Sydney Cricket Ground Trust

NOISE MONITORING, NRL -SYDNEY ROOSTERS VS CANTERBURY BULLDOGS

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Company:
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Executive Summary

Monitoring of noise levels at sensitive receptors in the area surrounding Allianz Stadium was undertaken during the Sydney Roosters v Canterbury Bulldogs NRL match held on 30 June 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 6:20 pm to 9:45 pm at the two 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 measured continuously and the maximum 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 NRL match at Allianz Stadium, it was identified that noise levels from the event were less than the criteria defined in the site's NMP. When noise levels were within 3 dB(A) of the noise criteria at Position 1 the PA operators were promptly informed that they were approaching the noise criteria and requested to reduce the volume (in accordance with the NMP requirements). *Once the PA operator was contacted by Event Noise Management staff they responded promptly by reducing the levels.*

At Position 1 the match was audible at times, however generally noise from the match was masked by traffic and other ambient noise.

At Position 2 the match was audible at times, however noise levels were well below the criteria and noise from the match was usually masked by 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, patrons external to the venue, and pedestrians. 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 Sydney Roosters v Canterbury Bulldogs NRL match held on 30 June 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 Allianz Stadium on Thursday 30 June 2016. The gates opened at 6:20 pm and the game concluded at approximately 9:30 pm, with amplified music, announcements and advertising continuing at a low level until approximately 9:40 pm.

1.3 EVENT NOISE CRITERIA

Noise limits for sporting events held at Allianz Stadium 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 Allianz Stadium:***
>
> - *At a point within one (1) metre of the boundary nearest to Allianz Stadium at 234 Moore Park Road, Paddington*
> - At a point within one (1) metre of the boundary nearest to Allianz Stadium of 10 Alexander Street, Paddington.

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

2 MONITORING METHODOLOGY

2.1 MONITORING POSITIONS

Monitoring during the match was 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)

2.2 OPERATORS

During the monitoring undertaken on 30 June 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: Gary Hall: Bsc (Hons) Env Sci.
- Position 2: Roger Treagus: BA, MA Env. Stud, MAAS.

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 within the last 24 months 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	B&K 2250	2741105	22/01/17	Svan SV03A	358	12/01/18
2	Nor 140	1404663	6/07/17	Svan SV03A	358	12/01/18

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 wind speeds on the site were generally moderate north westerly throughout the event. The temperature was generally cold with clear skies.

2.5 METEOROLOGICAL INFLUENCES ON MONITORING

The early evening moderate north westerly winds during the main match would have tendered to carry noise from Allianz Stadium away from the closest residential areas,.

3 RESULTS OF MONITORING

3.1 METHODOLOGY

Noise monitoring was completed at each location throughout the monitoring period with the maximum noise levels 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 within the Allianz Stadium) were compliant with the NMP criteria.

3.2 MONITORING RESULTS

Noise monitoring during the Sydney Roosters v Canterbury Bulldogs NRL Match held on 30 June 2016 at Allianz Stadium was conducted between 6:20 pm and 9:45 pm at monitoring positions 1 and 2. The measured noise levels and associated notes that were recorded during this period are presented in Appendix B. No periods were measured to exceed the criteria.

The noise monitoring identified a few periods with noise levels approaching the noise criteria at Position 1 during the monitoring period. On each of these occasions the PA operators were promptly informed they were approaching the noise criteria and requested to reduce the volume (in accordance with the NMP requirements). Once the PA operator was contacted by Event Noise Management staff they responded by reducing the levels and a greater margin of compliance was achieved.

Typically during periods where noise levels approached the criteria, measured L_{Amax} noise levels from traffic noise were significantly greater than that of the amplified noise from Allianz Stadium during the same 2-minute period.

At Position 1 the match was audible at times, however generally noise from the match was masked by traffic and other ambient noise. Noise from amplified music was noted to exceed the criteria for a short period at approximately 7:44 pm just prior to the game start and again at 8:44 pm. The amplified music was reduced immediately when advised by ENM staff

At Position 2 the match was audible at times, however well below the criteria and generally noise from the match was masked by 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 ambient noise sources and not the Allianz Stadium PA system. These sources included passing vehicles, aircraft overhead, event patrons outside the venue, and pedestrians.

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 and no complaints were received by Event Noise Management staff for investigation.

4 CONCLUSIONS

Monitoring of amplified noise from Allianz Stadium during the Sydney Roosters v Canterbury Bulldogs NRL match held on 30 June 2016 was completed at two positions as required by the site's Noise Management Plan (NMP).

