



Sydney Cricket Ground Trust

**NOISE MONITORING, ICC WOMEN'S T20
WORLD CUP: SEMI FINALS, 5 MARCH
2020**

March 2020



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: 6083

Document Title: Noise Monitoring, ICC Women's T20 World Cup: Semi Finals, 5 March 2020

Client: Sydney Cricket Ground Trust

Document Reference: /Network/Projects/6083/Reporting/6083_WT20_Report01.odt

Version:	Description:	Date:	Author:	Approved by:
00	Draft for internal review	09/03/2020	BW	-
01	Report for Client	10/03/2020	BW	SW
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 ICC Women's T20 World Cup semi finals held on 5 March 2020 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.'

Where rain was not prohibitive, noise levels were measured for the duration of the amplified activities associated with the event from 7:30 pm though 10:45 pm at the three positions required by the Noise Management Plan. It was noted that the initial match (India v England) was cancelled due to the rain, and commencement of the second match (Australia v South Africa) was delayed by approximately 1hour 25minutess, with South Africa batting for 13 overs with an adjusted score.

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 generally measured below 50 dBA, occasionally 55.*
- Occasionally at Position 2, and only measured audibly on two occasions at <55 dBA.*
- Occasionally at Position 3, and measured noise from the PA was 53 dBA or less.*

Ambient levels as a result of vehicles, and birds in the local areas, were measured up to and above the criteria (60 dB(A)).

All positions were dominated by ambient activity such as vehicle noise, pedestrians, birds, and occasional aircraft. Event noise was generally audible during a break in or minimal ambient activity and elevated music from the venue (between overs, or after wickets).

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

CONTENTS

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

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 ICC Women's T20 World Cup semi finals held on 5 March 2020 as part of the requirements under the Noise Management Plan (NMP) for the facility¹.

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 Thursday 5 March 2020. The gates opened at 2:30 pm, with the following pre-event schedule:

- 2:30pm Gates Open
- 3:00pm Coin toss for India v England Semi Final
- 6:00pm Coin toss for Australia v South Africa Semi Final

The initial semi final (India v England) was cancelled due to persistent rain.

The second semi final was delayed by approximately 1 hour and 25 minutes with play commencing at 7:25 pm. This additionally resulted in South Africa batting for only 13 overs with an adjusted score.

All PA was turned off at 10:45 pm, ahead of the 11:00 pm curfew (allowing for occurrences beyond the control of the Trust, delaying the sporting event).

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:

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

'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 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.*

Section 3.2.1 of the NMP details the timing of sporting events as follows:

Sporting events will not commence before 0800 hours or finish after 2230 hours. Notwithstanding the above, events may continue until 2300 hours if an occurrence beyond the control of the SCGT delays the sporting event.

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)

