



**Sydney Cricket Ground Trust**

**ALLIANZ STADIUM: EVENT NOISE  
MONITORING (ONE DIRECTION, 8  
FEBRUARY 2015)**

**February 2015**

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## **Executive Summary**

Monitoring of noise levels at sensitive receptors in the area surrounding Allianz Stadium was undertaken during the One Direction concert on the 8<sup>th</sup> February 2015 to determine compliance with the following noise criteria defined in the site's Noise Management Plan (NMP):

*'During sound test(s), rehearsal(s) and concert(s),  $L_{Amax}$  and the  $L_{Cmax}$  measured at the specified locations described in Section 15.4 will not exceed:*

*ii) For activities conducted at the SFS: 80 dB(A) and 100dB(C).'*

*The monitoring period included all sound checks, rehearsals and performances constituting the night.*

*Throughout the monitoring, noise levels were recorded every two minutes, and observations were made as to the source of noise and potential exceedances at each location. The noise level recorded represents the highest RMS noise level recorded during the two minute period. Hence, even where exceedances are identified it is possible that for the majority of the two minute period, receptor noise levels were compliant with the NMP criteria.*

*During the commencement of the 'One Direction' performance the first 2 minute period was measured to be 1 dB over the dB(C) criteria, and the system was adjusted accordingly. The NMP makes allowance for this initial correction and therefore, this single exceedance does not constitute a breach of the noise conditions.*

*During the remainder of the One Direction performance one period was measured to exceed the dB(C) limit, and the sound engineer was quickly informed and the levels reduced to within limits for the remainder of the performance. Generally the levels were a minimum of 5 dB below both dB(A) and dB(C) criteria during the performances. Throughout the evening, performance levels within the venue did not vary significantly, and changes to levels externally are believed to be influenced by local meteorology or speaker system anomalies. It is however noted that the system in use was of the highest quality and best suited to reduce noise spillage from the venue.*

*No complaints were received by the Trust during the performance pertaining to the amplified noise from the concert on the 8<sup>th</sup> February 2015. It is noted that four complaints relating to noise of the 8<sup>th</sup> February 2015 were recorded in the days following the concert, including two forwarded from the EPA. The complaints generally related to a perceived increase in volume from previous nights.*

*The event personnel were informed that the NMP requires the event to conclude at 22:30 hrs. The stage performance on the 8<sup>th</sup> concluded at 22:17 hrs, and pre-recorded music with a significantly reduced volume ceased at 22:21.*

## 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>1.3.1</b>	<b>Variation Of Prevention Notice</b>	<b>2</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>4</b>
<b>3</b>	<b>RESULTS OF MONITORING</b>	<b>6</b>
<b>3.1</b>	<b>MONITORING RESULTS</b>	<b>6</b>
<b>3.2</b>	<b>CONCERT HOTLINE</b>	<b>6</b>
<b>APPENDIX A: ACOUSTIC GLOSSARY</b>		
<b>APPENDIX B: DETAILED NOISE MONITORING RESULTS (FIXED POSITIONS)</b>		
<b>APPENDIX C: NOISE COMPLAINS REGISTER</b>		

# 1 INTRODUCTION

## 1.1 SCOPE OF ASSESSMENT

Sydney Cricket Ground Trust commissioned Air Noise Environment Pty Ltd to conduct event noise monitoring during the One Direction series of concerts as required 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 concert events were held at Allianz Stadium (SFS) on Saturday 7 and Sunday 8 February 2015, with sound checks and rehearsals on Friday 6 February, 2015. This report presents the noise monitoring and results for the performance of the concert of the 8 February 2015.

The approximate schedule for the amplified rehearsal was as follows:

- Gates Open, with background pre-recorded music: 5:30 pm – 6:20 pm
- Support Act 'Samantha Jade': 6:20 pm – 6:40 pm
- Support Act 'McBusted': 7:10 pm – 7:40 pm
- 'One Direction': 8:30 pm - 10:20 pm.

