

# Public Document Pack

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**To: All Members of the Licensing Hearing Panel**

Dear Councillor

**LICENSING HEARING PANEL - TUESDAY, 25TH APRIL, 2017**

Please find attached the following report for the meeting of the Licensing Hearing Panel to be held on Tuesday, 25th April, 2017. This was not included in the original Agenda pack published previously.

**NIGHTCLUB NOISE REVIEW SUBMISSION BY JOHN GAUNT SOLICITORS ON BEHALF OF WHITBREAD PLC (Pages 3 - 26)**

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Yours sincerely

A handwritten signature in black ink, appearing to read "S Young".

Head of Legal and Democratic Services

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# FEVER AND BOUTIQUE, EPSOM NIGHTCLUB NOISE REVIEW

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Revision History		Date	Prepared by	Checked by
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# 1 INTRODUCTION

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- 1.1 An investigation into noise emission from the Fever & Boutique nightclub in Epsom has been undertaken by Scotch Partners on behalf of Whitbread. This report presents the findings of an assessment of the noise emission as a result of the recently relocated smoking area, against one of the conditions imposed by the license agreement of the nightclub. Alternative noise emission assessment methods are also discussed.
- 1.2 In order to assess the noise impact associated with the smoking area, an external noise survey has been undertaken. The measurement data have been used to assess the level of noise emission from the smoking area. Chapter 2 of this report discusses the criteria and guidance relating to this assessment, Chapter 3 describes the external noise survey, and the assessment is presented in Chapter 4. Alternative noise emission assessment methods are discussed in Chapter 5.
- 1.3 Measurement data from the noise survey are presented in Appendix A and a glossary of terminology used in this report is included in Appendix B.

### 2.1 LOCAL AUTHORITY AND LICENSING

- 2.1.1 The planning requirements for Fever & Boutique are understood to limit operation to the following times:
- Thursday to Saturday - 08:00 until 03:00 including bank and public holidays.
  - Sunday to Wednesday - 08:00 until 02:00 including bank and public holidays.
  - An additional hour to the standard and non-standard times on the day when British summertime commences.
  - No restriction on recorded music.
  - In the event of a screening of any international sporting event involving any of the countries from the UK and EIRE which falls outside the current permitted hours – from one hour before the start of the event until one hour after the end of the event.

- 2.1.2 The operating license is also understood to be subject to a number of conditions. Condition 5 from *Annex 2 – Conditions consistent with the operating schedule* relates to noise emission and is as follows:

*5. Noise levels measured outside the building at one metre from the nearest noise-sensitive façade shall not exceed 5 dB below background levels in compliance with BS 4142.*

- 2.1.3 Condition 5 from Annex 2 of the license agreement does not specify which source of noise the limit applies to. It is therefore assumed that this applies to all noise associated with the nightclubs operation, including patron noise.

### 2.2 BS 4142

- 2.2.1 British Standard 4142 presents a methodology for assessing noise emission. BS 4142: 2014 *Methods for rating and assessing industrial and commercial sound* replaces the former BS 4142: 1997 *Method for rating industrial noise affecting mixed residential and industrial areas*. The current standard provides guidance on the assessment of the impact of a noise source whilst the earlier document provided guidance on the assessment of the likelihood of complaints relating to noise.

- 2.2.2 The scope on page 1 of BS 4142: 2014, states the following:

