Queensland Government

Guideline 51

Preparing an acoustic report

A Commissioner for Liquor and Gaming Guideline

Disclaimer

The Office of Liquor and Gaming Regulation is a Division of Department of Justice and Attorney-General within Queensland Government. The Office of Liquor and Gaming Regulation is a licensing body and regulator for the Liquor and Gaming industries. The Office of Liquor and Gaming Regulation does not regulate work health and safety legislation. The Commonwealth, states and territories have responsibility for regulating and enforcing work health and safety laws in their jurisdiction.

This Commissioner guideline is related to licensed premises and their capacity to produce noise pursuant to the *Liquor Act 1992* and *Liquor Regulation 2002* in a way that does not result in unreasonable noise as defined.

This guideline does not intend to provide specific information regarding work health and safety environments. We encourage all liquor licensees to seek their own independent professional advice regarding work health and safety environments.

Contact Information

Office of Liquor and Gaming Regulation | liquorcompliance@justice.qld.gov.au | www.business.qld.gov.au/liquor-gaming

Document Version Control

Version	Published Date	Author	Change Description
1.0	27/06/2019	OLGR Compliance Division	Original Document
2.0	7/01/2020	OLGR Compliance Division	Corrected Data recording and calculation tables 1,2,4,5 and 6 Editorial changes throughout the document Inserted Document Version Control Inserted Glossary
2.1	10/08/2020	OLGR Compliance Division	Corrected Data and recording calculation tables 2 and 5 and correlated content Section 13 and 14 Editorial changes throughout the document
2.2	3/11/2020	OLGR Compliance Division	Corrected Data and recording calculation table 2 and 5 Editorial changes throughout the document

Contents

1 Purpose

The purpose of this guideline[1] is to assist acoustic consultants and licensees to design and operate premises (venue) licensed under the *Liquor Act 1992* (the Act) that does not produce 'unreasonable noise' by setting minimum standards for the assessment and management of noise.

This guideline also outlines the attitude the Commissioner may adopt about:

- the requirements of a written assessment or report about the acoustic qualities of a premises (acoustic report)[2]
- the qualifications, training or experience required by persons (acoustic consultants) who provide acoustic reports.[3]

2 Unreasonable noise

'Unreasonable noise' is defined under section 4 of the Act and is in relation to licensed premises; it means noise that does any of the following:

- exceeds the limits (if any) prescribed by legislation
- contravenes a compliance order that applies to the premises
- contravenes a condition that applies to the licence or permit for the premises.

Section 40 of the Liquor Regulation 2002 prescribes limits that if exceeded constitutes unreasonable noise. These limits are as follows.

6am to 10pm

Between 6.00am and 10.00pm - the adjusted maximum sound pressure level L_{A10}, plus adjustments for tonal and impulse components, exceeding the background level L_{A90} by more than 10dB(A) (when measured at any affected premises).

10pm to 6am

Between 10.00pm and 6.00am - the sound pressure level L_{OCT10}, in a full octave band with centre frequencies from 63 Hz to 2000 Hz exceeding the background level L_{OCT90} by more than 8 dB in any octave band (when measured at any affected premises).

It is important to note that unreasonable noise can be created by any and all (cumulative) noise produced at a venue and is not limited to noise produced by entertainment or a singlesource.

Note: Unreasonable noise may be produced at a venue despite noise levels being below those specified in a condition of the licence or permit for the venue.

3 Affected premises

The Act does not differentiate between indoor and outdoor areas of affected premises. 'Premises' is defined in section 4 of the Act as:

- land
- a building or structure on or in land
- a vehicle, boat, aircraft, train or other means of transport.

[1] Section 42A of the *Liquor Act 1992* provides that the Commissioner for Liquor and Gaming (Commissioner) may make guidelines to inform persons about: the attitude the commissioner is likely to adopt on a particular matter; how the commissioner administers the Liquor Act; or matters that may help persons comply with their responsibilities, or lawfully and appropriately exercise powers, under the Liquor Act.
[2] Section 46A of the Liquor Act and sections 4(2)(d) and 4(3) of the Liquor Regulation 2002
[3] Section 4(4)(a) of the Liquor Regulation 2002

Affected premises includes both residential and commercial properties, including common areas and associated land, as well as noise-sensitive public land or marine environments.

Noise-sensitive public land may include areas designated for special purposes in local, state, or Commonwealth government defined public areas, such as botanical gardens, national parks and defined long-term mooring locations in major waterways.

4 Licence conditions

The Act[4] provides the Commissioner with the authority to impose conditions on a licence or permit relating to noise-abatement measures. Licensees and permittees are required, under the Act[5], to comply with all these conditions.

5 Obligation to preserve amenity

Licensees and permittees are required under the Act to take all reasonable steps to ensure the use of the venue does not adversely affect the amenity of the area in which the venue is located.[6] Because unreasonable noise is likely to adversely affect the amenity of the local area, licensees and permittees are obligated to take all reasonable steps to ensure that unreasonable noise is not produced at their venues.

6 Action available where unreasonable noise is produced

Where unreasonable noise is produced at a venue, an Office of Liquor and Gaming Regulation (OLGR) investigator may issue the licensee or permittee with an abatement notice[7] under the Act. The abatement notice will, at a minimum, require the licensee or permittee to reduce the noise at the venue to a level that is no longer unreasonable and maintain it.

If further unreasonable noise is produced at the venue or the abatement notice is breached, within the following 12-month period, the Commissioner may issue the licensee or permittee with a compliance order[8] under the Act. The compliance order may, amongst other things, require the licensee or permittee to cease all specified noise and provide the Commissioner with a new acoustic report that complies with this guideline.

Following consideration of the new acoustic report, the Commissioner may amend the compliance order to require the licensee or permittee to improve the acoustics of the venue in order to stop unreasonable noise.

Where unreasonable noise continues to be produced, the Commissioner may amend the authority of the licence or permit.

Because unreasonable noise may be produced despite noise levels being below those specified in a condition of the licence or permit, compliance with licence conditions does not prevent the above action from being taken.

7 Exemptions

Licensees who operate a venue within a special entertainment precinct (SEP) established by a local government under the *Local Government Act 2009*, who have been issued a licence,

[4] Sections 107C and 128C of the *Liquor Act 1992*
[5] Section 226 of the Liquor Act
[6] Section 142ZZB of the Liquor Act
[7] Section 187 of the Liquor Act
[8] Sections 46 and 46A of the Liquor Act

permit or other authority for the venue under a local law, cannot be issued an abatement notice or compliance order in relation to unreasonable noise caused by amplified music.

Further, conditions relating to amplified music applied to a liquor licence or permit for a venue subject to the above do not apply.[9]

However, noise conditions relating to anything other than amplified music remain enforceable under the Act. Also, unreasonable noise from any other source (e.g. patrons) may result in OLGR taking the actions outlined in section 6.