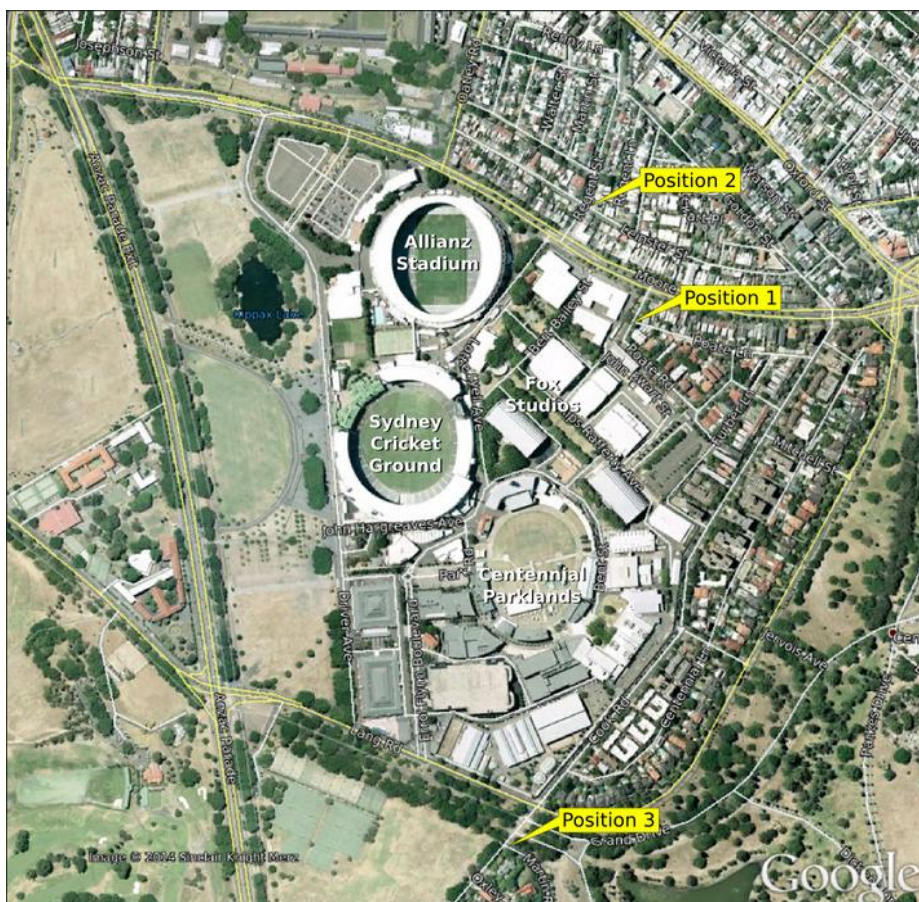


Figure 1: Noise Monitoring Positions (External Fixed Locations)

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: Roger Treagus: BA, MA Env. Stud, MAAS.
- Position 2: Daniel Richardson: Certificate III IDMT (Undergrad)
- Position 3: Beau Weyers: BEng(Mech&Space), RPEQ, MAAS.

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	Bruel & Kjaer 2250L	3006647	14/08/21	93.8	93.8
2	Bruel & Kjaer 2250L	2741104	06/12/21	93.9	93.8
3	Norsonic 140	1404664	12/06/21	94.1	94.1
Field Calibrator	Bruel & Kjaer 4231	3009973	21/05/20	-	-

Field calibrations of each of the instruments were 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 match and amplified activities of Thursday 5th March the weather generally included low dense cloud and rain or drizzle through until 7:00 pm, with the cloud lifting slightly and only occasional drizzle through until conclusion at 10:45 pm, according to on-site observations. In addition, there were fairly consistent moderate north-north-easterly winds throughout the monitoring until 9:00 pm when winds eased.

The low cloud and wet surfaces have the potential to aid in propagation of noise to monitoring positions, however the wind conditions during the event are likely have resulted in reduced propagation of amplified noise to Positions 1 and 2, with some potential to elevate levels to Position 3 (south). Table 2.3 presents a summary of the meteorological data from Sydney Airport during the event.

TABLE 2.3: SUMMARY OF METEOROLOGICAL DATA

Date/Time	Temp	Rain (mm)	Relative Humidity	Wind Direction	Wind Speed (km/hr)	Gusts (km/hr)
05/11:00pm	22.8	28	89	NNE	2	9
05/10:30pm	23	28	89	NNE	11	15
05/10:00pm	22.9	28	89	NNE	13	19
05/09:30pm	22.7	28	88	NNE	13	15
05/09:00pm	23	28	85	NNE	17	24
05/08:30pm	23.1	28	85	NNE	20	30
05/08:00pm	23.1	28	88	NNE	26	33
05/07:53pm	23.1	28	89	NNE	24	33
05/07:30pm	23.2	28	88	NE	20	30
05/07:12pm	23.4	28	89	NNE	24	32
05/07:00pm	23.2	28	90	NNE	30	37
05/06:30pm	23.1	28	91	NNE	37	50
05/06:00pm	22.7	27.8	92	NNE	37	50
05/05:53pm	22.6	27.8	93	NNE	37	52
05/05:30pm	22.4	27.2	93	NNE	37	56
05/05:16pm	22.3	26.8	93	NNE	35	56
05/05:00pm	22	26.2	92	NNE	41	54
05/04:46pm	22.2	25.4	93	NNE	39	59
05/04:39pm	22.4	25.2	93	NNE	30	50
05/04:30pm	22.4	24.8	92	NNE	35	46
05/04:07pm	22.2	23.6	92	NNE	28	48
05/04:00pm	22.4	23.2	91	NNE	22	33
05/03:57pm	22.3	23	91	NNE	22	33
05/03:30pm	21.8	21.6	93	NNE	19	28
05/03:12pm	21.9	20.8	94	NNE	26	37
05/03:00pm	21.9	19.2	94	NNE	24	33
05/02:30pm	22.4	13.2	95	NE	6	15

3 RESULTS OF MONITORING

3.1 METHODOLOGY

Whenever the rain was not dominant, 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 (Root Mean Square) noise level recorded during the two minute period. Hence, even where exceedances of the criteria are measured, no exceedances were identified as resulting from the amplified event noise (i.e. generally occurring from localised road traffic and bird noise).

