dog Barking
21:04:00	80.1	Traffic (Regent Street), Commentary, Music, Advertisements, Fireworks
21:06:00	69.8	Traffic (Regent Street), Commentary, Music, Advertisements
21:08:00	64.5	Traffic (Regent Street), Car Horn, Ambulance Siren and Music
21:10:00	63.7	Traffic (Regent Street), Car Horn, Music
21:12:00	61.5	No traffic briefly, Commentary, Music and Venue Noise
21:14:00	68	Traffic (Regent Street), 2x Quarter Start Sirens, Music and Commentary
21:16:00	69.6	Traffic (Regent Street) Minimal, Quarter Start Sirens, Music and Commentary
21:18:00	69	Pause in traffic briefly, Sirens, Music, Commentators
21:20:00	68.6	Traffic (Regent Street) and Pedestrians
21:22:00	75.2	Traffic (Regent Street) and Pedestrians

Time	L <sub>Amax</sub> dB(A)	<b>Description of Noise and/or Changes to Weather</b>
21:24:00	78.4	Traffic (Regent Street) and Pedestrians and more Loud Traffic
21:26:00	65.8	Traffic (Regent Street), and Loud traffic closer
21:28:00	67.6	Traffic (Regent Street), and Buses
21:30:00	64	Traffic (Regent Street) and Pedestrians, Bus on Regent Street
21:32:00	69.8	Traffic (Regent Street) and Loud Pedestrians
21:34:00	62.8	Traffic (Regent Street) and Pedestrians
21:36:00	61.9	Traffic (Regent Street) Car Doors Slamming
21:38:00	68.1	Traffic (Regent Street), Loud Vehicles Nearby
21:40:00	72	Traffic (Regent Street) and Bag Thrown out of Hotel Window onto Car
21:42:00	68	Traffic (Regent Street) Local Cars and Some Cheering
21:44:00	61.6	Traffic (Regent Street) Local Cars and Some Cheering
21:46:00	63.9	Traffic (Regent Street) Local Cars and Some Cheering
21:48:00	66	Traffic (Regent Street) Local Cars and Some Cheering
21:50:00	64.3	Traffic (Regent Street), Local Cars and Loud Cheering
21:52:00	70.3	Traffic (Regent Street) Loud Bus and Traffic
21:54:00	65.7	Traffic (Regent Street) and Pedestrians and Quarter Time Siren
21:56:00	70.1	Traffic (Regent Street)
21:58:00	68.4	Traffic (Regent Street)
22:00:00	63.5	Traffic (Regent Street), Music and Siren
22:02:00	67.8	Traffic (Regent Street) and Pedestrians, Cheering
22:04:00	68.8	Traffic (Regent Street) and Pedestrians, Cheering
22:06:00	71.5	Traffic (Regent Street) and Pedestrians, Car Horns, Cheering
22:08:00	69.5	Traffic (Regent Street) and Pedestrians

Time	L <sub>Amax</sub> dB(A)	<b>Description of Noise and/or Changes to Weather</b>
22:10:00	71.5	Traffic (Regent Street) and Pedestrians, Loud Moped
22:12:00	70.3	Traffic (Regent Street) and Pedestrians
22:14:00	73.7	Traffic (Regent Street) and Pedestrians
22:16:00	65	Traffic (Regent Street) and Pedestrians
22:18:00	66.8	Traffic (Regent Street) and Pedestrians, Car Horns, Cheering
22:20:00	67.1	Traffic (Regent Street) and Pedestrians, Car Horns, Cheering
22:22:00	65.3	Traffic (Regent Street) and Pedestrians, Car Horns, Cheering
22:24:00	65.8	Traffic (Regent Street) and Pedestrians, Cheering
22:26:00	63.9	Traffic (Regent Street) and Pedestrians, Car Horns, Cheering
22:28:00	71.7	Traffic (Regent Street)
22:30:00	66.4	Traffic (Regent Street) and Pedestrians
22:32:00	78.3	Traffic (Regent Street) and Pedestrians, Parked Van with Engine On
22:34:00	65.5	Traffic (Regent Street) and Pedestrians, Car Horns, Cheering
22:36:00	72.9	Traffic (Regent Street) and Pedestrians, End Game Siren, Singing and Music
22:38:00	82.2	Increased Traffic (Regent Street) and Pedestrians
22:40:00	56.5	Increased Traffic (Regent Street) and Pedestrians
-	-	Batteries depleted. Observations until 11:00pm indicate amplification inaudible.



## EVENT NOISE MANAGEMENT

<b>Project Number:</b>	5701	<b>Date:</b>	24 May 2019
<b>Project Description:</b>	AFL		
<b>Monitoring Location:</b>	Position 3 – Martin Road		
<b>Operator:</b>	BW		
<b>Weather Description:</b>	Slightly Overcast with light winds		
<b>Instrument:</b>	Nor 2	<b>Calibrator Model:</b>	Rion NC-74
<b>Instrument Serial:</b>	NOR 140	<b>Calibrator Serial:</b>	34483809
<b>Instrument NATA Calibration Validity:</b>	14/07/19	<b>Calibrator NATA Calibration Validity:</b>	27/11/19
<b>Pre-calibration:</b>	94.1	<b>Post calibration:</b>	94.1

