EVENT NOISE MANAGEMENT

Sydney Cricket Ground Trust

NOISE MONITORING, T20 CRICKET– AUSTRALIA v INDIA

31 JANUARY 2016

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Executive Summary

Monitoring of noise levels at sensitive receptors in the area surrounding Sydney Cricket Ground was undertaken during the Australia v India T20 Cricket match held on 31 January 2016 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 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.'*

Noise levels were measured for the duration of the amplified activities associated with the event 14:30 pm to 22:40 pm at the three positions required by the Noise Management Plan. During the monitoring, notes were also made regarding the sources of noise in the area and the source of any potential exceedences of the noise criteria.

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 T20 Cricket match it was identified that noise levels from the event were within the criteria defined in the site's NMP throughout the noise monitoring.

At Positions 1 and 2 the match was audible at times, but no exceedances were recorded. At Position 3 the match was mostly inaudible relative to traffic and other ambient noise.

No complaints were forwarded to Event Noise Management staff for investigation.

During the event, L_{Amax} noise levels were higher than the 60 dB(A) criteria for the majority of the time due to traffic noise and patrons external to the venue. These sources of noise are not directly attributable to the sound amplification system and therefore do not represent an exceedance of the criteria.

CONTENTS

1 INTRODUCTION

1.1 SCOPE OF ASSESSMENT

Sydney Cricket Ground Trust (SCGT) commissioned Event Noise Management to conduct event noise monitoring during the Australia v India T20 Cricket match held on 31 January 2016 as part of the requirements under the Noise Management Plan (NMP) for the facility[1]

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 Sydney Cricket Ground (SCG) on Sunday 31 January 2016. 14:30 pm and 22:30 pm, with fireworks, amplified music, announcements and advertising continuing at a low level until approximately 22:40 pm.

1.3 EVENT NOISE CRITERIA

Noise limits for sporting events held at the SCG 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;*
> - *At a point within one (1) metre of the boundary nearest to the SCG, at the corner of*

[1] *Sydney Cricket Ground and Allianz Stadium, Noise Management Plan (NMP), prepared by ERM for Sydney Cricket and Sports Ground Trust (SCGT), April 2015*

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 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 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)

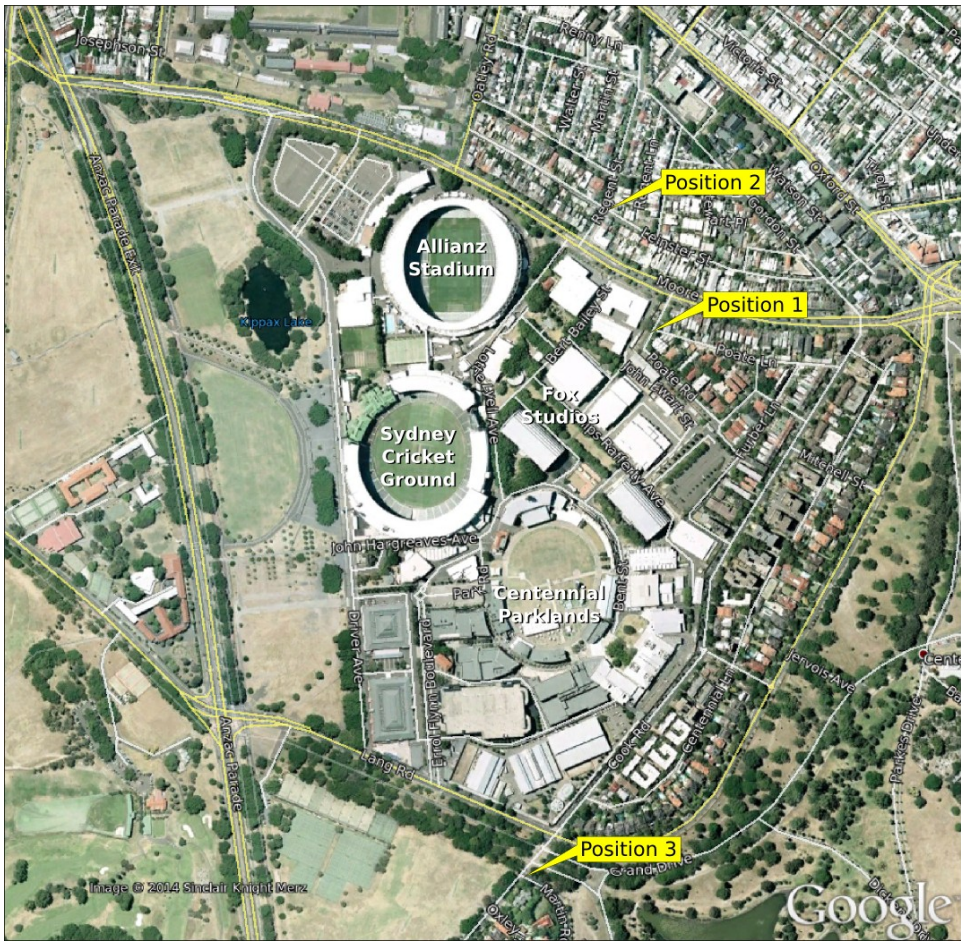

Figure 1: Noise Monitoring Positions (External Fixed Locations)

2.2 OPERATORS

During the monitoring undertaken on 31 January 2016, Event Noise Monitoring personnel were located at each position identified in Figure 1. The monitoring exercise was undertaken by the following personnel:

- Position 1: Roger Treagus: BA, MA Env. Stud, MAAS.
- Position 2: Oliver Dibley: BEng(Audio)
- Position 3: Gary Hall BSc (Hons) Env Sci.