3.2 MONITORING RESULTS

Noise monitoring results were recorded at each location every two minutes of amplification between 7:30 pm and 10:45 pm on Thursday 5th March 2020.

It is noted that some amplification may have occurred during the scheduled initial match, however monitoring was not possible due to continued rain. Monitoring commenced once rain eased and it was confirmed that the second match would go ahead from 7:25 pm.

The measured noise levels and associated notes that were recorded during the monitoring 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.

The following event noise levels were observed:

- At various times at Position 1, and generally measured below 50 dBA, occasionally 55.
- Occasionally at Position 2, and only measured audibly on two occasions at <55 dBA.
- Occasionally at Position 3, and measured noise from the PA was 53 dBA or less.

It is noted that the majority of recorded L_{Amax} noise levels were measured up to or greater than the noise criteria of 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, flying-foxes, and passing horse riders (only at P3).

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 ICC Women's T20 World Cup semi finals match held on 5 March 2020 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 10:45 pm.

It was noted that the initial match (India v England) was cancelled due to the rain, and commencement of the second match (Australia v South Africa) was delayed by approximately 1 hour and 25 minutes and with South Africa batting for a reduced 13 overs (instead of 20) with an adjusted score.

During the 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 the match was audible at various times, and occasionally audible at Positions 2 and 3.

No exceedances due to the event noise were recorded. The majority of the noise levels measured at all three positions were dominated by extraneous noise sources, and all 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.

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

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.
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_{A50, T}	This is the dB(A) level exceeded 50% of the time, T.
L_{WA}	The A-weighted sound power level in dB.



APPENDIX B

DETAILED MONITORING DATA



EVENT NOISE MANAGEMENT

Project Number:	6083	Date:	5 March 2020
Project Description:	ICC Women's T20 Semi Final		
Monitoring Location:	Position 1 – Corner of Poate Lane and Poate Street		
Operator:	RT		
Weather Description:	Rain periods, low dense cloud, moderate northerly wind		
Instrument:	Bruel & Kjaer 2250L	Calibrator Model:	Bruel & Kjaer 4231
Instrument Serial:	3006647	Calibrator Serial:	3009973
Instrument NATA Calibration Validity:	14/08/21	Calibrator NATA Calibration Validity:	21/05/20
Pre-calibration:	93.8	Post calibration:	93.8

Time	L _{Amax} dB(A)	Description of Noise and/or Changes to Weather
19:26	69.1	Traffic on Moore Park Road, and local streets dominate all periods, with notes on other audible sources identified below.
19:28	63.2	
19:30	61.0	
19:32	67.5	
19:34	69.1	
19:36	71.7	
19:38	75.7	
19:40	64.1	
19:42	72.6	Aircraft.
19:44	75.3	Aircraft.
19:46	66.0	SCG: Just perceptible PA, levels <50dBA
19:48	71.7	
19:50	65.5	
19:52	75.4	Aircraft.
19:54	74.5	Aircraft.
19:56	69.1	
19:58	69.6	Aircraft and crickets (insects)
20:00	68.2	
20:02	60.3	
20:04	67.5	
20:06	66.0	