8 Licensed premises design

When designing a venue, licensees, permittees and applicants should consider noise mitigation/attenuation measures that can be incorporated in order to prevent unreasonable noise emitting from the venue. Retrofitting such measures to a venue can be far more costly than including these during initial construction.

Advice should be sought from a qualified and experienced acoustic consultant regarding noise effects and noise attenuation measures before any construction work (including renovation) is undertaken.

9 Risk assessed management plan (RAMP)—noise management and mitigation

Where a licensee, permittee or applicant is required to provide a RAMP[10] for a venue to the Commissioner, the following must be explained:

- noise mitigation/attenuation measures incorporated into the construction of the venue
- the practices and procedures that will be implemented at the venue to ensure that unreasonable noise is not produced.

10 Suitably qualified person

The Commissioner may require a licensee, permittee or applicant to provide an acoustic report about a venue (or proposed venue) written by a qualified, trained or experienced person. The Commissioner considers a qualified, trained or experienced person to be a person who has any of the following:

- an appropriate tertiary or post-graduate qualification in engineering or science with a major in acoustics
- successfully completed at least 2 modules of a professional education course in acoustics as supported by the Association of Australasian Acoustical Consultants or equivalent to a minimum of 5 years professional acoustical experience verified by a member of the Australian Acoustical Society.

11 Noise assessment

In order for a qualified, trained or experienced person to write an acoustic report about a venue, they must first undertake an assessment of noise from the venue. This assessment has two main objectives:

[9] Section 112B of the *Liquor Act 1992*

[10] Licensees or potential licensees are notified by the OLGR on receipt of an application if they are required to provide a RAMP for the venue.

- determine unreasonable noise limits at potentially affected premises and at appropriate close reference point locations that prevent unreasonable noise, having regard to prevailing meteorological conditions (if appropriate) and cumulative noise emissions from all licensed indoor and outdoor areas of the venue
- select close external monitoring locations nearby to the licensed premises and set noise limits at these locations that will prevent unreasonable noise emissions from the venue.

(Where the prescribed procedures of this guideline are deemed impractical for a specific situation, e.g. high-rise buildings, the acoustic consultant may use an alternative procedure, as long as a clear and detailed justification, based on their professional expertise, is provided.)

In some instances, setting limits at close external monitoring locations is not appropriate due to accessibility or safety issues, or the likely effect on measurement data by significant noise from other sources (e.g. entertainment precincts, shopping malls). Consequently, the maximum operating noise levels are to be set at a nominated test location in each licensed indoor and outdoor area of the venue so unreasonable noise is not caused at the potentially affected premises by the cumulative operations of the licensed areas.

A licensee may, for their own purposes, have limits set at indoor and outdoor licensed areas of the venue in addition to levels being set at close external monitoring locations. This is an option that a licensee may use for ease of their own testing to manage compliance throughout their trading period.

12 Noise assessment instrumentation requirements

The minimum required instrument specifications for conducting noise measurements in accordance with this guideline are:

- sound level meter—statistical noise levels and octave spectra, Type 1—2-yearly laboratory calibration
- acoustic calibrator—Type 1—yearly laboratory calibration
- windscreens— windscreen suitable for wind speeds less than 5 ms^{-1}
- anemometer—2-yearly laboratory check or calibration.

Current calibration certificates from a suitably authorised laboratory must be held for all sound and meteorological instrumentation with maximum calibration intervals adhered to.

13 Noise assessment methodology—pre-10pm

(1) Identify <u>all</u> potentially affected premises (residential, community or commercial) around the venue and select the representative premises and reference point test locations.

- Potentially affected premises may be existing premises, or groups of premises, or future premises that have received development approval, located in different directions around the venue.
- When identifying potentially affected premises and monitoring locations, consideration must be given to all premises types, as well as the entire premises of each as defined under the Act (e.g. common areas, outdoor areas).
- Consideration must also be given to separation distances, elevation of affected premises relative to venues, typical prevailing meteorological conditions, intervening topographical contours, natural or man-made barriers, and other local features that are significant for noise propagation or mitigation. It is noted that the affected premises located nearest to the venue may not be the worst affected premises.

  For example, premises that are located several hundred metres from the venue at a higher elevation may be as affected, or even more affected, by noise from the venue than premises located in the same direction but close to the venue and at a lower elevation.

Similarly, prevailing wind direction should be taken into consideration and recorded when noise may be propagated to a premises at further distances than would not ordinarily be considered to be potentially affected.

The person undertaking the noise assessment should use their professional discretion in selecting the worst case affected premises and the worst-case location within those premises, considering meteorological conditions, shielding, building envelope construction of the premises, reverberation etc.

The acoustic consultant must demonstrate their professional judgement with regards to assessment location selection in their report, either through appropriate logic or data prediction. In many cases, there will be a need to select more than one noise assessment location. This may be because of the local topography or because of multiple areas used by patrons within the licensed premises.

- The Commissioner's delegate may request that another assessment is conducted at alternative premises, if an affected premises used in the acoustic assessment is not considered representative of the noise levels experienced at the worst affected premises.
- A reference point location is to be selected for each of the locations with the representative affected premises. These locations must be in a public place that are easily and safely accessible at all times.

(2) Background noise level monitoring and determination of noise limits to prevent unreasonable noise

(a) Affected premises monitoring location

- Background noise levels are to be monitored at the selected representative affected premises for the purpose of identifying the background sound level. The noise limit to prevent unreasonable noise will be determined based on these readings.
- All reasonable effort should be made to gain access to the representative premises to undertake the testing. Where access to the selected representative premises cannot be gained, consideration must be given to using an alternative, appropriate potentially affected premises. Where access cannot be gained to an appropriate premises, the selected reference point external to the representative premises may be used instead.
- If using the external reference point testing location, the test must be undertaken in a way that replicates the environment of the representative premises. For example, where the representative premises is at a higher elevation, the sound receptor, where practical, should be elevated to match the elevation of the representative premises.

(b) Weather

- Background noise measurement should be taken in accordance with the Department of Environment and Heritage Noise Measurement Manual 2013 (NMM 2013) or subsequent updated version of this manual. In most instances, noise measurement is not to be taken or considered valid in wind speeds exceeding 5m/s. If testing is necessary due to time limitations of the event, in a wind-affected position, the manufacturer's specifications for the microphone and wind shield are to be adhered to. The acoustic consultant should explain clearly how the effect of the higher wind speed has been compensated for.

  Exceptions to the above may occur at premises that are regularly affected by wind and these environmental factors are to be carefully considered by the acoustic consultant when establishing noise levels and thorough justification.
- Background measurements must not be undertaken in the rain, or when there is rain-related noise—for example, water running in gutters or tyre noise on a wet road.
- Before and after background noise measurements, wind speed and direction (degrees from N clockwise, e.g. NE is 45°) is to be measured at the test location (outside) using an anemometer at a height of 1.5m.