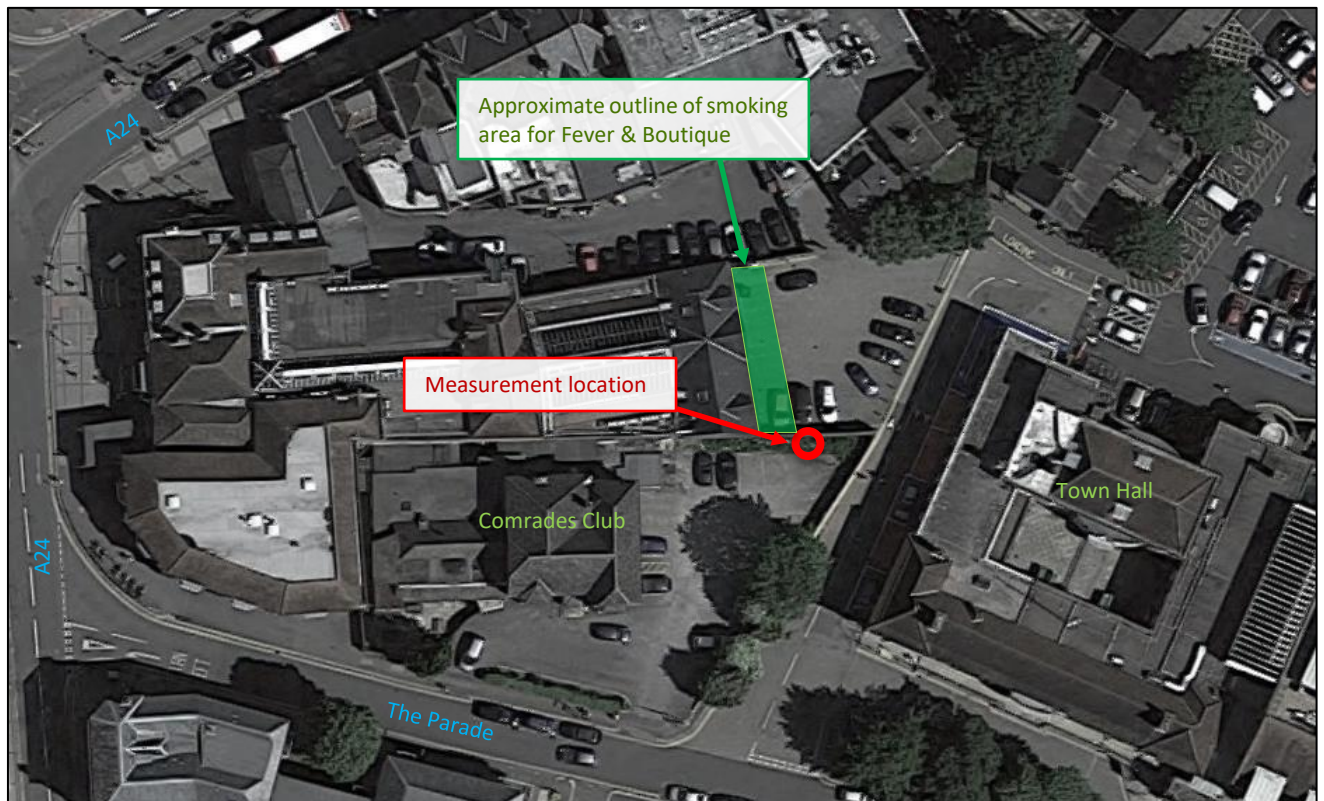
*The standard is not intended to be applied to the rating and assessment of sound from:*

- a) recreational activities, including all forms of motorsport;*
- b) music and other entertainment;*
- f) people.*

- 2.2.3 BS 4142: 1997 does not explicitly exclude noise from recreational activities, music, or people. However it is made clear that the standard is intended to be used for the assessment of noise sources of an industrial nature. It could therefore be argued that Condition 5 inappropriately references BS4142, and this is discussed further in Section 5 of this report.
- 2.2.4 Both versions of BS 4142 present a methodology for comparing the noise level of the new source with that of the existing background noise level in the area in the absence of the new source. The greater the positive difference between the source level and the background noise level, the greater the magnitude of the impact.
- 2.2.5 The criteria of *5 dB below background level* as specified in Condition 5 of Annex 2 of the license would correspond to the risk of a complaint being between *unlikely* and of *marginal significance* when assessed according to BS 4142:1997, and the noise impact would be considered a *low impact* when assessed according to BS 4142:2014.
- 2.2.6 This report will assess noise from the smoking area of Fever & Boutique in general accordance with the methodology presented within BS 4142: 1997. Since the noise source being assessed is not explicitly excluded from the methodology, it is expected that this version of the standard was the basis for the condition.