Time	L _{Amax} dB(A)	Description of Noise and/or Changes to Weather
20:08	68.9	Aircraft and crickets (insects)
20:10	84.1	SCG: Faint PA, significantly <50dBA Local vehicle maximum
20:12	67.0	
20:14	66.2	
20:16	67.1	
20:18	68.0	
20:20	62.3	
20:22	65.7	
20:24	72.6	
20:26	73.1	
20:28	69.7	
20:30	68.9	
20:32	67.8	
20:34	70.6	SCG: Faint PA, <55dBA
20:36	56.7	SCG: Faint PA, <55dBA
20:38	69.9	
20:40	73.6	
20:42	72.4	
20:44	74.1	Aircraft
20:46	67.3	
20:48	57.7	
20:50	63.2	
20:52	68.5	
20:54	71.2	
20:56	73.3	
20:58	74.5	
21:00	70.1	
21:02	72.2	
21:04	67.8	Aircraft
21:06	73.6	
21:08	67.0	
21:10	72.6	SCG: Faint PA, <55dBA
21:12	70.4	SCG: Faint PA, <55dBA
21:14	61.5	
21:16	68.6	
21:18	69.4	

Time	L _{Amax} dB(A)	Description of Noise and/or Changes to Weather
21:20	72.2	
21:22	58.7	
21:24	61.7	SCG: Faint PA, reduced ambient more clearly identify levels are <50dBA
21:26	71.2	SCG: PA at 50 dBA maximum
21:28	62.6	SCG: PA at 50 dBA maximum
21:30	68.2	SCG: PA at 50 dBA maximum
21:32	60.5	SCG: PA music just audible <50dBA
21:34	65.7	SCG: PA music just audible <50dBA
21:36	70.8	SCG: PA music just audible <50dBA
21:38	78.6	SCG: PA music just audible <50dBA
21:40	69.1	Aircraft
21:42	70.4	Aircraft
21:44	62.5	
21:46	70.6	
21:48	74.5	SCG: PA just audible <50 dBA Local rubbish collection maximum
21:50	59.1	
21:52	59.5	
21:54	63.7	
21:56	64.0	
21:58	74.3	
22:00	63.9	
22:02	63.6	
22:04	65.0	
22:06	57.1	
22:08	56.8	
22:10	73.2	
22:12	62.1	
22:14	71.7	Police Siren maximum, and aircraft noise
22:16	65.5	
22:18	61.8	
22:20	66.3	
22:22	63.3	
22:24	67.4	
22:26	62.9	
22:28	59.8	
22:30	63.6	PA just audible < 50 dBA

Time	L_{Amax} dB(A)	<u>Description of Noise and/or Changes to Weather</u>
22:32	69.3	PA just audible < 50 dBA
22:34	65.4	Noise audible venue, rain starting
22:36	68.3	
22:38	67.2	
22:40	73.8	Rain increasing
22:42	68.2	Aircraft and traffic noise. Ceased measurements Noted all power to PA system off at 22:45, no audible activities occurred between 22:42 and 22:45.



EVENT NOISE MANAGEMENT

Project Number:	6083	Date:	5 March 2020
Project Description:	ICC Women's T20 Semi Final		
Monitoring Location:	Position 2 – Corner of Robertson and Lienster Street		
Operator:	DR		
Weather Description:	Raining, some wind		
Instrument:	Bruel & Kjaer 2250L	Calibrator Model:	Bruel & Kjaer
Instrument Serial:	2741104	Calibrator Serial:	3009973
Instrument NATA Calibration Validity:	06/12/21	Calibrator NATA Calibration Validity:	21/05/20
Pre-calibration:	93.9	Post calibration:	93.8

Time	L _{Amax} dB(A)	Description of Noise and/or Changes to Weather
19:20	80.9	Stormwater Noise. Maximums above 80 from single vehicle movements (low frequency exhaust, motorbikes, trucks). Traffic on Moore Park Road and Regent Street dominate all periods, with notes on other audible sources identified below.
19:22	83.6	
19:24	68.6	
19:26	79.3	
19:28	74.7	
19:30	69.0	
19:32	72.5	
19:34	71.0	
19:36	75.0	
19:38	71.6	
19:40	77.4	
19:42	74.5	
19:44	79.0	
19:46	73.0	
19:48	84.5	
19:50	80.4	
19:52	76.7	Relocated away from stormwater noise. Traffic continues to dominate all periods, with notes on other audible sources identified below.
19:54	72.3	
19:56	72.0	