Noise levels were measured for the duration of the amplified activities associated with the event from 6:20 pm to 9:45 pm. Throughout the monitoring, noise levels were measured continuously, with the maximum levels for every two minute period recorded. 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 during the two minute period.

During the NRL match it was identified that noise levels from the event were less than the criteria defined in the site's NMP for the duration of the monitoring, except for a short period at approximately 7:44 pm just prior to the game start and at 8:44 pm. The amplified music was measured above the criteria but was reduced immediately when advised by ENM staff.

When noise levels were within 3 dB(A) of the noise criteria at Position 1 the PA operators were promptly informed that they were approaching the noise criteria and requested to reduce the volume (in accordance with the NMP requirements). Once the PA operator was contacted by Event Noise Management staff they responded promptly by reducing the levels.

At Position 1 the match was audible at times, however generally noise from the match was masked by traffic and other ambient noise.

At Position 2 the match was audible at times, however noise levels were well below the criteria and generally noise from the match was masked by 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:**	30/6/16
Project Description:	NRL: Sydney Roosters v Canterbury Bankstown Bulldogs (Allianz Stadium)		
Monitoring Location:	234 Moore Park Road		
Operator:	GH		
Weather Description:	Cool, clear skies, dry, light westerly breeze		
Instrument:	B & K 2	**Calibrator Model:**	Svan03A
Instrument Serial:	2741105	**Calibrator Serial:**	358
Instrument NATA Calibration Date:	22/1/17	**Calibrator NATA Calibration Date:**	12 /1/18
Pre-calibration:	93.8	**Post calibration:**	93.9

Time	**L_{Amax} dB(A)**	**Description of Noise and/or Changes to Weather**
	Criteria 60	
18:32:00	-	Traffic dominant, no audible PA
18:34:00	80.5	Traffic dominant PA audible at 54 - 57 dB(A)
18:36:00	82.3	Traffic dominant no PA audible over traffic noise
18:38:00	80.8	Traffic dominant no PA audible over traffic noise
18:40:00	81.6	Traffic dominant no PA audible over traffic noise
18:42:00	80.5	Traffic dominant no PA audible over traffic noise
18:44:00	77.9	Traffic dominant no PA audible over traffic noise
18:46:00	74.8	Traffic dominant no PA audible over traffic noise
18:48:00	78.9	Traffic dominant no PA audible over traffic noise
18:50:00	79.7	Traffic dominant
18:52:00	78.6	Traffic dominant
18:54:00	86.2	Traffic dominant

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
18:56:00	77.3	Traffic dominant
18:58:00	84.3	Traffic dominant
19:00:00	78.8	Traffic dominant
19:02:00	81.1	Traffic dominant no PA audible over traffic noise
19:04:00	79.1	Traffic dominant
19:06:00	74.3	Traffic dominant
19:08:00	78.9	Traffic dominant
19:10:00	82.5	Traffic dominant
19:12:00	77.4	Traffic dominant
19:14:00	75.3	Pa audible but around 58 dB(A) traffic dominant
19:16:00	84.2	Traffic dominant
19:18:00	79.6	Traffic dominant
19:20:00	87.6	PA audible 58 -59 dB(A)
19:22:00	79.7	Traffic dominant
19:24:00	75.8	PA audible 56-58 dB(A)
19:26:00	87.0	Traffic dominant
19:28:00	79.2	Traffic dominant
19:30:00	84.2	Traffic dominant
19:32:00	80.3	Traffic dominant
19:34:00	88.9	Traffic dominant
19:36:00	74.0	Traffic dominant
19:38:00	75.9	Traffic dominant
19:40:00	75.2	Traffic dominant- windy