Time	L <sub>Amax</sub> dB(A)	Description of Noise and/or Changes to Weather
19:38:00	-	Some Cloud, Light Breeze
19:40:00	-	Set Up Pos 3.
19:42:00	75.0	Traffic Lang Rd + Bats
19:44:00	69.0	Traffic Lang Rd + Bats
19:46:00	74.3	Traffic Lang Rd
19:48:00	73.9	Aircraft Overhead
19:50:00	73.5	Game Siren Audible
19:52:00	69.1	Bats, Local Vehicle, Lang Rd
19:54:00	73.9	Audible Yells @ Sports Park to West
19:56:00	62.6	Traffic, Sports Field
19:58:00	60.8	Lang Rd
20:00:00	70.8	Local Tow Truck
20:02:00	63.9	Lang Rd
20:04:00	64.0	Audible Cheer and Boo. Ambulance Siren
20:06:00	62.3	Sneeze and Local Cars



Time	L <sub>Amax</sub> dB(A)	Description of Noise and/or Changes to Weather
20:08:00	72.4	Aircraft Overhead
20:10:00	65.6	Lang Rd
20:12:00	68.6	Car Doors and Crowd Cheer (63 dB(A))
20:14:00	61.8	Lang Rd
20:16:00	61.9	Lang Rd
20:18:00	62.0	Lang Rd and Sports Field
20:20:00	63.8	Lang Rd and Local Cars Parking
20:22:00	63.7	Quarter Time Siren (57 dB(A)), Commentator, Lang Road and Helicopter
20:24:00	62.1	Lang Rd
20:26:00	65.8	Lang Rd
20:28:00	59.1	Siren < 57dB(A), Lang Rd. Yelling from Sports Field
20:30:00	60.5	Lang Road
20:32:00	65.5	Lang Road and Helicopter
20:34:00	67.2	Local Vehicle
20:36:00	61.3	Lang Rd
20:38:00	64.1	Lang Rd and Bats
20:40:00	64.0	Audible Whistle at Sports Field, Motorbike on Lang Road
20:42:00	60.7	Lang Road, Bats
20:44:00	63.8	Lang Road
20:46:00	59.7	Lang Road
20:48:00	60.0	Lang Road
20:50:00	64.6	Pedestrians and Lang Road
20:52:00	58.4	Lang Road, Anzac Parade becoming Audible

Time	L <sub>Amax</sub> dB(A)	Description of Noise and/or Changes to Weather
20:54:00	69.8	Lang Rd
20:56:00	63.6	Crowd Cheer, Pedestrian Clap
20:58:00	58.0	Pedestrian Talking, Lang Road
21:00:00	69.6	Lang Rd, Siren (58 dB(A)) announcements (52 dB(A))
21:02:00	61.3	Lang Road
21:04:00	66.5	Lang Road
21:06:00	60.5	Lang Road
21:08:00	63.3	Ambulance, Music Just Audible
21:10:00	78.1	Siren (57.4 dB(A))
21:12:00	64.3	Lang Road
21:14:00	59.1	3x Siren and Lang Road
21:16:00	61.0	Lang Road
21:18:00	61.3	Lang Road
21:20:00	65.0	Cheers and Residents 50 m away 65
21:22:00	65.0	Lang Rd
21:24:00	62.7	Lang Rd
21:26:00	59.0	Lang Rd
21:28:00	58.0	Lang Rd Soft Cheer
21:30:00	59.1	Lang Rd
21:32:00	58.6	Lang Rd, Pizza Delivery Scooter
21:34:00	61.4	Lang Rd
21:36:00	75.5	Lang Rd
21:38:00	68.9	Lang Rd
21:40:00	65.6	Big Roar/Cheer, Car Horn

Time	L <sub>Amax</sub> dB(A)	Description of Noise and/or Changes to Weather
21:42:00	67.9	Pedestrians Talking
21:44:00	61.7	Big cheer, Lang Road
21:46:00	59.0	Lang Rd
21:48:00	59.4	Lang Rd
21:50:00	61.0	Siren, Lang Rd
21:52:00	64.9	Lang Rd
21:54:00	59.5	Lang Rd
21:56:00	59.8	Siren , Lang Road
21:58:00	59.5	Music < 53 dB(A), Lang Rd
22:00:00	58.5	Siren
22:02:00	58.2	less Lang Road more Anzac Parade
22:04:00	64.9	Lang Road Motorbike, Patrons Departing <55 dB(A)
22:06:00	74.7	People calling for taxi
22:08:00	67.1	Semi Trailer nearby
22:10:00	73.9	parked Cars Departing
22:12:00	61.1	Taxi Doors, Resident of Main Property
22:14:00	68.5	Lang Road
22:16:00	61.2	Lang Road, Patrons departing, ambulance on Lang Road Max
22:18:00	85.4	Low Vol Cheers, Anzac Ave, Lang Road, Ambulance maximum
22:20:00	67.2	Big crowd cheer
22:22:00	67.3	Lang Road
22:24:00	65.7	Lang Road
22:26:00	68.6	Bass music from car @ 50m 58.1 dB(A)
22:28:00	58.1	Lang Road



Time	L <sub>Amax</sub> dB(A)	Description of Noise and/or Changes to Weather
22:30:00	65.4	Lang Road
22:32:00	62.5	Pedestrians and Lang Road
22:34:00	69.6	Siren 56 dB(A). PA just audible
22:36:00	75.4	Lang Road, Site inaudible
22:38:00	62.6	Lang Road, Pedestrians, Loud Vehicles
22:40:00	65.6	Lang Road, Departing Parked Cars, Loud Vehicles
22:42:00	62.1	Lang Road
22:44:00	66.5	Lang Road
22:46:00	61.1	Lang Road
22:48:00	-	Site inaudible