Time	L _{Amax} dB(A)	Description of Noise and/or Changes to Weather
19:58	73.4	
20:00	73.3	
20:02	73.2	
20:04	73.7	
20:06	75.0	
20:08	70.8	
20:10	70.9	
20:12	72.6	
20:14	70.2	SCG: Just perceptible music (< 50 dBA) Other: Traffic dominating maximums.
20:16	75.3	
20:18	70.6	
20:20	71.2	
20:22	77.6	
20:24	74.7	
20:26	74.7	
20:28	71.3	
20:30	77.1	
20:32	81.0	
20:34	71.5	
20:36	73.0	
20:38	72.4	
20:40	72.2	
20:42	74.3	SCG: Just perceptible, barely audible
20:44	71.7	Crowd cheering audible
20:46	70.6	
20:48	76.5	SCG: Just perceptible, barely audible
20:50	74.5	
20:52	75.0	
20:54	70.5	
20:56	83.2	
20:58	76.2	
21:00	75.9	SCG: Just perceptible music, barely audible
21:02	72.1	
21:04	81.3	

Time	L _{Amax} dB(A)	Description of Noise and/or Changes to Weather
21:06	73.2	
21:08	72.6	
21:10	75.8	SCG: Just perceptible music
21:12	73.1	
21:14	72.4	
21:16	75.7	
21:18	72.7	
21:20	71.1	SCG: Music audible and identifiable (ABBA), levels < 50dBA
21:22	75.5	SCG: Music audible and identifiable (ABBA), levels < 50dBA
21:24	71.9	
21:26	78.8	SCG: Music audible and identifiable, level ~ 53dBA
21:28	74.1	
21:30	70.4	
21:32	73.9	SCG: Music audible and identifiable, level ~ 54dBA
21:34	73.2	
21:36	74.1	SCG: Music audible and identifiable, level < 54dBA
21:38	72.9	
21:40	71.9	
21:42	78.7	
21:44	72.0	
21:46	70.1	
21:48	73.0	SCG: Music barely audible
21:50	71.1	
21:52	75.2	Crowd cheering audible
21:54	71.0	
21:56	73.0	SCG: Music barely audible
21:58	70.8	
22:00	76.9	
22:02	71.5	
22:04	70.7	
22:06	69.4	
22:08	67.6	
22:10	75.5	
22:12	88.6	Police Siren maximum
22:14	70.8	



Time	L _{Amax} dB(A)	Description of Noise and/or Changes to Weather
22:16	69.9	
22:18	76.9	
22:20	70.4	
22:22	74.6	
22:24	70.9	
22:26	81.2	
22:28	78.1	
22:30	70.7	
22:32	71.1	Crowd cheering audible
22:34	72.1	Noise audible venue, rain starting.



EVENT NOISE MANAGEMENT

Project Number:	6083	Date:	5 March 2020
Project Description:	ICC Women's T20 Semi Final		
Monitoring Location:	Position 3 – Martin Road		
Operator:	BW		
Weather Description:	Low cloud, constant rain, NNE moderate wind, wet surfaces		
Instrument:	Norsonic 140	Calibrator Model:	Bruel & Kjaer 4231
Instrument Serial:	1404664	Calibrator Serial:	3009973
Instrument NATA Calibration Validity:	12/06/21	Calibrator NATA Calibration Validity:	21/05/20
Pre-calibration:	94.1	Post calibration:	94.1

Time	L _{Amax} dB(A)	Description of Noise and/or Changes to Weather
19:20	-	observations only until 7:36pm
19:22	-	Traffic on Lang Road, and local streets dominate all periods, with notes on other audible sources identified below. Occasional sources include bats, birds, wind in trees, crowd cheers, and horses.
19:24	-	
19:26	-	
19:28	-	
19:30	-	Cheer on commencement ~55 dBA
19:32	-	
19:34	-	
19:36	84.1	Traffic on Lang Road, and local streets dominate all periods, with notes on other audible sources identified below. Occasional sources include bats, birds, wind in trees, crowd cheers, and horses.
19:38	68.1	
19:40	67.3	
19:42	79.6	
19:44	75.8	SCG: short musical interlude just audible, <55 dBA
19:46	64.5	
19:48	61.8	
19:50	78.4	
19:52	71.1	SCG: traffic consistently 55 or more, venue <50 dBA
19:54	63.2	