- The windscreen specification is to be checked to ensure that it is suitable for the wind speeds encountered. If a standard windscreen is not suitable, then it must be changed to a suitable type for higher wind speeds (non-standard windscreen).
- Where a non-standard windscreen is used, the windscreen attenuation will be added to the measured octave spectral frequency noise levels (Row 1-1, Table 1) or these levels with insects/frogs removed (Row 1-2, Table 1), whichever is relevant, to determine the background noise level. Record the calculated levels in Row 1-3 of Table 1.

(c) Timing

- Noise levels may be assessed and set for different time periods prior to 10pm (e.g. 10am to 2pm, 2pm to 6pm) or a single level may be set for the entire period between 10am and 10pm.

  Having different noise levels for different time periods prior to 10pm will add complexity to a licensee's compliance obligations and as such is not recommended in most situations. However, where a licensee decides to adopt this approach, they may need to implement additional controls to ensure compliance with noise limits.
- Background noise levels must be monitored on a day and at a time that is considered to have the lowest background noise level within each selected time period, with the objective of identifying the lowest background level for the time and location.
- The time with the quietest background levels is generally considered to be between 9pm and 10pm on a Monday or Tuesday evening; however, there may be other times depending on where the venue and potentially affected premises are located.
- Loggers may be used only to identify the lowest background noise level within a time period, not to obtain noise level data over a long period for the purpose of averaging.

(d) Background sound level measurement—L_{A90}

- The background noise level measurement duration should be 10 minutes and consistent with the measurement procedures provided in the NMM 2013 or updated version of this manual. The acoustic consultant must clearly note in the final report if there was any short- or long-term extraneous noise, whether it was removed, and justify reasons for the actions in this respect. Where a 10-minute measurement time is deemed inappropriate for the specific situation, the acoustic consultant must clearly justify why an alternative time or method was used. This is to demonstrate that the background noise measurement is a reliable indicator of the background noise environment and appropriate for assessment purposes under this guideline.
- Background noise levels must be measured as L_{A90} overall A-weighted levels and L_{Z90} octave frequency spectral levels (dB(Z)), fast response.
- During short-duration, extraneous noise events, the sound level meter may be paused to exclude the extraneous noise from the measurement. Where the meter is not paused, the extraneous noise must be removed from the measurement data via post-processing to obtain an accurate background sound level.

  Note: The acoustic report must detail all short-duration extraneous noise events experienced during the measurement and how these were removed/excluded from the measurement data (e.g. meter paused or post-processed).
- During background noise monitoring, no noise is permitted from the venue or from areas that are not licensed but are used by the venue (e.g. car parks, utility areas, storage areas). This includes noise from staff, air-conditioners, generators, refrigerators and any other mechanical or plant equipment.
- Background noise levels should not include noise emanating from other nearby venues. If this is not possible, choose an equivalent, nearby location for monitoring that has a similar background noise environment but does not include noise from other venues. The acoustic report must detail the reasons for the choice of the alternative monitoring location in this situation.

- Record the lowest measured background noise levels, minus all extraneous noise, for each representative premises in Row 1-1 of Table 1 in the data recording and calculation tables (section 13(4)) below.

(e) Significant quasi-continuous extraneous noise—insects and frogs

- Quasi-continuous extraneous noise from insects or frogs must be removed from background measurement data via post-processing.
- Insects typically have characteristic dominant one-third octave frequencies in single or multiple bands in the range of 2.5 kHz to 10 kHz. For frogs, the dominant frequencies are typically the 1.6 kHz and 2 kHz one-third octave bands.
- When noise from insects and frogs is contributing to the background noise at the time of the measurement, this extraneous noise must be removed by post-processing. To do this, measure the noise in one-third octave bands, identify the main frequency band(s) affected by the insect or frog noise, and replace the measured level in these band(s) with the linear average of the noise level in the bands either side of the band that is dominated by the insect or frog noise. Then convert the resultant one-third octave band data to octave band data.
- If applicable, record in Row 1-2 of Table 1 the post-processed background noise levels with insects/frogs removed for each representative premises.

(f) Conversion of post-processed L_{Z90} spectral levels to L_{A90} levels and calculation of overall L_{A90} levels

- If no post-processing has been undertaken, use Row 1-1; otherwise, where post-processing has been undertaken to remove quasi-continuous extraneous noise or to account for the attenuation of a non-standard windscreen, use Row 1-2 or 1-3 of Table 1. Each L_{Z90} spectral level is to be converted to a L_{A90} level. To do this, first add the A-weighting conversion figure (Row 1-4 of Table 1) to the corresponding L_{Z90} level. Record the results in Row 1-5 of Table 1.
- Calculate the overall L_{A90} level using the following formula, where L_1 to L_n is the converted levels recorded in Row 1-5 of Table 1. Record the calculated overall level at the end of Row 1-5.

$$L_\Sigma = 10 \cdot \log_{10}\left(10^{\frac{L_1}{10}} + 10^{\frac{L_2}{10}} + \cdots + 10^{\frac{L_n}{10}}\right) \text{ dB}$$

(g) Determine the pre-10pm intrusive noise limits at each of the representative affected premises

- To determine the noise limit at each of the representative premises that if exceeded would constitute unreasonable noise, add 10dB(A) to the overall background noise level (L_{A90}) for the premises.
- Record the calculated intrusive noise limit for each representative premises in Row 1-6 of Table 1.

(3) Acoustic assessment of cumulative entertainment and patron noise emissions from the venue (intrusive noise)

(a) Identification of all potential entertainment and patron noise sources

- Identify all areas of the venue where the licensee intends for entertainment to be provided (indoors and outdoors).
- Identify all areas of the venue where patrons will have access.

(b) Selection of close external noise monitoring locations

- Close external noise monitoring locations are to be selected within 25m of the boundary of the venue, in the general direction of each of the representative affected premises. In most instances, the number of close external monitoring locations required will be relative to the number of representative affected premises.
- Only locations that are publicly and safely accessible at all times may be selected.

- Where the use of close external monitoring locations is not appropriate due to accessibility or safety issues, or the likely effect on measurement data by significant noise from sources other than the venue (e.g. entertainment precincts, shopping malls), select instead noise monitoring locations within each noise producing area of the venue (see section 13(3)(c) below.)

(c) Selection of specific licensed premises area within the licensed

Select a monitoring location within each of the identified entertainment-producing areas to be used to determine the maximum operating noise level for the area (3m from the source/speaker may be suitable but not obligatory).

(d) Timing for assessment of intrusive amplified sound

- The acoustic assessment of intrusive amplified sound from the venue should be undertaken on a day and at a time where noise from other sources will not affect measurement data.
- The assessment should also be undertaken on a day and at a time that is likely to cause the least disturbance to the local community.

(e) Sound system setup and test

- Where entertainment will be provided in an area via an in-house sound system, this system should be used to produce the noise required for the acoustic assessment.
- Where an in-house sound system is not installed or will not be used to provide entertainment in a particular area (e.g. live music not amplified through an in-house system or a sound system supplied by the entertainer will be used), a temporary sound system must be set up and used in each area to produce the noise required for the acoustic assessment.
- The sound system should, as a minimum, be able to produce noise that is audible and measurable at the representative affected premises.
- To assess the intrusion from amplified sound, a suitable music recording is to be played through the sound system in each entertainment area, one at a time and as loud as practical. Make an assessment as to whether the music (intrusive noise) is clearly audible and measurable above background noise levels at all representative affected premises. Once confirmed, note the sound system volume setting or measure the sound level at the selected location within the specific licensed premises area.