## 1.3 EVENT NOISE CRITERIA

Noise limits for concert events held at the SFS are provided in the site's NMP as follows:

### **'7.1.1 Concerts**

*Both dB(A) and dB(C) limits are specified for concerts as a particular impact on local receivers of amplified music is low-tone bass sounds – measured in dB(C).*

*During sound test(s), rehearsal(s) and concert(s),  $L_{Amax}$  and the  $L_{Cmax}$  measured at the specified locations described in Section 15.4 will not exceed:*

- ii) For activities conducted at the SFS: 80 dB(A) and 100dB(C). '*

Section 15.4 of the NMP details the monitoring positions that must be considered as follows:

### **'Description Of Location**

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

- b) For activities taking place at the SFS:*

<sup>1</sup> Sydney Cricket and Sports Ground Trust (SCGT) Noise Management Plan for Sydney Cricket and Sports Ground Trust (November 2008 )

- *At a point within one (1) metre of the boundary nearest to the SFS at 234 Moore Park Road, Paddington; and*
- *At a point within one (1) metre of the boundary nearest to the SFS of 10 Alexander Street, Paddington'*

### 1.3.1 Variation of Prevention Notice

In December 2015 the NSW EPA issued a Variation of Prevention Notice, with the following additions relevant to concert performance noise:

- **Concerts:** A concert must not commence prior to 1000 hours or finish after 2230 hours on any day. Notwithstanding the above, concerts may continue until 2300 hours if an occurrence beyond the control of the Trust delays the concert. The total length of a concert must not be greater than five (5) hours.
- **Exemption for exceedences at the start of new performances:** An exceedence of the noise level limit in condition 15(a) by a maximum of 5 dB(A) and/or 5 dB(C) during a single (5) minute period during the first ten (10) minutes of the performance of each new act will not be taken to be a breach of condition 15.
- Noise levels measured when wind speed exceeds 5 m/s (at microphone height) should not be used to measure compliance with noise limits in the Notice, as wind generated noise may limit 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.

The exemption for exceedences at the start of new performances is intended to give the mixing desk operators time to respond to changes in conditions (e.g. meteorology), or unfamiliarity with the system (new operator). Subsequent exceedences will be considered as normal.

## 2 MONITORING METHODOLOGY

### 2.1 MONITORING POSITIONS

Monitoring during the sound checks and rehearsal were undertaken at two 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 of 234 Moore Park Road
2	Fixed monitoring position located within 1 m of the front boundary of 10 Alexander Street



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

In addition to compliance monitoring, Event Noise Management staff were present at the front of house (FOH) position to advise the compliance status of noise levels to the production team throughout the event. It was noted that a dedicated sound engineer was monitoring the overall volumes throughout the shows on behalf of the Promoter, and worked directly and actively with ENM personnel.

## 2.2 OPERATORS

During the monitoring undertaken on 8 February 2015, Air Noise Environment personnel were located at each position identified in Figure 1. The monitoring exercise was undertaken by the following personnel:

- Mixing Desk: Beau Weyers, BEng(Mech), RPEQ, MAAS;
- Position 1: Glen Slough: AssocDeg(Audio Eng), MSc, MAAS, MAES; and
- Position 2: Roger Treagus: BA, MA Env. Stud, MAAS.

## 2.3 MONITORING EQUIPMENT

Table 2.2 presents a summary of the equipment used the monitoring. All sound level meters conform to Australian Standard 1259 "Acoustics - Sound Level Meters", (1990) as 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 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	Calibrator Model	Calibrator Serial	Calibrator Calibration Due Date
1	B&K 2250 Lite	2741104	26/09/15	Pulsar 105	62686	30/10/15
2	Norsonic 140	1405257	1/10/16	Pulsar 105	62686	30/10/15
Front of House	Norsonic 140	1405256	20/1/17	Pulsar 105	62686	30/10/15

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

During the sound check and rehearsal, light breezes occurred during the event varying from easterly, through north easterly, then south-westerly during the final hour of the event. Generally clear skies were observed. Temperatures ranged from 24°C to 33°C.

Table 2.3 presents a summary of the meteorological data from Sydney Airport for the event. It is noted that there was no rain during the amplification period.