#### 3.1 SITE DESCRIPTION

- 3.1.1 The smoking area of Fever & Boutique is located within the eastern car park as shown in Figure 3.1, and is believed to be the greatest source of noise emission to neighbouring properties. Measurements of noise arising from Fever & Boutique were taken within the site boundary of the existing Comrades Club, in the north-east corner, approximately 6m from the centre of the smoking area.



Satellite image provided by Google

**Figure 3.1** Satellite image of area with measurement location and smoking area highlighted

- 3.1.2 In addition to noise associated with Fever & Boutique, the noise climate at the measurement location consisted of the following noise sources, in order of magnitude:
- Traffic noise from the A24 and other major roads within Epsom. Noise levels from this source reduce overnight.
  - Infrequent traffic within the Town Hall car park and side road, which is not expected to have occurred overnight.
  - Occasional deliveries to Fever & Boutique, which were not observed to occur outside of daytime hours.
  - Building services noise from rooftop plant items of surrounding buildings (Town Hall and Spread Eagle Walk) which was consistent through the daytime but reduced at night.

### 3.2 MEASUREMENT METHODOLOGY

- 3.2.1 Continuous unattended noise level measurements were conducted at a single location around 4m from ground level under free-field conditions. This location was selected to provide representative data for noise levels associated with the smoking area of Fever & Boutique, as well as the background noise levels of the nearest noise-sensitive receivers.
- 3.2.2 The measurements were undertaken between 12:50 on 05/01/2017 (Thursday) and 14:15 on 09/01/2017 (Monday). Statistical and spectral data were recorded continuously throughout the measurement period in 5 minute samples.
- 3.2.3 The following equipment was used for the noise survey:

Equipment	Type	Serial No.
Norsonic 139	Precision sound analyser	1392774
Norsonic 1218	Microphone protection kit	12182517
Brüel & Kjær 4231	Calibrator	2291098

**Table 3.1 Noise measurement equipment**

- 3.2.4 The calibration of the sound level meter and associated microphone were checked prior to and on completion of the measurement period in accordance with recommended practice. No significant drift in calibration occurred during the measurement period. The accuracy of the calibrator can be traced to National Physical Laboratory Standards.
- 3.2.5 The weather conditions were generally dry with occasional showers and wind not in excess of 5 ms<sup>-1</sup>, and are therefore not expected to have affected the findings of the assessment.
- 3.2.6 Level-triggered audio recordings were made during the survey, which have been used to assist in identifying the sources of measured maximum noise levels. Audio recordings can be made available upon request.



3.3 MEASUREMENT RESULTS

3.3.1 A selection of the measurement results is presented in Appendix A, and the full data is available in electronic form on request. A graph showing the level-history for the measurements is given in Figure 3.2.



Figure 3.2 Level history graph for measurements 05/01/2017 – 09/01/2017

### **3.4 ANALYSIS OF RESULTS**

- 3.4.1 Noise levels during the day can be seen to be relatively consistent, due to the continuous presence of nearby building services noise and traffic from the A24.
- 3.4.2 Noise levels typically were at their lowest between 03:00 and 07:00, which is common for sites with noise sources of this type.
- 3.4.3 Fever & Boutique is understood to have been open on Thursday, Friday, and Saturday nights. A significant increase in noise levels was measured from around 22:00 until 02:00 on the Friday and Saturday nights, and a slight increase in noise level between 23:30 and 01:00 was measured on the Thursday night. This coincides with the expected opening times of the nightclub, and analysis of the triggered audio recordings has revealed that this was the result of patron noise within the outdoor smoking area, and music noise emanating from the nightclub.

4.1 NEAREST NOISE-SENSITIVE RECEIVERS

4.1.1 A number of neighbouring residential properties have been identified, along with the approximate outline of a new Premier Inn hotel. These are shown in Figure 4.1.



Satellite image provided by Google

**Figure 4.1** Locations of nearest noise-sensitive receivers

4.1.2 Approximate distances to the nearest window of these receivers are as follows:

- North East residence: 34m from centre of smoking area.
- Residences on The Parade: 58m from centre of smoking area.
- Proposed Premier Inn Hotel: 6m from centre of smoking area.