  Note: Where the noise from the sound systems is not clearly audible and cannot be measured at a selected representative affected premises, despite the sound systems producing noise at a sufficiently loud volume, alternative representative affected premises must be assessed/selected. If alternative, relevant potentially affected premises are not available, it may not be necessary to undertake an acoustic assessment of intrusive noise at the location. Should this be the case, the acoustic report must detail the action taken in making this determination.

(f) Weather

- The requirements outlined in section 13(2)(b) apply to noise measurements undertaken during the acoustic assessment of noise from the premises.
- Only noise measurements taken under similar meteorological conditions to those experienced during background noise level monitoring are considered to be valid.

(g) Sound system noise emission (intrusive noise) measurement

- Take measurements of the cumulative (all) noise emitted from the venue.
- The sound system volume in each area is to be set to the appropriate level identified during the sound system test.
- The same music recording is to be played on a loop (i.e. play continuously throughout the duration of the test) through the sound system in each area concurrently (not required to be synchronized).

- If all areas of the licensees premises are not tested cumulatively, the acoustic consultant must explain why this did not occur and how the cumulative noise has been taken into consideration in the assessment.
- The music selected should contain a sufficient amount of bass and be reflective of the typical type of music played, or proposed to be played, at the venue.
- The minimum duration for an intrusive noise level measurement is 3 minutes, excluding all short duration extraneous noise.
- The maximum duration for an intrusive noise level measurement is 5 minutes, excluding all short duration extraneous noise.
- Measure the L_{A10} overall noise levels (dB(A)) and L_{Z10} octave spectral levels (dB(Z)), fast response, at each of the representative affected premises, the relative reference point locations and specific licensed premises location, whilst maintaining the same source volumes in each area of the venue.
- Measure the L_{A10} overall level (dB(A)) and L_{Z10} octave frequency spectral levels (dB(Z)), fast response, at each of the close external monitoring locations, whilst maintaining the same source volumes in each area of the venue.
- Record the measurement data captured at each related representative premises, reference point location, close external monitoring location and specific licensed premises location in rows 2-1, 2-6, 2-11 and 2-16 of Table 2.

  Note: Table 2 should be completed for each representative affected premises relative to each close external monitoring location. For example, where there are two representative affected premises and one close external monitoring location that relates to both, two tables must be completed.

(h) Significant quasi-continuous extraneous noise—insects, frogs and wind

- If insects/frogs are a significant contributor to the measured L_{10} overall level and one-third octave spectra, remove the insect/frog contribution as per section 13(2)(e) above.
- Record the post-processed measurement data in rows 2-2, 2-7 and 2-12 of Table 2.
- Where a non-standard windscreen is used, the windscreen attenuation will be added to the measured octave spectral frequency noise levels (Row 2-1, 2-6 and 2-11 of Table 1) or these levels with insects/frogs removed (Row 2-2, 2-7 and 2-12 of Table 2), which is relevant, to determine the background noise level. Record the calculated levels in Row 2-3, 2-8 and 2-13 of Table 2)

(i) Conversion of L_{Z10} spectral levels to L_{A10} levels and calculation of overall L_{A10} levels

- Calculate the overall L_{A10} using the same process as described in Section 13(2)(f).

(j) Normalisation of noise levels

- To ensure that noise levels can be determined that will prevent unreasonable noise from amplified music, the measured intrusive noise levels must be normalised against a predetermined music moderator spectrum. The reference source spectral and overall levels for this normalisation are provided in Row 2-17 of Table 2.
- Calculate the required normalised adjustments by subtracting the specific licensed premises noise levels (Row 2-16) from the music moderator spectrum for normalisation (Row 2-17). Record the results in Row 2-18 of Table 2.
- Calculate the normalised intrusive noise levels for the representative affected premises by adding the calculated normalised adjustment values (Row 2-18 of Table 2) to the finalised intrusive noise levels for the representative affected premises (Row 2-1, 2-2 or 2-3—whichever is relevant). Record the results in Row 2-19 of Table 2. Convert to dBA using the conversion figures in Row 2-20 and determine the overall L_{A10} using the same procedure as in section 13(2)(f).

(k) Noise character adjustment

- Noise emissions from venues may have characteristics that increase the degree of adverse effects when the noise is audible at affected premises. Such adverse characteristics may include tonality, impulsiveness, varying rhythmic levels (modulation), speech characteristics (audible lyrics) and dominant bass contributions.
- If these characteristics are present an assessment must be undertaken to establish if any penalty is required to be added to the intrusive noise level (L_{A10}) for the representative affected premises, in accordance with the procedure of Australia Standard 'ASS1055:2018 Acoustics—Description and Measurement of Environmental Noise'.

  As an alternative simplified assessment method, a penalty of +5dB should be added to the intrusive noise level (L_{A10}) if the difference between the L_{C10} and the L_{A10} for the intrusive noise is greater than 15dB. When the sound spectrum has high levels in the low frequencies, the L_{c10} will be higher than the L_{A10}. The L_{C10} can be obtained directly from the measurements or determined from the octave band data by applying the C weighting.

  Note: Although unweighted (dB(Z)) and C-weighted (dB(C)) values are not identical, they are similar enough to use either for this simple method for noise character adjustment.
- The adjusted, overall normalised intrusive level for the representative affected premises is to be recorded in Row 2-23 of Table 2.

(l) Calculation of maximum noise levels from amplified sound

- Insert the calculated overall unreasonable noise limit for the affected premises (Table 1) in Row 2-24 of Table 2.
- Calculate the difference between the overall unreasonable noise limit and the adjusted normalised intrusive noise level for the representative affected premises. This is calculated in Table 2, by subtracting the value in Row 2-24 from the value in Row 2-23 and recording the result in Row 2-25.
- Calculate the maximum noise level at the reference point location (LA10) in Table 2 by subtracting from the overall maximum noise level in the specific licensed premises (Row 2-28), the level difference between the measured overall sound level LA10 at the specific licensed premises and the reference point location (i.e. Row 2-16 minus Row 2-10). Record the result in Row 2-26.
- Calculate the maximum noise level at the close monitoring location in Table 2 by subtracting from the overall maximum noise level (LA10) in the specific licensed premises (Row 2-28), the level difference between the measured overall sound level at the specific licensed premises and the measured overall sound level at the close external location (i.e. Row 2-16 minus Row 2-15). Record the result in Row 2-27.
- Calculate the overall maximum noise level (LA10) at the specific licensed premises area by subtracting the difference between intrusive/unreasonable noise limit and adjusted normalised intrusive level at affected premises (Row 2-25) from the overall reference spectrum level area LA10 (Row 2-17). Record the result in Row 2-28.