2.3 MONITORING EQUIPMENT

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

The sound level meters and calibrator used for the monitoring have been checked, adjusted and aligned to conform to the Type 1 specifications and issued with a conformance certificate (NATA).

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	Nor 140	1404619	3/07/17	Rion NC-73	11127965	3/11/16
2	B&K 2250L	2741104	23/10/17	Rion NC-73	11127965	3/11/16
3	B&K 2250L	2741105	22/1/17	Rion NC-73	11127965	3/11/16

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 monitoring period winds speeds on site were typically light to south easterly winds up to 20 km/h. The temperature was generally warm with partly overcast conditions.

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

TABLE 2.3: SUMMARY OF METEOROLOGICAL DATA

Time	Temp °C	Wind			Pressure hP	Rain since 9 am mm
		Direction	Speed km/h	Gust km/h		
5:00 pm	16.2	SSE	11	20	1003.1	0
5:30 pm	15.9	S	11	20	1003.4	0
6:00 pm	16	SSE	8	15	1003.7	0
6:30 pm	16	S	9	17	1003.7	0
7:00 pm	15.7	SSE	8	15	1003.8	0
7:30 pm	15.8	SSE	7	13	1004.0	0
8:00 pm	15.9	SE	8	15	1004.2	0
8:30 pm	15.9	SE	7	13	1004.4	0
9:00 pm	15.6	SSE	6	11	1004.6	0
9:30 pm	16.2	SSE	4	7	1005.0	0
10:00 pm	15.9	S	4	7	1005.4	0
10:30 pm	14.7	SSE	3	6	1005.4	0

2.5 METEOROLOGICAL INFLUENCES ON MONITORING

During the main match the, light SE winds would have tended to carry noise from the SCG away from the residential areas, and may have resulted in a reduction in noise levels at the three monitoring positions.

3 RESULTS OF MONITORING

3.1 METHODOLOGY

Noise monitoring was completed continuously at each location throughout the monitoring period with the maximum noise level recorded for every two minute period. During the monitoring, 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 that for the majority of the two minute period receptor noise levels (from amplified activities in the SCG) were compliant with the NMP criteria.

3.2 MONITORING RESULTS

Noise monitoring during the Australia v India T20 Cricket match held on 31 January 2016 at the SCG was conducted between 2:30 pm and 10:40 pm at monitoring positions 1, 2 and 3. The measured noise levels and associated notes that were recorded during this period are presented in Appendix B.

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

At Positions 1 and 2 the match was audible at times, but no exceedances were recorded. At Position 3 the match was generally inaudible relative to traffic and other ambient noise.

All recorded L_{Amax} noise levels were greater than the noise criteria set in the NMP for noise emanating from sound amplification equipment. 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 passing vehicles, aircraft overhead and pedestrians and event patrons outside the venue.

3.3 CONCERT HOTLINE

During the event no noise complaint related calls were received on the concert 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 Australia v India T20 Cricket match held on 31 January 2016 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 2:30 pm to 10:40 pm. Throughout the monitoring, noise levels were recorded continuously and the maximum levels for every two minute period were identified. 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 Cricket match it was identified that noise levels from the event were within the criteria defined in the site's NMP throughout the noise monitoring.

At Positions 1 and 2 the match was audible at times, but no exceedances were recorded. At Position 3 the match was generally inaudible relative to traffic and other ambient noise.

No complaints were forwarded to Event Noise Management staff for investigation.

During the event, L_{Amax} noise levels were higher than the 60 dB(A) criteria for the majority of the time due to traffic noise and patrons external to the venue. These sources of noise are not directly attributable to the sound amplification system and therefore do not represent an exceedance of the criteria.

APPENDIX A

ACOUSTIC GLOSSARY

APPENDIX A: GLOSSARY OF ACOUSTIC TERMINOLOGY

A-Weighting	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.
dB (decibel)	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^2).
dB(A)	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.
dB(C)	This is a standard weighting of the audible frequencies, commonly used for the measurement of Peak Sound Pressure level.
Facade Noise Level	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.
Free Field	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.
Hertz (Hz)	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.
L_{Aeq} **Equivalent Continuous Sound Level**	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.
$L_{A90,T}$	This is the dB(A) level exceeded 90% of the time, T.
$L_{A10,T}$	This is the dB(A) level exceeded 10% of the time, T.
L_{Amax}	is the maximum A-weighted sound pressure level recorded over the period stated.
L_{Cmax}	is the maximum C-weighted sound pressure level recorded over the period stated.