**TABLE 2.3: SUMMARY OF METEOROLOGICAL DATA**

Date time	Temp	Cloud	Cloud base (m)	Gust kmh	Press	Rain	Rel hum	Wind dir	Wind spd (kmh)
08/11:30pm	24	-	-9999	15	1018.8	0	92	SSE	13
08/11:00pm	24	-	-9999	15	1018.9	0	93	S	13
08/10:30pm	24.3	-	-9999	15	1018.8	0	91	SSW	13
08/10:00pm	24.6	-	-9999	13	1018.6	0	87	SSW	9
08/09:30pm	24.7	-	-9999	11	1018.4	0	88	WNW	7
08/08:30pm	28.2	-	-9999	7	1017.6	0	54	NNE	7
08/08:00pm	28.2	Partly cloudy	3750	11	1017.3	0	55	NE	9
08/07:30pm	28.6	Partly cloudy	3750	11	1016.9	0	56	NE	9
08/07:00pm	29.7	-	-9999	13	1016.5	0	50	E	11
08/06:30pm	30.1	-	-9999	17	1016.2	0	42	E	15
08/05:30pm	31.1	-	-9999	17	1015.9	0	32	E	15
08/05:00pm	31.8	-	-9999	22	1015.9	0	37	E	17
08/04:30pm	32.1	-	-9999	20	1016.1	0	38	E	17
08/04:00pm	33	-	-9999	22	1016.2	0	35	E	19

## **3 RESULTS OF MONITORING**

### **3.1 MONITORING RESULTS**

Noise monitoring results were recorded at each location every two minutes throughout the monitoring period (5:15 pm to 10:22 pm). During each two minute period notes were also made regarding the sources of noise in the area and the source of any potential exceedances of the noise criteria. It is noted that the noise level recorded represents the highest RMS noise level recorded during the two minute period. Hence, even where exceedances are identified it is possible that for the majority of the two minute period, receptor noise levels were compliant with the NMP criteria.

During the sound checks/rehearsals completed on the 6<sup>th</sup> of February Event Noise Management (ENM) staff completed tests to determine adjustments to the sound system to reduce external noise levels. These changes included reduction of the volume of specific speakers, reduction of problem frequencies, and turning off specific speakers. The sound engineer also programmed limiting dB(A) and dB(C) values corresponding to those at the threshold of compliance externally. These changes were programmed into the sound system for the event.

During the commencement of the One Direction performance on the 8<sup>th</sup>, the first 2 minute period was noted to be 1 dB over the dB(C) criteria, and the system was adjusted accordingly. The NMP makes allowance for this initial correction and therefore, this single exceedance does not constitute a breach of the noise conditions.

During the One Direction performance on the 8<sup>th</sup> of February one period was measured to exceed the dB(C) limit by 1 dB, and the sound engineer was quickly informed and the levels reduced to within limits for the remainder of the performance. Generally the levels were a minimum of 5 dB below both dB(A) and dB(C) criteria during the performances. Throughout the evening, performance levels within the venue did not vary significantly, and changes to levels externally are believed to be influenced by local meteorology or speaker system anomalies. It is however noted that the system in use was of the highest quality and best suited to reduce noise spillage from the venue.

Once the sound technician was informed of the exceedance, sound levels were quickly reduced to within limits, and did not exceed the criteria again during the rehearsal.

Appendix B presents a summary of the recorded noise levels and observations during the sound check and rehearsal, with exceedances of the criteria identified as originating from amplified sources within the Allianz Stadium shown in bold.

### **3.2 CONCERT HOTLINE**

During the One Direction concert on 8 February 2015, no complaint related calls or emails were received on the concert hotline established by the Sydney Cricket Ground Trust.

Following the event four complaints relating to the concert performance on 8 February 2015 were recorded. Two were forwarded from the EPA, and two were recorded by the Trust hotline. The complaints generally related to a perceived increase in volume from the previous nights performance.

Review of the FOH levels indicate that the operating volumes were either the same or lower than the previous nights (7 February 2015), and perceived changes were likely due to different meteorological conditions.

A register of the complaints recorded by the Sydney Cricket Ground Trust for the One Direction concert series and sound checks is attached in Appendix C.

# **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 (0.00002 N/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>dB(C)</b>	This is a standard weighting of the audible frequencies, commonly used for the measurement of Peak Sound Pressure level.
<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>Amax</sub></b>	is the maximum A-weighted sound pressure level recorded over the period stated.
<b>L<sub>Cmax</sub></b>	is the maximum C-weighted sound pressure level recorded over the period stated.