Repeat the process detailed in section 13(3) above for each representative affected premises and the related reference point and close external monitoring locations.

Where there are multiple representative affected premises related to a single close external monitoring location, use Table 3 in section 13(4) below to calculate the unreasonable noise limit for each close external monitoring location.

(m) Assessment of patron and other non-amplified sound

In addition to amplified sound, there are other types of noise that can emanate from a venue, such as patron noise (especially from designated outdoor smoking areas (DOSA)) and noise from mechanical plant. The acoustic consultant should measure the noise if appropriate or use their professional experience and discretion to assess if the noise from these sources will exceed the unreasonable noise limits at the representative affected locations. A clear explanation of how this assessment was made must be included in the report.

(4) Data recording and calculation tables

Table 1: Background L_{A90} noise level record and calculation sheet for amplified music and patron noise assessment—pre-10pm

Measurement location	Instruction		Start time h:min:sec	Duration mins	Wind speed ms^{-1}	Wind direction	Frequencies - Hz – unweighted, L_{Z90} dB(Z)						Overall L_{A90} dB(A)	Overall intrusive noise limit L_{A10} dB(A)
							63	125	250	500	1000	2000		
Representative premises 1	Row 1-1	Measurement info & data												
	1-2	Minus insects/frogs (if applicable)												
	1-3	Plus non-standard windscreen attenuation (if applicable)												
	1-4	dB(Z) to dB(A) conversion figures					-26	-16	-9	-3	0	+1		
	1-5	Calculated L_{A90} - dB(A) - $L_\Sigma = 10 \cdot \log_{10}\left(10^{\frac{L_1}{10}} + 10^{\frac{L_2}{10}} + \cdots + 10^{\frac{L_n}{10}}\right)$ dB												
	1-6	***Overall intrusive noise limit L_{A10} (L_{A90} + 10dBA))***											***+10dB(A)***	
Representative premises 2	Row 1-1	Measurement info & data												
	1-2	Minus insects/frogs (if applicable)												
	1-3	Plus non-standard windscreen attenuation (if applicable)												
	1-4	dB(Z) to dB(A) conversion figures					-26	-16	-9	-3	0	+1		
	1-5	Calculated L_{A90} - dB(A) - (if applicable) Note: Overall A – weighted calculation: $L_\Sigma = 10 \cdot \log_{10}\left(10^{\frac{L_1}{10}} + 10^{\frac{L_2}{10}} + \cdots + 10^{\frac{L_n}{10}}\right)$ dB												
	1-6	***Overall intrusive noise limit L_{A10} (L_{A90} + 10dBA)***											***+10dB(A)***	

Note: The above table can be extended/duplicated to account for additional representative premises if required.

Table 2: Intrusive noise measurement data, normalisation of data and calculation of maximum noise limits to prevent unreasonable noise—pre-10pm

Measurement location			Start Time h:m:s	Duration mins	Wind speed ms^{-1}	Wind direction	Octave band noise levels						LA10	LZ10
							63	125	250	500	1000	2000		
Affected premises intrusive L_{A10} levels—Location no. and description:														
Affected premises:	2.01	Octave band data, dBZ												
	2.02	Minus Insects/frogs (if applicable) dBZ												
	2.03	Plus non-standard windscreen attenuation (if applicable) dB												
	2.04	dB(Z) to dB(A) conversion figures					**-26**	**-16**	**-9**	**-3**	**0**	**1**		
	2.05	Octave band noise levels, dBA and overall LA10												
Reference point L_{A10} levels—Location no. and description:														
Reference Point location:	2.06	Octave band data dBZ												
	2.07	Minus insects/frogs (if applicable)												
	2.08	Plus non-standard windscreen attenuation (if applicable)												
	2.09	dB(Z) to dB(A) conversion figures					**-26**	**-16**	**-9**	**-3**	**0**	**1**		
	2.10	Octave band noise levels, dBA and overall LA10												
Close external monitoring location L_{A10} levels—Location no. and description:														
Close External Location:	2.11	Octave band data dBZ												
	2.12	Minus insects/frogs (if applicable)												
	2.13	Plus non-standard windscreen attenuation (if applicable)												
	2.14	dB(Z) to dB(A) conversion figures					**-26**	**-16**	**-9**	**-3**	**0**	**1**		
	2.15	Octave band noise levels, dBA and overall LA10												
Specific licensed premises location L_{A10} levels—Location no. and description:														
Specific licensed premises:	2.16	Octave band data dBZ												
Normalisation moderator														
	2.17	Reference source spectral level					**105**	**109**	**100**	**99**	**96**	**95**	**102**	**111**
Specific licensed premises	2.18	Normalised adjustment (reference – measured levels, Row 2-17 minus Row 2-16)												

Affected premises	2.19	Normalised intrusive noise levels, L_{Z10}, (Row 2-18 plus Row 2-1, 2-2 or 2-3, whichever is applicable)								
	2.20	dB(Z) to dB(A) conversion figures	**-26**	**-16**	**-9**	**-3**	**0**	**1**		
	2.21	Octave band noise levels, dBA and overall LA10								
Noise character adjustment +5dB										
Noise character	2.22	From 2-21: Overall L_{Z10} dB(Z) – Overall L_{A10} dB(A)								
	2.23	Adjusted intrusive level due to noise character (If applicable): • If Row 2-22 is equal to or greater than 15 dB, then value is Row 2-21 overall LA10 figure plus 5dB(A). • If Row 2-22 is less than 15 dB, then value is Row 2-21 overall LA10 figure.								
Maximum noise level calculation										
Overall intrusive/unreasonable noise limit at affected premises	2.24	From Table 1								
Difference between intrusive/unreasonable noise limit & adjusted normalised intrusive level at affected premises	2.25	Overall $_{LA10}$ Row 2-23 minus Row 2-24								
Maximum noise level at reference point location	2.26	Overall L_{A10} value in Row 2-28 minus overall value (Row 2-16 minus Row 2-10)								
Maximum noise level at close external monitoring location	2.27	Overall L_{A10} value in Row 2.28 minus (Row 2.16 - Row 2.15)								
Maximum noise level—*specific licensed premises area*	2.28	Overall L_{A10} value in Row 2-17 minus Row 2-25								

Table 3: Calculation of final unreasonable noise limits for close external monitoring locations

Close external monitoring location (CEML)	**Maximum noise limit at CEML Re: representative premises**	**Maximum noise limit at CEML Re: representative premises**	**Maximum noise limit at CEML Re: representative premises**	**Final maximum noise limit at CEML** *(Final max. noise limit is to be the lowest of the levels recorded for the CEML)*
CEML number & description:	*Premises # / address:*	*Premises # / address:*	*Premises # / address:*	***Noise limit dB(A):***
	Noise limit dB(A):	*Noise limit dB(A):*	*Noise limit dB(A):*	
CEML number & description:	*Premises # / address:*	*Premises # / address:*	*Premises # / address:*	***Noise limit dB(A):***
	Noise limit dB(A):	*Noise limit dB(A):*	*Noise limit dB(A):*	
CEML number & description:	*Premises # / address:*	*Premises # / address:*	*Premises # / address:*	***Noise limit dB(A):***
	Noise limit dB(A):	*Noise limit dB(A):*	*Noise limit dB(A):*	
CEML number & description:	*Premises # / address:*	*Premises # / address:*	*Premises # / address:*	***Noise limit dB(A):***
	Noise limit dB(A):	*Noise limit dB(A):*	*Noise limit dB(A):*	

14 Noise assessment methodology—post-10pm

(1) Measurement locations

The representative premises, reference point and close external measurement and licensed area locations used for the pre-10pm noise assessment are to be used for the post-10pm noise assessment.