4.2 BACKGROUND NOISE LEVELS

4.2.1 The  $L_{A90}$  measurements made during the survey are assumed to be representative of background noise levels experienced by the three noise-sensitive receivers.

4.2.2 Background noise levels during times when nightclub patrons and music were loudest could not be directly measured due to the presence of the patron noise and music being assessed. The background noise level has instead been approximated using the measured values during periods when the nightclub was not in operation.

- 4.2.3 Background noise levels are as low as 36 dB  $L_{A90}$  on Sunday night, however it is not believed that this level would be representative of the time period while the nightclub noise was at its greatest, as noise levels would be expected to gradually reduce during the night, and Sunday night could reasonably be expected to be quieter than other nights.
- 4.2.4 Background noise levels during the day time and evening periods generally stayed at around 54 dB  $L_{A90}$  owing to the local building services plant and consistent traffic noise. Since the nightclub was most active during the periods that this building services plant is switched off and traffic noise reduced, this level is considered too high to be representative of the time period when nightclub noise was at its greatest.
- 4.2.5 A representative noise level would be expected to be when traffic and building services noise would be at a minimum, but the nightclub was not in operation. The only time period during the measurement period that would fit this criterion would be the early morning period (around 05:00 to 07:00) during which  $L_{A90}$  measurements were typically around 45 dB. It is therefore believed that these values are the most representative of background noise levels at the nearest noise-sensitive receivers on Friday and Saturday nights if the nightclub was not in operation.

### 4.3 DETERMINATION OF SOURCE NOISE LEVELS

- 4.3.1 In order to assess the noise impact from the smoking area against the criteria in Section 2.4, the  $L_{Aeq,5min}$  values must be identified in order to assess nightclub noise in general accordance with BS 4142:1997. The highest measurement from the survey is considered to be representative of the worst-case, which would usually be considered when conducting a BS 4142: 1997 assessment.
- 4.3.2 The reference values are presented for Thursday, Friday, and Saturday night in Table 4.1 below.

	Thursday night	Friday night	Saturday night
BS 4142:1997 <i>specific noise level</i>	66 dB $L_{Aeq,5min}$	76 dB $L_{Aeq,5min}$	76 dB $L_{Aeq,5min}$

**Table 4.1 Reference noise levels for a location 6 metres from the smoking area**

### 4.4 CALCULATION OF NOISE LEVELS AT RECEIVERS

- 4.4.1 The noise level at each noise-sensitive receiver has been predicted by calculating the following:
  - **Attenuation due to geometrical dispersion as defined in ISO 9613-2.** The distance from the measurement location to the source has been assumed to be 6m, and the distances used for each calculation are those presented in Section 4.1.2. Spherical free-field propagation has been assumed, which could only be expected to underestimate the actual noise levels experienced by each receiver
  - **Attenuation due to screening as defined in ISO 9613-2.** Line-of-sight between the residences on the upper floors of The Parade and the smoking area is believed to be occluded by the wall around the Comrade Club site. The associated attenuation has therefore been calculated and is presented as follows:

	Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Screening loss for residences on The Parade (dB)	6	6	7	9	11	13	16	19

**Table 4.2 Calculated screening losses for residences on The Parade**

4.4.2 Using the reference values presented in Table 4.1, the noise levels for each receiver have been predicted as follows:

		Thursday night	Friday night	Saturday night
North-East residence	BS 4142:1997 <i>specific noise level</i>	51 dB $L_{Aeq,5min}$	61 dB $L_{Aeq,5min}$	61 dB $L_{Aeq,5min}$
Residences on The Parade	BS 4142:1997 <i>specific noise level</i>	36 dB $L_{Aeq,5min}$	46 dB $L_{Aeq,5min}$	45 dB $L_{Aeq,5min}$
Proposed Premier Inn Hotel	BS 4142:1997 <i>specific noise level</i>	66 dB $L_{Aeq,5min}$	76 dB $L_{Aeq,5min}$	76 dB $L_{Aeq,5min}$