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
19:42:00	81.6	Traffic dominant - windy
19:44:00	83.4	Music system 61 - 66 dB(A) – advised to reduce
19:46:00	81.6	Traffic dominant asked to reduce PA by 4-5dB(A)
19:48:00	81.1	PA 60.4 dB(A) traffic dominant
19:50:00	82.7	PA audible but traffic dominant
19:52:00	75.9	PA audible but traffic dominant
19:54:00	73.3	PA audible but traffic dominant
19:56:00	78.1	Traffic
19:58:00	77.0	Traffic dominant
20:00:00	78.1	Traffic
20:02:00	81.8	Traffic dominant
20:04:00	76.1	Music 59 dB(A) traffic dominant
20:06:00	83.4	Traffic PA audible 58 dB(A)
20:08:00	77.2	Traffic
20:10:00	77.6	Crowd 70 dB(A) traffic dominant
20:12:00	72.4	Traffic
20:14:00	78.6	Traffic
20:16:00	85.8	Motorbikes
20:18:00	81.0	Crowd 75.8 dB(A), PA 59 - 60.3 dB(A)
20:20:00	75.8	Traffic
20:22:00	77.6	Traffic dominant
20:24:00	83.3	Traffic
20:26:00	79.4	Traffic
20:28:00	75.4	PA announcer 58 dB(A)

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
20:30:00	79.3	Traffic dominant
20:32:00	76.4	Traffic
20:34:00	74.5	Traffic dominant
20:36:00	75.9	Traffic drums from crowd 62 dB(A)
20:38:00	73.1	Traffic crowd 69 dB(A)
20:40:00	77.3	Half time siren 62 dB(A), traffic dominant PA music, announcer 56-59 dB(A)
20:42:00	77.0	Music 57 dB(A)
20:44:00	76.6	Music up to 64 dB(A), called Allianz Stadium staff to reduce levels 4 dB(A)
20:46:00	80.4	Music and PA 58- 59 dB (A) traffic dominant
20:48:00	76.6	Traffic dominant
20:50:00	74.6	Traffic PA 59 dB(A)
20:52:00	71.6	Traffic
20:54:00	78.1	Traffic dominant
20:56:00	77.6	Traffic dominant
20:58:00	74.4	Traffic
21:00:00	80.5	Traffic
21:02:00	79.0	Traffic
21:04:00	73.5	Traffic
21:06:00	76.6	Traffic
21:08:00	74.1	Traffic
21:10:00	77.3	Crowd drums 66 dB(A)
21:12:00	83.2	Traffic, bus

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
21:14:00	77.7	Traffic
21:16:00	75.8	Traffic
21:18:00	76.0	Traffic
21:20:00	74.0	Traffic
21:22:00	79.9	Traffic, Crowd 69 dB(A)
21:24:00	84.0	Traffic, planes, bus
21:26:00	74.4	PA announcer 57 -58 dB(A), traffic dominant
21:28:00	80.0	Traffic
21:30:00	92.8	Motorbike
21:32:00	73.0	Traffic
21:34:00	73.7	Traffic
21:36:00	72.0	Crowd 66 dB(A), traffic dominant
21:38:00	85.2	Traffic dominant
21:40:00	74.8	Final siren traffic dominant
21:42:00	71.0	Traffic dominant PA audible 56-57 dB(A)
21:44:00	80.0	Bus, traffic PA audible but traffic dominant
21:46:00	82.8	Traffic

EVENT NOISE MANAGEMENT

Project Number:	4464	**Date:**	30/06/16
Project Description:	NRL: Sydney Roosters v Canterbury Bankstown Bulldogs (Allianz Stadium)		
Monitoring Location:	10 Alexander Street Paddington		
Operator:	RT		
Weather Description:	Cool clear skies		
Instrument:	Nor10	**Calibrator Model:**	03A
Instrument Serial:	1404663	**Calibrator Serial:**	358
Instrument NATA Calibration Date:	6/7/17	**Calibrator NATA Calibration Date:**	12/1/18
Pre-calibration:	93.9	**Post calibration:**	93.9

Time	**L_{Amax} dB(A)**	**Description of Noise and/or Changes to Weather**
		Ambient noise sources – Traffic, Aircraft, Residential, Allianz Stadium Crowd Noise after 8pm
18:20:00	75.6	Monitoring Begins – No Source Sounds
18:22:00	73.1	No Source Sounds
18:24:00	75.7	No Source Sounds
18:26:00	73.9	No Source Sounds
18:28:00	56.7	No Source Sounds
18:30:00	76.2	No Source Sounds
18:32:00	76	No Source Sounds
18:34:00	57.4	No Source Sounds
18:36:00	58.5	No Source Sounds
18:38:00	64.7	No Source Sounds
18:40:00	58.3	No Source Sounds
18:42:00	65.1	No Source Sounds