APPENDIX B

DETAILED MONITORING DATA (FIXED POSITIONS)

EVENT NOISE MANAGEMENT

Project Number:	4464	**Date:**	31/01/2015
Project Description:	Cricket: ODI Australia vs India T20		
Monitoring Location:	3- Robertson and Martin Road -Stanton Hall		
Operator:	Gall Hall		
Weather Description:	Hot, moderate breeze		
Instrument:	B&K 2250L	**Calibrator Model:**	Rion NC-73
Instrument Serial:	2741105	**Calibrator Serial:**	11127965
Instrument NATA Calibration Date:	22/1/17	**Calibrator NATA Calibration Date:**	3/11/16
Pre-calibration:	93.6	**Post calibration:**	93.7

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
14:48:00	60.2	Local Traffic
14:50:00	66.0	Local Traffic
14:52:00	65.3	Cicadas and local traffic, pedestrians talking
14:54:00	66.2	Birds and local traffic
14:56:00	64.7	Local traffic, birds
14:58:00	60.1	Local traffic
15:00:00	67.2	Local traffic, birds
15:02:00	65.5	Local traffic, birds, wind in trees
15:04:00	64.5	Local traffic, people playing in sports field
15:06:00	68.9	Local traffic, car horn, birds
15:08:00	65.5	Sports car, wind in trees
15:10:00	61.7	Local traffic and wind in trees
15:12:00	62.5	Local traffic and wind in trees
15:14:00	61.9	Local traffic and wind in trees

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
15:16:00	76.2	Plane overhead
15:18:00	72.4	Motorbike
15:20:00	65.7	Local traffic and wind in trees
15:22:00	61.9	Local traffic and wind in trees
15:24:00	61.9	Local traffic, birds, wind in trees
15:26:00	77.0	Plane overhead
15:28:00	78.6	Plane overhead
15:30:00	61.9	Local traffic and wind in trees
15:32:00	63.2	Local traffic and wind in trees
15:34:00	60.7	Local traffic and wind in trees
15:36:00	64.3	Local traffic and wind in trees
15:38:00	66.9	Plane overhead
15:40:00	68.6	Local traffic and wind in trees
15:42:00	76.6	Plane overhead
15:44:00	67.3	traffic, birds
15:46:00	63.5	Plane overhead
15:48:00	66.8	traffic, birds
15:50:00	63.2	traffic, birds
15:52:00	65.5	traffic, birds
15:54:00	66.3	Plane overhead
15:56:00	62.5	traffic, birds
15:58:00	61.8	Traffic
16:00:00	61.5	Plane
16:02:00	64.1	traffic, birds

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
16:04:00	68.8	traffic, birds
16:06:00	65.0	traffic, birds
16:08:00	65.6	Motorbikes
16:10:00	59.7	traffic, birds
16:12:00	70	traffic, birds, load car
16:14:00	64.0	traffic, birds
16:16:00	71.7	Plane
16:18:00	71.3	Motorbike
16:20:00	62.0	traffic, birds
16:22:00	60.7	traffic, birds
16:34:00	60.9	traffic, birds, cicadas
16:36:00	67.8	traffic, birds
16:38:00	70.1	Motorbike
16:40:00	69.5	Helicopter
16:42:00	65.5	Motorbike
16:44:00	75.2	Motorbike, Cicadas, pedestrians
16:46:00	61	traffic, birds, cicadas
16:48:00	62.6	traffic, birds, cicadas
16:50:00	65.9	traffic, birds, cicadas
16:52:00	68.3	traffic, birds, cicadas
16:54:00	65	traffic, birds, cicadas
16:56:00	64.9	traffic, birds, cicadas
16:58:00	62.9	traffic, birds, cicadas
17:00:00	62.1	traffic, birds, cicadas

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
17:02:00	75.2	Motorbike, traffic, birds, cicadas
17:04:00	66.9	Motorbike, children playing
17:06:00	73.6	Loud car
17:08:00	66.5	Local traffic
17:10:00	71.5	Helicopter, local traffic
17:12:00	65.5	Local traffic
17:14:00	62.1	Local car door slam, traffic, birds
17:16:00	70.8	Truck driving past
17:18:00	68.1	Motorbike, local traffic
17:20:00	63.5	Local traffic
17:22:00	70.1	Local traffic
17:24:00	71.8	Motorbike, butcher birds
17:26:00	76.6	Bus
17:28:00	76.3	Talking with pedestrians
17:30:00	75.0	Birds, truck
17:32:00	64.5	Traffic, birds
17:34:00	69.1	Traffic, birds
17:36:00	67	Local starting up, driving off
17:38:00	75.5	Talking with pedestrians
17:40:00	61.0	Local traffic
17:42:00	56.5	Birds, traffic
17:44:00	58.9	Traffic, birds
17:46:00	61.3	Traffic, cicadas, birds
17:48:00	66.9	Motorbike