# **APPENDIX B**

## **DETAILED MONITORING DATA (FIXED POSITIONS)**

## EVENT NOISE MANAGEMENT

<b>Project Number:</b>	4054	<b>Date:</b>	SUN 08/02/2015
<b>Project Description:</b>	One Direction		
<b>Monitoring Location:</b>	1 - SFS at 234 Moore Park Road, Paddington [ ]		
<b>Operator:</b>	Glen Slough		
<b>Instrument:</b>	Bruel & Kjaer 2250L	<b>Calibrator Model:</b>	Pulsar Model 105
<b>Instrument Serial:</b>	2741104	<b>Calibrator Serial:</b>	62686
<b>Instrument NATA Calibration Date:</b>	26/09/15	<b>Calibrator NATA Calibration Date:</b>	30/10/15
<b>Pre-calibration:</b>	93.9	<b>Post calibration:</b>	93.7

<b>Weather:</b>	<b>Relatively calm. Some occasional westerly breezes, tending to southerly at 9 pm</b>		
<b>Time</b>	<b>L<sub>max</sub> dB(A)</b>	<b>L<sub>max</sub> dB(C)</b>	<b>Description of Noise</b>
17:14	75.7	86.9	Monitoring Commenced
17:16	78.1	93.4	No amplification from venue
17:18	83.8	98.9	Buses, cars, motorbikes, occasional patron squeals
17:20	91.1	103.3	Traffic
17:22	73.3	85.6	Traffic
17:24	71.9	84.1	Motorbike
17:26	79.9	98.1	Traffic
17:28	75.3	88.9	Traffic
17:30	82.3	85.6	Motorbike
17:32	90.2	96.2	Traffic
17:34	81.3	90.2	Traffic
17:36	82.3	85.9	Traffic
17:38	83.2	91.7	Traffic
17:40	87.5	96.4	Traffic
17:42	89.0	90.6	Traffic
17:44	84.6	92.9	Venue Music (house) audible – Compliant. Traffic dB(A) maximum
17:46	81.1	98.3	Traffic
17:48	80.6	90.9	Traffic

Weather:	Relatively calm. Some occasional westerly breezes, tending to southerly at 9 pm		
Time	L <sub>max</sub> dB(A)	L <sub>max</sub> dB(C)	Description of Noise
17:50	79.0	93.7	Traffic
17:52	82.8	92.9	Traffic
17:54	74.2	89.3	Traffic
17:56	87.2	88.2	Traffic
17:58	77.1	88.0	Venue almost inaudible
18:00	82.7	96.5	Traffic
18:02	73.5	85.8	Screams
18:04	82.6	100.4	Car exhaust
18:06	74.3	86.3	Traffic
18:08	82.4	87.7	Traffic
18:10	86.9	104.2	Car Horns
18:12	72.7	86.6	Traffic
18:14	90.7	93.6	Traffic
18:16	79.1	99.1	Motorbike, Exhaust
18:18	78.9	99.7	Traffic
18:20	74.7	92.8	Venue bass jumped "Samantha Jade" people talking nearby noise meter
18:22	77.3	94.7	Traffic
18:24	84.5	98.6	Venue reduced volume levels back / Airplane dominant
18:26	76.7	92.9	Traffic
18:28	83.4	95.6	Motorbike
18:30	79.6	96.6	Traffic
18:32	78.0	93.6	Traffic
18:34	88.3	99.7	Bus and Airplane at the same time
18:36	75.6	96.6	Data saved
18:38	85.3	93.9	Traffic
18:40	73.5	85.9	Levels Dropped, changeover?
18:42	82.8	101.0	Traffic
18:44	78.6	91.0	Traffic



Weather:	Relatively calm. Some occasional westerly breezes, tending to southerly at 9 pm		
Time	L <sub>max</sub> dB(A)	L <sub>max</sub> dB(C)	Description of Noise
18:46	72.8	85.1	No audible venue activity
18:48	81.9	87.8	Traffic
18:50	81.9	95.3	Traffic
18:52	74.6	91.8	Traffic
18:54	84.9	98.7	Venue advertisement bass jumped momentarily.
18:56	75.0	89.9	Traffic
18:58	79.3	91.3	Traffic
19:00	76.8	88.3	Traffic
19:02	80.7	92.7	Traffic
19:04	81.4	92.0	Traffic
19:06	83.0	93.7	Traffic
19:08	75.2	95.0	Traffic
19:10	85.3	97.2	Venue music start up again "McBusted", traffic dominant
19:12	80.2	94.9	Traffic
19:14	83.3	94.8	Traffic
19:16	80.9	97.2	Traffic
19:18	87.3	101.1	Motorbike
19:20	79.7	95.2	Pedestrians
19:22	86.0	103.1	Motorbike
19:24	75.3	95.3	Car Horn
19:26	79.0	95.5	Traffic
19:28	83.1	95.0	Traffic
19:30	76.5	95.3	Traffic
19:32	80.3	98.0	Traffic
19:34	84.5	96.0	Traffic
19:36	79.3	97.4	Pedestrians
19:38	79.0	98.8	Loud Exhaust
19:40	78.5	98.4	Loud Exhaust
19:42	74.4	85.9	Traffic