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
18:44:00	69.7	No Source Sounds
18:46:00	62.6	No Source Sounds
18:48:00	63.1	No Source Sounds
18:50:00	55.3	No Source Sounds
18:52:00	75.1	No Source Sounds
18:54:00	67.9	No Source Sounds
18:56:00	70.8	No Source Sounds
18:58:00	75.1	No Source Sounds
19:00:00	64	No Source Sounds
19:02:00	66.1	No Source Sounds
19:04:00	61.7	No Source Sounds
19:06:00	68.3	No Source Sounds
19:08:00	63.5	No Source Sounds
19:10:00	75.9	No Source Sounds
19:12:00	75.7	Siren from Allianz Stadium (47dB(A)), Announcement 44dB(A)
19:14:00	63.3	No Source Sounds
19:16:00	66.5	No Source Sounds
19:18:00	76.5	No Source Sounds
19:20:00	56.7	No Source Sounds
19:22:00	72.1	Allianz Stadium Announcement 43dB(A)
19:24:00	69	No Source Sounds
19:26:00	80.2	No Source Sounds
19:28:00	68.7	No Source Sounds
19:30:00	68.5	No Source Sounds

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
19:32:00	61.8	No Source Sounds
19:34:00	68.2	No Source Sounds
19:36:00	52	No Source Sounds
19:38:00	70.1	No Source Sounds
19:40:00	75.5	Allianz Stadium Music and Announcement 48 dB(A) L_{Amax}
19:42:00	70.7	No Source Sounds
19:44:00	65.3	No Source Sounds
19:46:00	77.1	No Source Sounds
19:48:00	69.8	No Source Sounds
19:50:00	56.7	Music and PA – up to 50 dB(A)
19:52:00	74.6	No Source Sounds
19:54:00	58.9	Music 50 dB(A)
19:56:00	71.3	No Source Sounds
19:58:00	63.1	No Source Sounds
20:00:00	55.9	No Source Sounds
20:02:00	61.3	No Source Sounds
20:04:00	73	No Source Sounds
20:06:00	66.7	No Source Sounds
20:08:00	64.2	No Source Sounds
20:10:00	73.2	No Source Sounds
20:12:00	52.6	No Source Sounds
20:14:00	68.5	No Source Sounds
20:16:00	64.6	No Source Sounds
20:18:00	75.7	No Source Sounds

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
20:20:00	75	No Source Sounds
20:22:00	74.2	Announcement – 44 dB(A)
20:24:00	53.3	No Source Sounds
20:26:00	55.5	No Source Sounds
20:28:00	63.9	No Source Sounds
20:30:00	63.5	No Source Sounds
20:32:00	57.5	No Source Sounds
20:34:00	53.6	No Source Sounds
20:36:00	63.9	No Source Sounds
20:38:00	53.3	No Source Sounds
20:40:00	53.1	Allianz Stadium Siren – 45 dB(A)
20:42:00	58.9	Music 46 dB(A)
20:44:00	54.3	No Source Sounds
20:46:00	73.7	No Source Sounds
20:48:00	61.2	Music 48 dB(A) L_{Amax}
20:50:00	61.8	Announcements 48 dB(A)
20:52:00	72.4	No Source Sounds
20:54:00	56.6	Music 48 dB(A)
20:56:00	76.4	Music 48 dB(A)
20:58:00	53.9	No Source Sounds
21:00:00	57.6	No Source Sounds
21:02:00	62.7	No Source Sounds
21:04:00	85.8	No Source Sounds
21:06:00	58.3	No Source Sounds

Time	L_{Amax} dB(A)	**Description of Noise and/or Changes to Weather**
21:08:00	63.8	No Source Sounds
21:10:00	64	No Source Sounds
21:12:00	58.8	Announcements 44 dB(A)
21:14:00	60.1	No Source Sounds
21:16:00	61.4	No Source Sounds
21:18:00	54.5	No Source Sounds
21:20:00	67.2	No Source Sounds
21:22:00	51.7	No Source Sounds
21:24:00	75.4	No Source Sounds
21:26:00	61.2	No Source Sounds
21:28:00	65.3	No Source Sounds
21:30:00	60.3	Announcements 44 dB(A)
21:32:00	63.5	No Source Sounds
21:34:00	57.6	No Source Sounds
21:36:00	66.9	No Source Sounds
21:38:00	54.5	Music 43 dB(A)
21:40:00	55.1	No Source Sounds
21:42:00	60.6	Siren 46 dB(A)
21:44:00	76.5	Announcements 48 dB(A)
21:46:00	59.8	Announcements 48 dB(A)
21:48:00	57.9	Announcements 48 dB(A)