(2) Background noise level monitoring and determination of noise limits to prevent unreasonable noise

(a) Weather

See section 13(2)(b) above.

(b) Timing

- Noise limits may only be set for the entire period between 10pm and 6am.
- Background noise levels must be monitored on a day and at a time that is considered to have the lowest background noise level, with the objective of identifying the lowest background level for the location. This is generally considered to be between 2am and 3am on a Tuesday or Wednesday morning; however, it may be at other times depending on the environment in which the licensed premises and potentially affected premises are located.
- Loggers may be used only to identify the lowest background noise level, not to obtain noise level data over a long period for the purpose of averaging.

(c) Background sound level measurement—L_{Z90}

Use the same procedure as described in section 13(2)(d).

(d) Significant quasi-continuous extraneous noise – insects and frogs

It is not expected that frogs or insects will affect the noise assessment after 10pm. However, if the acoustic consultant considers that the noise of these sources is significant and should be reduced for the background and intrusive noise assessment, the methods outlined section 13(2)(e) may be used to minimise the effect of these extraneous sources.

(e) Determine the post-10pm unreasonable noise limits at each of the affected premises

- To determine the noise limit at each of the representative affected premises that if exceeded would constitute unreasonable noise, add 8dB to each L_{Z90} octave band value for the identified lowest overall background noise for the representative premises.
- Record the calculated unreasonable noise limits for each representative affected premises in Row 4-5 of Table 4.

(3) Acoustic assessment of cumulative entertainment and patron noise emissions from the venue

(a) Identification of all potential entertainment and patron noise sources

- Identify all areas of the venue where the licensee intends for entertainment to be provided (indoors and outdoors).
- Identify all areas of the venue where patrons will have access.

(b) Timing for assessment of intrusive amplified sound

- The acoustic assessment of noise from the licensed premises post-10pm may be undertaken consecutively with the pre-10pm acoustic assessment.
- See section 13(3)(d) for requirements regarding timing.

(c) Sound system setup and test

Same requirements as per section 13(3)(e)

(d) Weather

See sections 13(2)(b) and 13(3)(f) above.

(e) Sound system noise emission (intrusive noise) measurement

- See section 13(3)(g) excluding the final point that is replaced by the dot point below.
- Record the measurement data captured at each related representative premises, reference point location and close external monitoring location in the appropriate rows in Table 5 in section 14(4) below.

  Note: Table 5 should be completed for each representative premises relative to each close external monitoring location. For example, where there are two representative premises and one close external monitoring location that relates to both, two tables must be completed.

(f) Significant quasi-continuous extraneous noise—insects and frogs

If the effect of insects/frogs were removed in the background noise spectral levels, they should also be removed from the intrusive levels using the method described in Section 13(2)(e).

(g) Normalisation of noise levels

- To ensure that noise levels can be determined that will prevent unreasonable noise from all sound types, the measured intrusive noise levels must be normalised against a predetermined music moderator spectrum. The reference source spectral and overall levels for normalisation are provided in Row 5-14 of Table 5.
- Calculate the required normalised adjustments by subtracting the specific licensed premises area noise levels (Row 5-13) from the source reference levels for normalisation (Row 5-14). Record the results in Row 5-15 of Table 5.
- Calculate the normalised intrusive noise levels for the representative affected premises by adding the calculated normalised adjustment values (Row 5-15) to the finalised intrusive noise levels for the representative affected premises (Row 5-1, 5-2 or 5-3 (whichever is relevant). Record the results in row 5-16 of Table 5.

(h) Calculation of maximum noise levels

- Record the calculated spectral unreasonable intrusive noise limits for the representative affected premises from Table 4 in Row 5-17 of Table 5.
- Calculate the difference between the spectral unreasonable intrusive noise limits and the normalised spectral intrusive noise levels for the representative affected premises in Table 5, by subtracting the figures recorded in Row 5-17 from the values recorded in Row 5-16. Record the results in Row 5-18 and highlight the greatest difference.
- Calculate the unreasonable noise limits for the reference point location in Table 5 by subtracting from the overall value in Row 5.21, the difference between the overall value in the specific licensed premised and the overall value at the reference point location (Row 5.13-Row 5-08). Record the result in Row 5-19.
- Calculate the unreasonable noise limits for the close external monitoring location in Table 5 by subtracting from the overall value in Row 5.21, the difference between the overall value in the specific licensed premised and the overall value at the close monitoring point noise level (dB(Z)) (Row 5.13 - Row 5-12). Record the result in Row 5-20.
- Calculate the unreasonable noise limits, Overall dB(Z), for the specific licensed premises location in Table 5 by subtracting the largest value in Row 5-18 (greatest difference) from the overall reference spectrum level area (dB(Z)) (Row 5.14). Record the result in Row 5-21.

- As the maximum sound level is to be set in dB(C), duplicate the final dB(Z) maximum levels for the reference point location and the close monitoring location / internal area in the dB(C) column of Table 5.

  Note: Although unweighted (dB(Z)) and C-weighted (dB(C)) values are not identical, they are similar enough to allow licensees to monitor compliance with maximum noise levels using simple and inexpensive sound level meters.

Repeat the process detailed in section 14(3)(h) for each representative affected premises and the related reference point and close external monitoring locations.

Where there are multiple representative affected premises related to a single close external monitoring location, use Table 6 in section 14(4) below to calculate the unreasonable noise limit for each close external monitoring location.

(i) Assessment of patron and other non-amplified sound

In addition to amplified sound, there are other types of noise that can emanate from a venue, such as patron noise (especially from designated outdoor smoking areas (DOSA)) and noise from mechanical plant. The acoustic consultant should measure the noise if appropriate or use their professional experience and discretion to assess if the noise from these sources will exceed the unreasonable noise limits at the representative affected locations. A clear explanation of how this assessment was made must be included in the report.