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
17:50:00	61.0	Bus, local traffic
17:52:00	73.7	Local motorbike
17:54:00	64.6	Local traffic
17:56:00	64.6	Motorbike
17:58:00	64.0	Bus
18:00:00	72.6	Motorbike
18:02:00	58.8	Traffic
18:04:00	69.1	Traffic, birds
18:06:00	68.8	Helicopter, local car door
18:08:00	75.6	Talking to pedestrians
18:10:00	61.1	Local traffic
18:12:00	63.5	Local traffic
18:14:00	72.8	Sports car
18:16:00	76.7	Talking to pedestrians
18:18:00	63.5	Local traffic
18:20:00	63.5	Local traffic
18:22:00	65.1	Local traffic
18:24:00	65.9	Local traffic, birds
18:26:00	71.3	Loud local car
18:28:00	73.4	Local traffic, birds
18:30:00	68.1	Local traffic, birds
18:32:00	81.2	Motorbike
18:34:00	66.1	Local traffic, birds
18:36:00	64	Local traffic, birds

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
18:38:00	66.6	Local traffic, birds
18:40:00	69.8	Local traffic, birds
18:42:00	67.7	Local traffic, birds
18:44:00	71.4	Loud truck
18:46:00	71.8	Tow truck driving past
18:48:00	67.8	Local traffic
18:50:00	66.3	Local traffic
18:52:00	74.5	Loud ute
18:54:00	75.3	Motorbike
18:56:00	67.6	Local traffic
18:58:00	64.7	Local traffic
19:00:00	70.7	Birds
19:02:00	71.0	Local traffic
19:04:00	70.5	Noisy miner birds
19:06:00	71.1	Local traffic
19:08:00	60.0	Local traffic
19:50:00	69.0	Traffic, birds
19:52:00	66.5	Traffic, birds
19:54:00	67.6	Traffic, birds
19:56:00	62.2	Traffic, birds
19:58:00	64.7	Traffic, birds
20:00:00	64.2	Traffic, birds
20:02:00	85.9	Motorbike
20:04:00	66.3	Local traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
20:06:00	61.5	Local traffic
20:08:00	62.7	Local traffic
20:10:00	60.8	Local traffic
20:12:00	65.4	Local traffic
20:14:00	63.6	Local traffic
20:32:00	59.5	Local traffic
20:34:00	66.4	Local traffic
20:36:00	67.9	Motorbike
20:38:00	56.3	Local traffic
20:40:00	67.1	Loud car
20:42:00	62.6	Traffic
20:44:00	59.0	Traffic
20:46:00	58.5	Traffic
20:48:00	60.2	Traffic
20:50:00	68.1	Local car revving
20:52:00	57.3	Traffic
20:54:00	69.9	Motorbike
20:56:00	71.7	Sports car
20:58:00	99.5	Fireworks from venue
21:00:00	60.6	Traffic
21:02:00	61.9	Traffic
21:04:00	63.2	Traffic
21:06:00	66.4	Traffic
21:08:00	57.8	Traffic

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
21:10:00	56.3	Traffic
21:12:00	68.1	Traffic dominant crowd levels 46 dB first time anything heard
21:14:00	54.9	Traffic
21:16:00	60.6	Traffic
21:18:00	73.8	Traffic
21:20:00	68.4	Motorbike
21:22:00	56.9	Traffic
21:24:00	57	Traffic
21:26:00	59	Traffic
21:28:00	55.9	Traffic
21:30:00	59.8	Traffic
21:32:00	77.4	Loud ute
21:34:00	62.3	Traffic
21:36:00	57.4	Traffic
21:38:00	65.3	Traffic
21:40:00	82.1	Girl screaming after walking into spider
21:42:00	64.8	Local traffic
21:44:00	61.4	Traffic
21:46:00	63.9	Traffic
21:48:00	62.3	Traffic
21:50:00	57.2	Traffic
21:52:00	59.6	Traffic
21:54:00	59.1	Traffic
21:56:00	66.6	Traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
21:58:00	77.2	Motorbike
22:00:00	68.3	Car door slamming, traffic
22:02:00	59.7	Traffic
22:04:00	64.5	Traffic
22:06:00	59.9	Traffic
22:08:00	57.8	Traffic
22:10:00	60.7	Traffic
22:12:00	63.1	Traffic, pedestrians talking
22:14:00	60.5	Traffic
22:16:00	61.3	Traffic
22:18:00	59.7	Traffic
22:20:00	66.4	Traffic
22:22:00	59.4	Traffic
22:24:00	58.3	Traffic
22:26:00	58.3	Traffic
22:28:00	57.0	Traffic
22:30:00	57.2	Traffic
22:32:00	57.1	Traffic
22:34:00	58.3	Traffic
22:36:00	62.2	Traffic
22:38:00	61.2	Traffic
22:40:00	88.3	Fireworks
22:42:00	92.1	Fireworks