Weather:	Relatively calm. Some occasional westerly breezes, tending to southerly at 9 pm		
Time	L <sub>max</sub> dB(A)	L <sub>max</sub> dB(C)	Description of Noise
19:44	74.6	93.2	Loud Exhaust
19:46	78.6	87.5	Data Saved
19:48	78.0	94.2	Change over
19:50	76.8	86.9	Traffic
19:52	75.6	87.4	Traffic
19:54	80.1	99.1	Traffic
19:56	73.5	89.4	Pre recorded music maximums 65 dB(A), 82 dB(C)
19:58	76.9	91.0	Traffic
20:00	82.5	90.8	Traffic
20:02	89.5	98.9	91 dB(C) from advertisement bass (2 seconds), Traffic max
20:04	77.2	96.6	Elevated background music 69 dB(A), 89 dB(C), Bird Max dB(A)
20:06	81.1	96.6	Traffic
20:08	83.3	97.0	Background music from venue 68 dB(A), 90 dB(C)
20:10	81.8	93.7	Traffic
20:12	95.7	101.2	Motorbike
20:14	80.3	95.8	Traffic
20:16	73.8	95.8	Motorbike
20:18	80.1	91.2	Traffic
20:20	78.8	96.6	Traffic
20:22	74.2	94.6	Cricket Starting
20:24	97.4	103.0	Motorbike
20:26	79.5	93.9	Traffic
20:28	81.6	99.2	Localised patron screaming
20:30	89.6	98.3	Localised patron screaming
20:32	80.9	101.4	<b>"One Direction" taking the stage, bass up to 101 dB(C), informed FOH to reduce.</b> Noted that FOH was operating at same levels at previous night, however different winds.
20:34	93.8	106.0	Confirmed bass reduced to 98 dB(C), Fireworks maximum
20:36	83.7	99.0	Performance dB(C) high with traffic, informed FOH to reduce.

Weather:	Relatively calm. Some occasional westerly breezes, tending to southerly at 9 pm		
Time	L <sub>max</sub> dB(A)	L <sub>max</sub> dB(C)	Description of Noise
20:38	87.3	99.6	Performance dB(C) high with traffic.
20:40	79.7	98.2	Truck
20:42	99.2	100.6	82A from screams, Motorbike
20:44	81.4	97.3	Traffic
20:46	75.4	98.5	Music 90-93 dB(C). dB(A) is well under, Traffic maximum
20:48	-	-	81 dB(A) from screams – Data saved
20:50	-	-	Data saved
20:52	79.5	96.0	97C from traffic noise
20:54	84.0	96.5	Traffic
20:56	79.4	96.5	Trucks
20:58	78.3	99.5	Loud Exhaust
21:00	80.0	98.1	Tow trucks sweeping up clearway
21:02	80.5	98.5	Lcmax was 99.5, LCF only 94
21:04	79.7	85.2	One brief peak from music, not constant
21:06	79.1	95.4	Traffic
21:08	80.8	98.1	Talking interlude, Traffic dominant
21:10	79.3	92.5	Amplified dB(A) generally 70 – 73. Traffic dominant
21:12	77.8	83.7	Spikes on the drum rolls
21:14	81.9	96.5	Performance Interlude, Traffic
21:16	83.3	95.4	Quiet song, Traffic
21:18	81.4	95.0	Bus
21:20	89.5	99.3	Quiet song, Traffic maximums
21:22	89.7	100.3	Quiet song, Traffic maximums
21:24	86.1	98.8	Pedestrians
21:26	86.5	98.9	Fireworks
21:28	87.3	99.8	Peak from drums, informed FOH at the limit.
21:30	80.9	97.5	Pedestrian talking dB(A), motorbike dB(C)
21:32	77.2	97.4	Bus
21:34	81.4	97.4	96.5 dB(C) from music