(4) Data recording and calculation tables

Table 4: Background L_{Z90} noise level record sheet for amplified music and patron noise assessment—post-10pm

Measurement location	Row #	Instruction	Start time h:min:sec	Duration mins	Wind speed ms^{-1}	Wind direction	Frequencies - Hz – Unweighted, L_{Z90} dB(Z)						Overall L_{Z90} dB(Z)
							63	125	250	500	1000	2000	
Representative premises 1	4-1	Measurement info & data											
	4-2	Minus insects/frogs (if applicable)											
	4-3	Plus non-standard windscreen attenuation (if applicable)											
	4-4	Calculated Overall Unweighted Level (if applicable): $L_\Sigma = 10 \cdot \log_{10}\left(10^{\frac{L_1}{10}} + 10^{\frac{L_2}{10}} + \cdots + 10^{\frac{L_n}{10}}\right)$ dB											
	4-5	***Intrusive noise limit L_{Z10}: (L_{Z90} + 8dB) (Row 4-1 or 4-4 (whichever is relevant) plus 8dB)***											
Representative premises 2	4-1	Measurement info & data											
	4-2	Minus insects/frogs (if applicable)											
	4-3	Plus non-standard windscreen attenuation (if applicable)					-	-	-	-	-	-	
	4-4	Calculated overall unweighted level (if applicable): $L_\Sigma = 10 \cdot \log_{10}\left(10^{\frac{L_1}{10}} + 10^{\frac{L_2}{10}} + \cdots + 10^{\frac{L_n}{10}}\right)$ dB											
	4-5	***Intrusive noise limit L_{Z10}: (L_{Z90} + 8dB) (Row 4-1 or 4-4 (whichever is relevant) plus 8dB)***											

Note: The above table can be extended/duplicated to account for additional representative premises if required.

Table 5: Intrusive noise measurement data, normalisation of data and calculation of maximum noise limits to prevent unreasonable noise—post-10pm

Measurement location	Row #	Instructions	Start time h:m	Duration mins	Wind speed ms^{-1}	Wind direction	Frequencies – Hz – Unweighted, dB(Z)						Overall dB(Z)	Overall dB(C)
							63	125	250	500	1000	2000		
Affected premises intrusive Lz_{10} levels—Location no. and description:														
Affected premises:	5.01	Measurement info & data												
	5.02	Minus insects/frogs (if applicable)												
	5.03	Plus non-standard windscreen attenuation (if applicable)												
	5.04	Calculated overall unweighted level (if applicable):												
Reference Point Lz_{10} levels—Location no. and description:														
Reference point location	5.05	Measurement info & data												
	5.06	Minus insects/frogs (if applicable)												
	5.07	Plus non-standard windscreen attenuation (if applicable)												
	5.08	Calculated overall unweighted level (if applicable):												
Close external location—Location no. and description:														
Close external location	5.09	Measurement info & data												
	5.10	Minus insects/frogs (if applicable)												
	5.11	Plus non-standard windscreen attenuation (if applicable)												
	5.12	Calculated overall unweighted level (if applicable):												
Source Lz_{10} levels—Specific licensed premises area:														
Specific licensed premises area	5.13	Measurement info & data												
Normalisation moderator														
Reference sound	5.14	Reference sound spectral level					**105**	**109**	**100**	**99**	**96**	**95**	*111.3*	*111.3*
Specific licensed premises area	5.15	Normalised adjustment (reference– measured levels) (Row 5-14 minus Row 5-13)												

Affected premises	5.16	Normalised intrusive noise levels L_{Z10} Row 5-15 plus 5-1, 5-2 or 5-3 (whichever is relevant)												
Maximum noise level calculation														
Intrusive noise limits at affected premises	5.17	From Table 4												
Difference—Normalised intrusive levels at affected premises minus intrusive noise limit	5.18	Row 5-16 minus Row 5-17												
Maximum noise level—At reference point location	5.19	Overall dBZ from row 5.21 minus (Row 5.13- Row 5.08)												
Maximum noise level—At close external location	5.20	Overall dBZ from row 5.21 minus (Row 5.13 minus Row 5.12)												
Maximum noise level—*At specific licensed premises area*	5.21	Overall dBZ from row 5-14 minus largest number in Row 5-18												

Table 6: Calculation of final unreasonable noise limits for close external monitoring locations

Close external monitoring location (CEML)	**Maximum noise limit at CEML Re: representative premises**	**Maximum noise limit at CEML Re: representative premises**	**Maximum noise limit at CEML Re: representative premises**	**Final maximum noise limit at CEML** *(Final max. noise limit is to be the lowest of the levels recorded for the CEML)*
CEML number & description:	*Premises # / Address:*	*Premises # / Address:*	*Premises # / Address:*	***Noise limit dB(C):***
	Noise limit dB(C):	*Noise limit dB(C):*	*Noise limit dB(C):*	
CEML number & description:	*Premises # / Address:*	*Premises # / Address:*	*Premises # / Address:*	***Noise limit dB(C):***
	Noise limit dB(C):	*Noise limit dB(C):*	*Noise limit dB(C):*	
CEML number & description:	*Premises # / Address:*	*Premises # / Address:*	*Premises # / Address:*	***Noise limit dB(C):***
	Noise limit dB(C):	*Noise limit dB(C):*	*Noise limit dB(C):*	
CEML number & description:	*Premises # / Address:*	*Premises # / Address:*	*Premises # / Address:*	***Noise limit dB(C):***
	Noise limit dB(C):	*Noise limit dB(C):*	*Noise limit dB(C):*	

15 Licensed vessels—noise measurement methodology

Potentially affected premises for licensed vessels may include land-based premises or other vessels at defined mooring locations in a waterway.

Licensed vessels are normally operated in a non-stationary mode so assessment will include all potentially affected land-based premises and water-based premises (i.e. residential vessels in defined mooring locations) along the normal routes on the waterway the licensed vessel uses.

Background noise levels will be monitored at locations representative of the route travelled by the vessel in a typical outing for day, evening and night operations.

The acoustic consultant will conduct an assessment of cumulative entertainment and patron noise levels. The highest cumulative noise levels estimated to comply with the noise levels to prevent unreasonable noise for the proposed route, including any potential temporary mooring locations, will be used to determine maximum operating noise levels at nominated locations. This will enable the setting of amplified sound levels on the vessel. Note that compliance measurements will be conducted at affected premises and not on board the vessel.

Noise level checks of entertainment noise may be conducted at nominal distances from the vessel, such as 50m, in a number of directions, as appropriate for the configuration of licensed areas on the vessel.

Pass-by noise levels will be monitored external to potentially affected premises along the typical route, or near temporary residential mooring locations, to demonstrate that unreasonable noise is not caused by the operations of the licensed vessel. The acoustic consultant will need to consider each normal marine location of the vessel as well as all potential routes for the vessel.

16 Noise mitigation measures—consideration in assessment

(a) Entrances and soundlocks

If soundlocks are not installed, the main entrance door must be kept in the open position when noise monitoring is conducted at close external monitoring locations and at potentially affected premises.

If soundlocks are installed, the external entrance doors must be kept open and the internal entrance doors must be kept closed when noise monitoring is conducted at close external monitoring locations and at affected premises.

For soundlocks to be effective, the distance between the opposing sets of doors must be sufficient to enable one set of doors to be closed at all times.