Project Number:	4464	**Date:**	31/1/2016
Project Description:	Cricket: ODI Australia vs India T20		
Monitoring Location:	2- Poate Lane		
Operator:	Roger Treagus		
Weather Description:	Warm and light winds		
Instrument:	Nor3	**Calibrator Model:**	Rion NC-73
Instrument Serial:	1404619	**Calibrator Serial:**	11127965
Instrument NATA Calibration Date:	3/7/2017	**Calibrator NATA Calibration Date:**	3/11/16
Pre-calibration:	93.8	**Post calibration:**	93.8

Time	**L_{Amax} dB(A)**	**Description of Noise and/or Changes to Weather**
14:14:00	56.3	Local traffic dominates and aircraft plus wind in trees no scg noise
14:16:00	55.1	
14:18:00	57.2	
14:20:00	60.7	
14:22:00	57	
14:24:00	59.3	Pa audible less than 45
14:26:00	56.3	Pa audible less than 45
14:28:00	55.3	Pa audible less than 45
14:30:00	53.2	No SCG noise
14:32:00	53.7	No SCG noise
14:34:00	54.4	No SCG noise
14:36:00	59.5	Dominant source traffic Moore Park Rd and wind in trees no SCG noise
14:38:00	56.2	
14:40:00	56	

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
14:42:00	55.7	Dominant source traffic Moore Park Rd and wind in trees no SCG noise
14:44:00	54.2	
14:46:00	53.4	
14:48:00	61.5	
14:50:00	53.7	
14:52:00	51.5	
14:54:00	54.8	"SCG audible <45
14:56:00	55.3	"SCG audible <45
14:58:00	54.3	Wind in trees increasing
15:00:00	53.8	Wind in trees increasing
15:02:00	58.8	No scg noise
15:04:00	54.7	No scg noise
15:06:00	51.6	No scg noise
15:08:00	55.6	No scg noise
15:10:00	55.3	No scg noise
15:12:00	54.3	No scg noise
15:14:00	54.4	No scg noise
15:16:00	61.5	No scg noise
15:18:00	54.3	Aircraft and traffic no SCG noise
15:20:00	54.5	Traffic no SCG noise
15:22:00	54.1	Traffic no SCG noise
15:24:00	54.6	Traffic no SCG noise
15:26:00	57.4	Traffic no SCG noise
15:28:00	59.6	Traffic no SCG noise

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
15:30:00	62.6	Traffic dominant source no SCG noise audible
15:32:00	55.4	
15:34:00	54.5	
15:36:00	57.6	
15:38:00	57.2	
15:40:00	54.1	
15:42:00	55.9	
15:44:00	63.3	
15:46:00	56.6	
15:48:00	54.4	
15:50:00	53.9	
15:52:00	54	
15:54:00	55.4	
15:56:00	52.2	
15:58:00	52.3	
16:00:00	56.2	SCG <45
16:02:00	61.9	Traffic dominant no SCG noise
16:04:00	56.6	
16:06:00	63.8	
16:08:00	53.3	
16:10:00	55.1	
16:12:00	53.1	
16:14:00	54.7	
16:16:00	53.8	

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
16:18:00	60.6	Traffic dominant no SCG noise
16:20:00	54.6	Traffic dominant no SCG noise
16:22:00	55.8	Traffic dominant no SCG noise
16:24:00	61.7	Traffic dominant no SCG noise
16:26:00	61.9	Traffic dominant no SCG noise
16:28:00	60.8	Traffic dominant no SCG noise
16:30:00	56.6	Traffic dominant source SCG crowd noise
16:32:00	54.1	Traffic dominant no SCG noise
16:34:00	53.6	
16:36:00	55.6	
16:38:00	59.9	
16:40:00	57	
16:42:00	55.5	
16:44:00	56.4	
16:46:00	61.7	
16:48:00	55.7	
16:50:00	52.9	
16:52:00	54.2	
16:54:00	55	
16:56:00	53.3	
16:58:00	55.5	
17:00:00	54.4	
17:02:00	52.9	SCG PA audible <45
17:04:00	55.4	Traffic dominant no SCG noise

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
17:06:00	54.8	Traffic dominant no SCG noise
17:08:00	55.8	
17:10:00	57.1	
17:12:00	58.4	
17:14:00	54.8	
17:16:00	54.8	
17:18:00	53.9	Traffic main source no SCG noise
17:20:00	53.6	
17:22:00	55	
17:24:00	63.8	
17:26:00	55.8	
17:28:00	55.4	
17:30:00	56.6	
17:32:00	56.5	
17:34:00	54	
17:36:00	55.1	
17:38:00	57.1	
17:40:00	57.2	
17:42:00	55.9	
17:44:00	56.3	
17:46:00	56.8	Traffic dominant SCG crowd noise
17:48:00	62.1	Traffic dominant" SCG PA <48dBA
17:50:00	52.8	Traffic dominant no SCG noise
17:52:00	52.5	Traffic dominant no SCG noise