**Table 4.3 Predicted noise levels from the smoking area at each noise-sensitive receiver**

#### 4.5 ASSESSMENT AND DISCUSSION OF RESULTS

4.5.1 Compliance with Condition 5 of Annex 2 of the license agreement has been assessed for each night using the background noise level determined in 4.2.5 and the predicted noise levels for each receiver. The findings are as follows:

	Thursday night	Friday night	Saturday night
North-East residence	6 dB above background	16 dB above background	16 dB above background
Residences on The Parade	9 dB below background	4 dB above background	3 dB above background
Proposed Premier Inn	21 dB above background	31 dB above background	31 dB above background

**Table 4.4 Results of the BS 4142: 1997 assessment**

4.5.2 The assessment has concluded that the nightclub was therefore not compliant with the license agreement on the Thursday, Friday, or Saturday night measured, as noise levels would have been greater than 5 dB below the background noise level for the North-East residence, the residences on The Parade on Friday and Saturday, and the proposed Premier Inn once constructed. The noise levels were between 8 and 21 dB above the limit set in the condition on both Friday and Saturday nights for the nearby residences.

## 5 ALTERNATIVE ASSESSMENT

### 5.1 INTRODUCTION

- 5.1.1 No definitive method has been published for assessing the impact of noise from nightclub venues on neighbouring properties, which has been widely adopted within the industry. There has been much research work within this field of acoustics, including an upcoming new publication that is discussed further within this section.
- 5.1.2 The most current and commonly referenced publications are the *Noise from Pubs and Clubs* papers published by the Department for Environment, Food and Rural Affairs (DEFRA). These were published in 2005 (Phase I) and 2006 (Phase II) and presented the findings of a large-scale literature review of criteria and assessment methods of the impact of noise from pubs and clubs. The papers concluded that there was a need for a new, more rigorous assessment method.
- 5.1.3 Work is currently ongoing on a new method for assessing the impact of noise from nightclub (and other) venues on neighbouring properties. As a result of this work, a draft new standard is in the consultation stage, although it is not publicly available. The draft is titled *Good Practice Guide on the Control of Noise from Places of Entertainment* and is expected to be published later this year, although this may be subject to change following the outcome of the consultation process.
- 5.1.4 The assessment presented below is based on the method which is expected to be published later this year, and should therefore be treated as notional only. It follows then that the conclusions drawn from this assessment are indicative only.

### 5.2 ASSESSMENT

- 5.2.1 The assessment methodology compares the entertainment noise level with the prevailing noise level at neighbouring properties in the absence of the entertainment noise. The difference between the two levels is used to assess the noise impact using a range of criteria. The criterion applicable is selected based on the result of a risk assessment; a lower perceived risk allows for a less onerous criterion, and a higher perceived risk results in a more onerous criterion being selected.
- 5.2.2 As the assessment methodology is currently in draft stage and in consultation, it would be inappropriate to present a detailed assessment, and so the results of a high level assessment only are presented.
- 5.2.3 The risk assessment is based on scoring a number of questions, as a means of establishing the likely risk of the potential for a negative noise impact. The results are presented in Table 5.1 on the following page.

Criteria	Risk rating
<b>Number of events per year</b>	
< 1 event per week	0
< 30 events per year	3
Weekly, or more frequently	6
<b>Time of event</b>	
up to 20:00	0
up to 23:00	3
After 23:00	6
<b>Noise sensitive receptors</b>	
None in close proximity	0
One, or more, in close proximity (up to 50 metres)	3
Structurally adjoining	6
<b>Venue sound insulation performance</b>	
Purpose built - robust sound insulation performance	0
Average - not purpose built but structurally sound	3
Poor - weak sound insulation performance	6
<b>Confidence in management</b>	
High - well prepared noise management plan, no or very few noise complaints	0
Moderate - informal controls in place, few complaints	3
Low - no controls, poor compliance history, history of complaints	6
<b>Overall risk of disturbance (total of individual ratings)</b>	
Low	< 10
Medium	10 - 20
High	20 +

**Table 5.1 Preliminary risk assessment of the potential for disturbance**

- 5.2.4 The results of the risk assessment would indicate that the risk of there being a noise impact owing to entertainment noise from the nightclub is high. A high risk results in the most onerous criterion being applicable in the noise assessment.
- 5.2.5 Based on the results of the noise assessment, the criterion applicable to the nightclub are presented below and are applicable externally in proximity to nearby noise sensitive properties.