Weather:	Relatively calm. Some occasional westerly breezes, tending to southerly at 9 pm		
Time	L <sub>max</sub> dB(A)	L <sub>max</sub> dB(C)	Description of Noise
21:36	77.6	96.9	Bass reduced
21:38	85.1	98.1	
21:40	84.2	97.7	Music LCF mostly 93-95
21:42	79.8	98.2	96.4 from exhaust
21:44	88.6	99.6	Tom drum
21:46	78.4	96.9	99.6 from fireworks
21:48	80.8	98.3	Police trucks 96.1
21:50	74.2	87.0	Fake Finale, no amplification. Traffic dominant
21:52	79.3	83.9	Fake Finale, no amplification. Traffic dominant
21:54	89.2	100.7	Loud vehicle exhaust
21:56	87.7	99.7	Quiet song, Traffic maximums
21:58	77.3	99.7	Quiet song, Traffic maximums
22:00	80.7	101.4	Fireworks
22:02	79.5	97.4	Synthesiser bass
22:04	82.0	96.7	Floor Tom drum at 40Hz, informed FOH this is the dominant noise source escaping the venue. Traffic dB(A) maximum
22:06	88.4	100.8	94.4 dB(C) from a truck. maximums from fireworks
22:08	102.5	102.3	Fireworks maximum, music not more than 98 dB(C)
22:10	99.8	101.9	Fireworks maximum, music not more than 96 dB(C)
22:12	77.3	89.1	Reduction in floor tom and 40Hz helped, bass significantly reduced.
22:14	84.6	89.7	Traffic defining dB(A) maximum
22:16	97.8	103.2	Fireworks maximums, Main performance stopped 22:17
22:18	77.0	89.6	Low level music while patrons vacate the venue.
22:20	88.1	88.6	Low level music while patrons vacate the venue. All amplification stopped at 22:21

<sup>1</sup> *Bold represents exceedance in criteria as a result of amplified music*

## EVENT NOISE MANAGEMENT

<b>Project Number:</b>	4054	<b>Date:</b>	SUN 08/02/2015
<b>Project Description:</b>	One Direction		
<b>Monitoring Location:</b>	2 – SFS at 10 Alexander Street, Paddington [ ]		
<b>Operator:</b>	Roger Treagus		
<b>Instrument:</b>	Norsonic 140	<b>Calibrator Model:</b>	Pulsar Model 105
<b>Instrument Serial:</b>	1405257	<b>Calibrator Serial:</b>	62686
<b>Instrument NATA Calibration Date:</b>	1/10/14	<b>Calibrator NATA Calibration Date:</b>	30/10/15
<b>Pre-calibration:</b>	93.9	<b>Post calibration:</b>	93.9

<b>Weather:</b>	<b>Relatively calm. Some occasional westerly breezes, tending to southerly at 9 pm</b>		
<b>Time</b>	<b>L<sub>max</sub> dB(A)</b>	<b>L<sub>max</sub> dB(C)</b>	<b>Description of Noise</b>
17:20 – 17:58	Instrument Error, no values recorded. Noted that no exceedances were measured during operator observation.		No audible event noise, except screams of fans on Moore Park Road. Ambient noise defined by traffic, birds, aircraft
18:00 – 18:36			Event noise clearly audible but well below criteria. Ambient noise defining levels for the period. Frequent aircraft movements.
18:38 – 18:44			Event noise clearly audible but well below criteria. Ambient noise defining levels for the period.
18:46 – 19:00			Performance break. Ambient noise defining maximum levels for the period.
19:02 – 19:42			Event audible up to 57 dB(A) 70 dB(C) Ambient noise defining maximum levels for the period.
19:44 – 20:00			Performance break, some very low volume music just audible on occasion. Ambient noise defining maximum levels for the period.
20:02 – 20:22			Performance level music audible up to 62 dB(A) 73 dB(C)
20:24			Battery change
20:26 – 20:44			Event audible up to 62 dB(A) 73 dB(C) Ambient noise defining maximum levels for the period.
20:46			Pyrotechnics L <sub>Amax</sub> 82 dB(A)
20:48 – 21:54			Event audible up to 63 dB(A) 74 dB(C) Ambient noise defining maximum levels for the period.