Time	L _{Amax} dB(A)	Description of Noise and/or Changes to Weather
19:56	66.1	SCG: potential audible music from venue possible 56 dBA, unclear if definitely SCG
19:58	69.9	Aircraft and bats
20:00	66.4	Wind calming, can hear some clapping from venue. Traffic still dominant.
20:02	59.9	
20:04	61.4	
20:06	74.5	SCG: Just audible announcements PA < 55 dBA, just audible against traffic.
20:08	75	Motorbike
20:10	78.5	Cough near microphone maximum
20:12	60.2	
20:14	57.9	Public park rugby approximately 200m away, bats, traffic, wind in trees.
20:16	61.2	Cheer, PA, music < 53 dBA
20:18	63.9	
20:20	61.3	
20:22	58.4	
20:24	64.5	Break in near traffic, minimum levels down to 48 dBA
20:26	62.2	SCG: music just barely audible < 50 dBA
20:28	72.7	Cough near microphone maximum
20:30	59.2	
20:32	59.9	
20:34	63.1	Music audible but not discernible < 50 dBA
20:36	66.7	Residents talking 25m away approximately 52 dBA
20:38	72.9	Aircraft, pedestrian rolling trolley along pavers
20:40	59.5	
20:42	80.9	Aircraft, cough near microphone, cheers up to 48 dBA audible
20:44	66.2	
20:46	63.6	Moped nearby
20:48	61.7	SCG: audible 'Zombie Nation' ~50 dBA, traffic minimum of 53 dBA
20:50	62	Drizzle. Audible on umbrella 52-57 dBA
20:52	63.1	
20:54	66.2	
20:56	65.4	SCG: PA clearly audible 53 dBA Other: rain 55 dBA, bats 58 dBA
20:58	71.9	Rain, local vehicles 58 dBA
21:00	70	Heavier rain 64 dBA
21:02	74.6	Innings break. Aircraft noise.

Time	L _{Amax} dB(A)	Description of Noise and/or Changes to Weather
21:04	72.8	
21:06	75.3	
21:08	72.8	SCG: music audible < 56 dBA, combined with traffic and rain
21:10	73.2	SCG: music audible < 52 dBA, during break in traffic
21:12	74.6	SCG: music audible and discernible 'YMCA' ~ 51 dBA
21:14	68	SCG: clearest music so far ~ 53 dBA. Likely earlier measures at 56 dBA from traffic coincident noise.
21:16	71	
21:18	71.8	Wind and large water drops > 60 dBA, aircraft maximum
21:20	69.7	
21:22	62.5	SCG: Music audible (ABBA) and discernible < 53 dBA
21:24	64	SCG: Michael Jackson clearly audible 50 – 52 dBA
21:26	61.5	SCG: Michael Jackson clearly audible 53 dBA
21:28	68.4	SCG: Maccarena audible < 50 dBA
21:30	75.1	
21:32	55.4	SCG: 'Fire / Hot hot hot' audible ~ 50 dBA
21:34	81.8	Cough near microphone maximum, PA < 49 dBA
21:36	64.2	SCG: vocals audible from PA, < 50 dBA
21:38	71.6	Aircraft
21:40	73.7	During breaks in traffic minimum level approximately 45 dBA
21:42	61.8	
21:44	61.7	
21:46	68.2	
21:48	56.5	SCG: Cheering and coincident PA approximately 52 dBA
21:50	60.9	
21:52	71.9	Loud cheer up to 60 dBA, traffic defining maximums, no PA audible
21:54	61.6	SCG: Music < 52 dBA, loud cheer audible up to 59 dBA. Traffic defining maximum
21:56	62.3	
21:58	70	gust results in large rain drops from tree
22:00	64.3	SCG: Music and chanting approximately 53 dBA
22:02	64.6	Traffic continues, wet roads creating higher tyre noise, occasional bat squawks
22:04	70.7	
22:06	63.2	

Time	L_{Amax} dB(A)	<u>Description of Noise and/or Changes to Weather</u>
22:08	57.2	SCG: Music just audible
22:10	67.2	Local traffic and vehicle activity
22:12	61.7	SCG: Very soft music just audible, <50 dBA
22:14	74.5	Aircraft overhead
22:16	59.9	
22:18	59	
22:20	64	
22:22	60.4	
22:24	64.5	Cheering audible. Rain approaching. SCG: Venue still well below limits. Packing up to collect the rest of the team.