Location	Time	Calculation	Criterion
External	11pm to 7am	$L_{Aeq,5min} (EN) \text{ minus } L_{Aeq,5mins} (WEN) *$	- 5 dB

\* EN is defined as the noise level with entertainment noise at a typically high level. WEN is defined as the noise level in the absence of the entertainment noise, at a level which would be considered typical during within a similar time period

**Table 5.2 Example of noise assessment framework criterion**

- 5.2.6 The results of the external noise survey can be used to establish the entertainment noise level and the prevailing noise level at neighbouring properties in the absence of the entertainment noise. This has been done in a similar manner as for the assessment against the licensing condition presented in Section 4. The established levels for use in the assessment are presented in Table 5.3 below.

	$L_{Aeq,5mins}$ (EN)			$L_{Aeq,5mins}$ (WEN)
	Thursday night	Friday night	Saturday night	
North-East residence	51 dB	61 dB	61 dB	50 dB
Residences on The Parade	36 dB	46 dB	45 dB	50 dB
Proposed Premier Inn	66 dB	76 dB	76 dB	50 dB

**Table 5.3 Noise levels established for use in assessment**

5.2.7 The established noise levels can be combined according to the methodology. The results of this are presented in Table 5.4 below.

	Calculated result		
	Thursday night	Friday night	Saturday night
North-East residence	+ 1 dB	+ 11 dB	+ 11 dB
Residences on The Parade	- 14 dB	- 4 dB	- 5 dB
Proposed Premier Inn	+ 16 dB	+ 26 dB	+ 26 dB

**Table 5.4 Calculation results**

5.2.8 The calculation results can be combined according to the methodology, and compared to the criterion. The results of this are presented in Table 5.5 below.

	Comparison to criterion		
	Thursday night	Friday night	Saturday night
North-East residence	6 dB above	16 dB above	16 dB above
Residences on The Parade	9 dB below	1 dB above	0 dB above
Proposed Premier Inn	21 dB above	31 dB above	31 dB above

**Table 5.5 Comparison of calculated levels against criterion**

5.2.9 The results presented above would conclude that the entertainment noise from Fever and Boutique nightclub fail the criterion indicated within this alternative methodology.

5.2.10 Whilst this conclusion is indicative only, it compares well with the findings of the assessment presented in Section 4; that noise from the smoking area of the nightclub would be considered disturbing at neighbouring properties and the proposed Premier Inn hotel.



## 6 CONCLUSION

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- 6.1 An assessment of the noise emanating from the smoking area of Fever and Boutique nightclub indicates that the noise does not comply with the requirements of the licensing condition with respect to the control of noise. Furthermore, the conclusions of an alternative assessment methodology would confirm that the level of noise is likely to be disturbing at neighbouring properties.
- 6.2 It is worth noting that whilst there were less patrons using the smoking area on the Thursday night compared to the Friday and Saturday night, both assessments presented within this report conclude that there is a negative noise impact on all three nights.
- 6.3 The magnitude of excess noise, when compared to the various criteria, is such that in order to meaningfully reduce the noise impact would require significant works.
- 6.4 Preliminary calculations would suggest that the smoking area would need to be fully acoustically enclosed. In order to function as a smoking area, ventilation plant will need to be installed and acoustically attenuated. There may be other, non-acoustic, considerations that may either prohibit or complicate the installation of a full acoustic enclosure and ventilation plant.
- 6.5 An alternative to treating the smoking area would be to remove / relocate the smoking area from its current position. It is understood the smoking area used to be towards the front of the nightclub, on the main road, and away from the nearby residential properties and proposed new Premier Inn hotel. Initial estimations indicate that returning to the previous arrangement would result in a meaningful reduction to the noise impact on the nearby residential properties and proposed new Premier Inn hotel and so should be given further consideration.