Weather:	Relatively calm. Some occasional westerly breezes, tending to southerly at 9 pm		
Time	$L_{max}$ dB(A)	$L_{max}$ dB(C)	Description of Noise
21:56 – 22:12			Event audible up to 63 dB(A) 73 dB(C) Ambient noise defining maximum levels for the period.
22:14			Pyrotechnics up to 84 dB(A), music level 65 dB(A) 77 dB(C) (Finale).
22:16			Pyrotechnics up to 84 dB(A), music level 65 dB(A) 77 dB(C) (Finale). Audible event noise concluded at 22:17



# **APPENDIX C**

## **SCGT COMPLAINTS REGISTER**



**Sydney Cricket & Sports Ground Trust**  
**HOTLINE REGISTER**

**EVENT NAME:** One Direction

**PAGE NUMBER:** 1 of 3

**DATE:** Friday 6<sup>th</sup> – Sunday 8<sup>th</sup> February 2015

Date	Time	Method	Complainant's Name	Complainant Details	Nature of Complaint	Action taken by the Trust
06/02/15	1658	Phone	Stuart st 2021	<b>Going on all day and has a headache.</b>	<b>Concerned how much longer.</b>	Apologised and advised allocated rehearsal until 9pm but may finish sooner. Will forward their concern.
	1839		Cook Rd, centennial park	Intermittent sound checks not good. Windows closed and dreading Sunday's heat forecast. Calling to put in formal complaint. U2 soundcheck was for 1.5hrs not intermittent.		
	2040		Regent s, south Paddington		Sound check – no. of sound checks should be specified. 8:30pm – peace required after surgery all day Furious – only two concerts advised and “intermittent” sound check was advised too but sound check since this morning before work – “sounds like rehearsal” therefore 3 concerts really.	Requested ref. No. and email to confirm complaint received





**Sydney Cricket & Sports Ground Trust**  
**HOTLINE REGISTER**

**EVENT NAME:** One Direction

**PAGE NUMBER:** 2 of 3

**DATE:** Friday 6<sup>th</sup> – Sunday 8<sup>th</sup> February 2015

Date	Time	Method	Complainant's Name	Complainant Details	Nature of Complaint	Action taken by the Trust
07/02/15	1555		Cook Rd, centennial park	Complainant gave no contact details. Info obtained from Friday.	“absolutely intolerable” continuous noise and rehearsals occurring prior to “START” time specified to residents i.e. 6:15pm “Trust lying to residents/neighbours” Re. Noise timeframes, and will contact member of Parliament	Advised BOTH complaints and concerns would be forwarded on.
<b>Calls Received Post Sunday 8 February</b>						
9/02/15	11:51	Email	Correspondence received from EPA	No Supplied	The EPA has received a complaint regarding noise from loud music and announcements at the Sydney Cricket Ground on 6 February 2015. The complainant reports that the noise started at 10am and continued through and was still on-going at 11.15am. Can you please provide information on what activities were taking place at the Sydney Cricket Ground during this time.	Contacted EPA and advised that testing was due to commence at Noon however due to production issues line testing was brought forward. Post 11.15am no further noise was emitted from PA until start of the concert at 5.30pm
9/02/15	1631	Phone	Kensington		Could hear the music clearly on Sunday night. Stated Saturday could barely hear the concert but Sunday could hear the sound clearly. Advised lives in level 6 of a high rise building	Advised PA setting was the same as previous night however wind direction was different to previous night



**Sydney Cricket & Sports Ground Trust**  
**HOTLINE REGISTER**

**EVENT NAME:** One Direction

**PAGE NUMBER:** 3 of 3

**DATE:** Friday 6<sup>th</sup> – Sunday 8<sup>th</sup> February 2015

Date	Time	Method	Complainant's Name	Complainant Details	Nature of Complaint	Action taken by the Trust
10/02/15	1254	Email	Correspondence received from EPA		EPA advised received two complaints in relation to Sunday 8 February Concert. The addresses of the complainants were Allison Road, Randwick and Cottenham Avenue, Kensington.	
11/02/15	1726	Phone	Kensington		Advised couldn't find the hotline number on Trust website. Eventually found it. Wanted to register a complaint with noise from Sunday night's concert. Said it was very loud, much louder than Saturday night. Advised that she lives in high rise building.	Explained number is on website and will follow up on prominence of this information. Also advised that PA settings were the same as previous night however advised wind direction was different to previous night.