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
17:54:00	52.7	Traffic dominant no SCG noise
17:56:00	54.4	
17:58:00	57	
18:00:00	54.3	
18:02:00	57	
18:04:00	55.1	
18:06:00	55	
18:08:00	53.5	
18:10:00	54.5	
18:12:00	56	
18:14:00	54.1	
18:16:00	63.2	
18:18:00	56.1	
18:20:00	59.8	
18:22:00	58.6	
18:24:00	59.3	Traffic dominant source "SCG PA approx 48dBA
18:26:00	56.4	
18:28:00	57	
18:30:00	53.3	
18:32:00	57.5	
18:34:00	57.1	
18:36:00	55.4	
18:38:00	56.5	

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
18:40:00	57.2	Traffic dominant source "SCG PA approx 48dBA
18:42:00	58	Traffic dominant source "SCG PA approx 48dBA
18:44:00	55.8	Traffic main source no SCG noise
18:46:00	56.5	
18:48:00	58.9	
18:50:00	54.7	
18:52:00	56.7	
18:54:00	56.3	
18:56:00	61	Traffic main source SCG PA approx 48dBA
18:58:00	56.1	
19:00:00	57.3	
19:02:00	54.1	
19:04:00	61.1	
19:06:00	56.7	
19:08:00	58.4	
19:32:00	58.2	Traffic main source SCG PA 46dBA
19:34:00	57.2	Traffic main source SCG PA 46dBA
19:36:00	53	Traffic main source SCG crowd noise
19:38:00	52.3	
19:40:00	52.9	
19:42:00	62.1	
19:44:00	55	
19:54:00	62.1	Traffic main source SCG PA 48dBA
19:56:00	55	Traffic main source SCG PA 48dBA

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
19:58:00	55.4	Traffic main source SCG crowd noise
20:00:00	53.9	
20:02:00	55	
20:04:00	51.9	
20:06:00	56.6	
20:08:00	50.8	
20:10:00	77.7	
20:12:00	51.5	
20:14:00	53.9	
20:16:00	51.9	
20:18:00	56.2	
20:20:00	57.1	SGE PA 46dBA
20:22:00	57.7	Traffic crowd noise
20:24:00	58.2	
20:26:00	58.4	
20:28:00	58.2	
20:30:00	59.3	
20:32:00	58.1	
20:34:00	57.6	SGE PA dominent and 56 lamax
20:36:00	58.8	Traffic main source SCG crowd noise
20:38:00	58.3	SGE PA 53dBA
20:40:00	57.2	Traffic SCG crowd
20:42:00	56.5	Traffic SCG crowd

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
20:44:00	56.3	Traffic SCG crowd
20:46:00	56.1	Traffic SCG crowd
20:48:00	54.6	Traffic SCG crowd
20:50:00	54.8	Traffic SCG crowd
20:52:00	55.3	SCG PA 53dBA
20:54:00	54.2	Traffic main source PA 53dBA
20:56:00	51.7	Traffic main source PA 53dBA
20:58:00	86.9	Traffic main source PA 53dBA
21:00:00	86	Fireworks over 93dBA
21:02:00	54.8	Traffic main source no SCG noise
21:04:00	52.9	
21:06:00	54.5	
21:08:00	51.3	
21:10:00	52.3	
21:12:00	52.6	Traffic main source crowd noise
21:14:00	54.4	
21:16:00	51.1	
21:18:00	55.7	
21:20:00	54.4	
21:22:00	53.4	
21:24:00	50.2	
21:26:00	52.6	
21:28:00	52.3	
21:30:00	52.2	Traffic main sourcd crowd plus PA 48dBA

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
21:32:00	51.4	Traffic main sourcd crowd plus PA 48dBA
21:34:00	53.2	crowd noise
21:36:00	52.6	Traffic plus PA to 48dBA
21:38:00	54.1	
21:40:00	54.4	
21:42:00	53	
21:44:00	49.8	
21:46:00	51.1	
21:48:00	51	Traffic main source plus SCG crowd noise
21:50:00	53.7	Traffic main source plus SCG crowd noise
21:52:00	53.5	plus PA 55dBA max
21:54:00	53.7	Traffic plus crowd
21:56:00	51.9	
21:58:00	51.4	
22:00:00	51.2	
22:02:00	54.2	
22:04:00	57.4	
22:06:00	54.8	
22:08:00	51.3	
22:10:00	58.2	
22:12:00	57.2	Traffic plus crowd plus PA 48dBA
22:14:00	57.4	Traffic plus crowd plus PA 48dBA
22:16:00	51.1	Traffic plus crowd plus PA 48dBA

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
22:18:00	51.3	Traffic plus crowd plus PA 48dBA
22:20:00	53.5	
22:22:00	48.6	
22:24:00	54.1	
22:26:00	52.8	plus PA 53dBA
22:28:00	51.7	plus PA 53dBA
22:30:00	55.7	plus PA 53dBA
22:32:00	54.4	Traffic plus crowd plus PA 53dBA
22:34:00	51.7	Traffic plus crowd
22:36:00	54.4	Traffic plus crowd plus PA 53dBA
22:38:00	57.7	
22:40:00	54.5	
22:42:00	90.4	
22:44	55.0	Event Finished