## APPENDIX A – NOISE LEVEL DATA

A selection of the measured noise level data are presented in the tables in this appendix. The full set of data are available in electronic form on request.

All values are sound pressure levels in dB re:  $2 \times 10^{-5}$  Pa.















This appendix provides an explanation of some of the acoustics terms used in this report.

	The human ear does not sense all frequencies of sound equally. Our sensitivity is at a maximum at around 2 kHz and steadily decreases above and below. Below 20 Hz and above about 20 kHz we can't hear at all.
A-weighting $L_A$ or $L_{pA}$ , $L_{WA}$ ,	Within its operating limits a precision measurement microphone measures all frequencies the same so the output it produces does not reflect what we would actually hear. The A-weighting is an electronic filter that matches the response of a sound level meter to that of the human ear. When A-weighted the Sound Pressure Level $L_p$ becomes $L_{pA}$ (or $L_A$ ) and the Sound Power Level $L_W$ becomes $L_{WA}$ .
$L_p$	<i>The instantaneous sound pressure level (<math>L_p</math>)</i>
$L_{pA}$ (or $L_A$ )	<i>The A-weighted instantaneous sound pressure level (<math>L_{pA}</math> or <math>L_A</math>)</i>
	This is the root mean square size of the pressure fluctuations in the air. This level can fluctuate wildly even for seemingly steady sounds. To make sound level meters easier to read the values on the display are smoothed or damped out. This is effectively done by taking a rolling average of the previous 0.125 s (FAST time constant) or the previous 1 s (SLOW time constant).
$L_{AF}$ , $L_{AS}$	The letters F or S are added to the subscripts in the notation to indicate when the FAST or SLOW time constant has been used. These are often omitted but it is good practice to include them.
$L_{max}$	<i>The maximum instantaneous sound pressure level (<math>L_{max}</math>),</i>
$L_{Amax}$	<i>The A-weighted maximum instantaneous sound pressure level (<math>L_{Amax}</math>)</i>
$L_{AFmax}$	<i>The A-weighted maximum instantaneous sound pressure level with a FAST time constant (<math>L_{AFmax}</math>).</i>
$L_{min}$ , $L_{Fmin}$	The opposite of the $L_{max}$ is the <i>minimum instantaneous sound pressure level</i> or $L_{min}$ etc.  It is good practice to include the letter which identifies the time constant used as this can make a significant difference to the value.
$L_{N,T}$	<i>The percentage exceedence sound pressure level (<math>L_{N,T}</math>),</i>
$L_{AN,T}$ , $L_{AFN,T}$ $N$ = %age value, 0-100 $T$ = measurement time eg. $L_{A90}$ , $L_{A10}$ , $L_{AF90}$ , 5 min	<i>The A-weighted percentage exceedence sound pressure level (<math>L_{AN,T}</math>), the A-weighted percentage exceedence sound pressure level with a FAST time constant (<math>L_{AFN,T}</math>).</i>  This is the sound pressure level exceeded for $N\%$ of time period $T$ . eg. If an A-weighted level of $x$ dB is exceeded for a total of 6 minutes within one hour, the level will have been above $x$ dB for 10% of the measurement period. This is written as $L_{A10,1hr} = x$ dB.  $L_{A0}$ (the level exceeded for 0 % of the time) is equivalent to the $L_{Amax}$ and $L_{A100}$ (the level exceeded for 100 % of the time) is equivalent to the $L_{Amin}$ .  It is good practice to include the letter which identifies the time constant used as this can make a significant difference to the value.
$L_{eq,T}$	<i>The equivalent continuous sound pressure level over period <math>T</math> (<math>L_{eq,T}</math>),</i>
$L_{Aeq,T}$ $T$ = measurement time eg. $L_{Aeq,5min}$	<i>The A-weighted equivalent continuous sound pressure level over period <math>T</math> (<math>L_{Aeq,T}</math>).</i>  This is effectively the average sound pressure level over a given period. As the decibel is a logarithmic quantity the $L_{eq}$ is not a simple arithmetic mean value.  The $L_{eq}$ is calculated from the raw sound pressure data. It is not appropriate to include a reference to the FAST and SLOW time constants in the notation



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