Project Number:	4464	**Date:**	31/1/2016
Project Description:	Cricket: ODI Australia vs India T20		
Monitoring Location:	1 - Corner of Leinster and Regent Streets		
Operator:	Oliver Dibley		
Weather Description:	Warm with light winds		
Instrument:	Bk1	**Calibrator Model:**	Rion NC-73
Instrument Serial:	2741104	**Calibrator Serial:**	11127965
Instrument NATA Calibration Date:	23/10/2017	**Calibrator NATA Calibration Date:**	3/11/2016
Pre-calibration:	93.5	**Post calibration:**	93.5

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
14:32:00	-	Calibrate instrument
14:34:00	85.4	Traffic
14:36:00	83.5	Traffic
14:38:00	83.5	Traffic
14:40:00	72.8	Traffic
14:42:00	74.5	Traffic
14:44:00	72.9	Traffic
14:46:00	79.4	Traffic
14:48:00	75.5	Traffic
14:50:00	72.2	Traffic
14:52:00	68.8	Traffic
14:54:00	79.4	Traffic
14:56:00	77.7	Traffic
14:58:00	77.2	Traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
15:00:00	74.4	Traffic
15:02:00	70.3	Traffic
15:04:00	70.9	Traffic
15:06:00	69.6	Traffic
15:08:00	84.2	Traffic
15:10:00	71.7	Traffic
15:12:00	76.7	Traffic
15:14:00	68.9	Traffic
15:16:00	78.0	Traffic
15:18:00	78.1	Traffic
15:20:00	77.1	Traffic
15:22:00	70.3	Traffic
15:24:00	77.9	Traffic
15:26:00	82.3	Traffic
15:28:00	74.8	Traffic
15:30:00	75.3	Traffic
15:32:00	76.2	Traffic
15:34:00	77.4	Traffic
15:36:00	76.8	Traffic
15:38:00	79.8	Traffic
15:40:00	74.6	Traffic
15:42:00	82.0	Traffic
15:44:00	83.2	Traffic
15:46:00	72.5	Traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
15:48:00	78.2	Traffic
15:50:00	74.5	Traffic
15:52:00	79.0	Traffic
15:54:00	78.6	Traffic
15:56:00	76.1	Traffic
15:58:00	78.4	Traffic
16:00:00	78.4	Traffic
16:02:00	82.8	Traffic
16:04:00	93.4	Traffic motorbike
16:06:00	75.7	Traffic
16:08:00	89.1	Traffic
16:10:00	80.4	Traffic
16:12:00	77.9	Traffic
16:14:00	76.3	Traffic
16:16:00	77.8	Traffic
16:18:00	80.5	Traffic
16:20:00	73.9	Traffic
16:22:00	75.1	Traffic
16:24:00	78.5	Traffic
16:26:00	78.7	Traffic
16:28:00	81.0	Traffic
16:30:00	81.7	Traffic
16:32:00	74.3	Traffic
16:34:00	79.8	Traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
16:36:00	80.8	Traffic
16:38:00	75.9	Traffic
16:40:00	80.0	Traffic
16:42:00	79.9	Traffic
16:50:00	82.1	Traffic
16:52:00	75.1	Traffic
16:54:00	75.7	Traffic
16:56:00	76.1	Traffic
16:58:00	74.3	Traffic
17:00:00	78.1	Traffic
17:02:00	72.7	Traffic
17:04:00	75.2	Traffic
17:06:00	71.2	Traffic
17:08:00	75.3	Traffic
17:10:00	77.0	Traffic
17:12:00	77.6	Traffic
17:14:00	72.7	Traffic
17:16:00	85.2	Traffic
17:18:00	75.8	Traffic
17:20:00	76.3	Traffic
17:22:00	70.4	Traffic
17:24:00	76.9	Traffic
17:26:00	77.9	Traffic
17:28:00	82.6	Traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
17:30:00	78.7	Traffic
17:32:00	79.4	Traffic
17:34:00	74.2	Traffic
17:36:00	78.9	Traffic
17:38:00	73.0	Traffic
17:40:00	73.4	Traffic
17:42:00	90.3	Traffic
17:44:00	78.1	Traffic
17:46:00	81.9	Traffic
17:48:00	90.5	Yelling person near monitoring Location
17:50:00	74.4	Traffic
17:52:00	71.1	Traffic
17:54:00	79.3	Traffic
17:56:00	83.7	Traffic
17:58:00	78.5	Traffic
18:00:00	78.4	Traffic
18:02:00	79.5	Traffic
18:04:00	79.3	Traffic
18:06:00	78.4	Traffic
18:08:00	68.5	Traffic
18:10:00	79.6	Traffic
18:12:00	77.8	Traffic
18:14:00	74.0	Traffic
18:16:00	71.8	Traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
18:18:00	83.4	Traffic
18:20:00	82.7	Traffic
18:22:00	75.0	Traffic
18:24:00	79.9	Traffic
18:26:00	72.0	Traffic
18:28:00	73.9	Traffic
18:30:00	84.8	Traffic
18:32:00	83.3	Traffic
18:34:00	81.2	Traffic
18:36:00	75.4	Traffic
18:38:00	81.5	Traffic
18:40:00	85.9	Traffic
18:42:00	77.3	Traffic
18:44:00	78.7	Traffic
18:46:00	75.1	Traffic
18:48:00	73.1	Traffic
18:50:00	79.1	Traffic
18:52:00	72.3	Traffic
18:54:00	74.9	Traffic
18:56:00	76.9	Traffic
18:58:00	78.4	Traffic
19:00:00	79.1	Traffic
19:02:00	81.7	Traffic
19:04:00	82.2	Traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
19:06:00	81.7	Traffic
19:08:00	75.4	Traffic
19:10:00	72.5	Traffic
19:12:00	78.3	Traffic
19:14:00	82.1	Traffic
19:16:00	78.2	Traffic
19:18:00	71.0	Traffic
19:20:00	73.7	Traffic
19:22:00	70.7	Traffic
19:24:00	76.5	Traffic
19:26:00	77.0	Traffic
19:28:00	77.4	Traffic
19:30:00	83.2	Traffic
19:32:00	80.5	Traffic
19:34:00	86.8	Traffic
19:36:00	79.5	Traffic
19:38:00	75.1	Traffic
19:40:00	80.3	Traffic
19:42:00	85.9	Traffic
19:44:00	79.1	Traffic
19:46:00	79.1	Traffic
19:48:00	76.4	Traffic
19:50:00	78.1	Traffic
19:52:00	69.2	Traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
19:54:00	81.5	Traffic
19:56:00	76.6	Traffic
19:58:00	89.1	Traffic
20:00:00	84.4	Traffic
20:02:00	78.2	Traffic
20:04:00	73.1	Traffic
20:06:00	88.6	Traffic/motorbike
20:08:00	72.8	Traffic
20:10:00	73.2	Traffic
20:12:00	74.1	Traffic
20:14:00	75.8	Traffic
20:16:00	69.5	Traffic
20:18:00	72.1	Traffic
20:20:00	71.1	Traffic
20:22:00	80.7	Traffic
20:24:00	69.8	Traffic
20:26:00	90.8	Smacked a mosquito (loud clapping noise)
20:28:00	76.6	Traffic
20:30:00	76.9	Traffic
20:32:00	71.3	Traffic
20:34:00	73.6	Traffic
20:36:00	82.3	Traffic
20:38:00	73.6	Traffic
20:40:00	79.8	Traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
20:42:00	89.8	Traffic/ Harley Davidson motorbike
20:44:00	80.6	Traffic
20:46:00	75.9	Traffic
20:48:00	75.9	Traffic
20:50:00	79.7	Traffic
20:52:00	76.8	Traffic
20:54:00	70.9	Traffic
20:56:00	76.4	Traffic
20:58:00	106.3	Fireworks
21:00:00	69.2	Traffic
21:02:00	87.6	Traffic
21:04:00	79.9	Traffic
21:06:00	75.3	Traffic
21:08:00	68.4	Traffic
21:10:00	80.4	Traffic
21:12:00	79.0	Traffic
21:14:00	77.8	Traffic
21:16:00	75.6	Traffic
21:18:00	81.1	Traffic
21:20:00	68.8	Traffic
21:22:00	68.9	Traffic
21:24:00	72.0	Traffic
21:26:00	79.5	Traffic
21:28:00	69.2	Traffic

Time	L_{Amax} dB(A)	Description of Noise and/or Changes to Weather
21:30:00	81.6	Traffic
21:32:00	69.7	Traffic
21:34:00	79.4	Traffic
21:36:00	88.1	Traffic
21:38:00	72.4	Traffic
21:40:00	80.0	Traffic
21:42:00	73.7	Traffic
21:44:00	74.4	Traffic
21:46:00	72.7	Traffic
21:48:00	70.4	Traffic
21:50:00	77.3	Traffic
21:52:00	68.7	Traffic
21:54:00	70.8	Traffic
21:56:00	67.9	Traffic
21:58:00	69.0	Traffic
22:00:00	81.8	Traffic
22:02:00	90.7	Traffic/siren ambulance
22:04:00	75,5	Traffic
22:06:00	67.8	Traffic
22:08:00	69.6	Traffic
22:10:00	76.8	Traffic
22:12:00	76.3	Traffic
22:14:00	72.0	Traffic
22:16:00	71.5	Traffic

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
22:18:00	74.0	Traffic
22:20:00	68.7	Traffic
22:22:00	67.7	Traffic
22:24:00	82.1	Traffic
22:26:00	85.4	Traffic
22:28:00	87.0	Traffic
22:30:00	77.4	Traffic
22:32	76.9	Traffic
22:34	69.3	Traffic
22:36	70.8	Traffic
22:38	72.2	Traffic
22:40	105.3	Fireworks
22:42	107.3	Fireworks
22:44	-	Event Completion