If the use of soundlocks forms part of a licensee's noise management plan for a venue, the relevant licence or permit for the venue will have licensed conditions imposed in line with the above requirements.

(b) Ventilation

If the closure of windows and doors is to be implemented as a noise attenuation measure, then all doors and windows may be closed during the noise assessment to determine noise levels at external locations. However, licensees must be aware that if the attenuation measures are not maintained at all times (e.g. someone opens a window) then the noise levels at external locations and potentially affected premises will likely be higher.

Note: The Commissioner is unlikely to endorse noise levels for differing scenarios involving doors and windows (e.g. different levels for when doors and windows are closed and for when they open).

(c) Sound limiters

External sound levels may be controlled by connecting a sound limiter to the in-house sound system in each of the licensed areas of a venue. The sound limiter must have the capability to limit individual octave bands to be effective in controlling the entertainment noise levels after 10pm. Sound limiters are more effective for recorded entertainment. Sound limiters must be installed so that only staff approved by the licensee of the venue can adjust the output.

The supplier or audio-visual contractor must install the sound limiter and an acoustic consultant must assist in the calibration and commissioning via noise measurements at the specified locations. To ensure compliance with the noise limits at the close external locations (or specific licensed premises area, if applicable) it is recommended that the sound limiter be checked for calibration by an appropriately qualified personal annually. The report of the yearly sound limiter operation check is to be kept by the licensee of the venue and provided to OLGR upon request.

Sound limiters are less effective in controlling external noise levels when entertainment groups or bands supply their own sound systems. If sound limiters are used for externally supplied sound systems, the licensee will prepare a detailed noise management plan. The plan should outline the method of installation of the limiter, the method of checking noise levels at the indoor noise checking locations and close external noise checking locations. It is the responsibility of the licensee to ensure that entertainment noise does not cause unreasonable noise levels at potentially affected premises. This plan must be kept at the venue and be made available to OLGR on request.

If the use of sound limiters form part of a licensee's noise management plan for a venue, the relevant licence or permit for the venue will be conditioned in line with the above requirements.

17 Acoustic report

To be accepted by the Commissioner, the acoustic report must be provided in the following format and provide the following information.

Licensed premises

Full name

Client

- Entity name
- Representative name, contact phone number and email address

Date of report

Date

Version

Report version number

Acoustic consultant

- Consultant name, contact phone number and email address
- Company/employer name, contact phone number and email address
- Details of personal professional qualifications and memberships
- Summary of experience
- Details of referees (if applicable)

Licensed premises—location and description

- Street address
- Real property address
- Premises description
- Site plan, detailing: indoor and outdoor areas, entrances/exits, openable windows, DOSAs, the location of sound systems and speakers and the location of any installed noise mitigation measures (e.g. sound limiters, soundlocks, acoustic curtains/barriers)
- Aerial photograph of premises and the surrounding area

Licensed premises operation

- Approved/proposed operational days and times
- Proposed use of each licensed area
- Proposed entertainment activities of each licensed area
- Maximum occupancy numbers for each licensed area

Surrounding topography, land uses and potentially affected premises

- Description of surrounding topography, including any natural or man-made structures that may enhance or mitigate noise from the licensed premises
- Description of the surrounding premises uses (e.g. the nature and purpose of each)
- Location and description of potentially affected premises
- Aerial photograph and cadastral plan detailing the location of potentially affected premises

Representative affected premises

- Street address of each of the chosen representative affected premises
- Unique identifier allocated to each premises (i.e. a number or letter code)
- Aerial photograph and cadastral plan detailing the location of each representative affected premises
- Reasoning as to why each representative affected premises was chosen
- Description of the measurement location at each premises
- An explanation why the acoustic report used an external reference point location as the primary measurement location, in cases where measurements were unable to be taken from a representative affected premises—this must include the details of the actions taken to gain access to the representative premises

Reference points

- Aerial photograph and cadastral plan detailing the location of each reference point location
- A clear description of each location (e.g. longitude and latitude coordinates, distance and direction from fixed reference points)

Close external monitoring locations

- Aerial photograph and cadastral plan detailing the location of each close external monitoring location
- A clear description of each location (e.g. longitude and latitude coordinates, distance and direction from fixed reference points)

Specific licensed premises area (optional)

- Licensed premises floor plan that clearly identifies the location of each monitoring location
- A clear description of each location (e.g. the distance and direction from fixed reference points, such as a bar, stage, door, pillar)

Meteorology

- Describe the normal meteorological conditions at the licensed premises (e.g. typical wind speed and direction at coastal locations)
- Describe how these have been considered in the acoustic assessment

Background noise measurements—pre-10pm

- Days, dates and times background measurements were taken
- Description of prevailing meteorological conditions during the background noise measurements
- Description of how the background measurements were taken
- Details of extraneous noise events, including frogs and insects, and a description of how these were excluded from the background measurements
- Statement as to whether the days and times chosen for the background measurements are representative of the lowest background periods and an explanation as to why the particular day(s) and time(s) were chosen
- Table 1 detailing the lowest background measurement data recorded at each representative affected premises

Intrusive noise measurements—pre-10pm

- Days, dates and times background measurements were taken
- Description of premises setup during testing (e.g. position of doors and windows, locations of sound systems)
- Description of how sound system tests were undertaken and a description of the intrusive source noise
- Description of prevailing meteorological conditions during the intrusive noise measurements
- Description of how the intrusive measurements were taken
- Details of extraneous noise events, including frogs and insects, and a description of how these were excluded from the intrusive measurements
- Table 2 completed in relation to each representative affected premises, detailing the maximum noise limits for the relevant reference point and close external monitoring locations (and internal locations where required / voluntarily undertaken)
- Table 3 completed
- Explanation of assessment of impact of non-amplified music noise, patron noise and mechanical plant noise

Background noise measurements—post-10pm

- Days, dates and times background measurements were taken
- Description of prevailing meteorological conditions during the background noise measurements
- Description of how the background measurements were taken
- Details of extraneous noise events, including frogs and insects (where relevant), and a description of how these were excluded from the background measurements
- Statement as to whether the days and times chosen for the background measurements are representative of the lowest background periods and an explanation as to why the particular day(s) and time(s) were chosen
- Table 4 detailing the lowest background measurement data recorded at each representative affected premises

Intrusive noise measurements—post 10pm

Note: The pre-10pm intrusive measurement data may also be used for the post-10 pm calculations where appropriate.

- Days, dates and times background measurements were taken
- A description of premises setup during testing (e.g. position of doors and windows, locations of sound systems, any areas operating)
- Description of how sound system tests were undertaken and a description of the intrusive source noise
- Description of prevailing meteorological conditions during the intrusive noise measurements

- Description of how the measurements for intrusive noise were taken
- Details of extraneous noise events, including frogs and insects (where relevant), and a description of how these were excluded from the intrusive measurements
- Table 5 completed in relation to each representative affected premises, detailing the maximum noise limits for the relevant reference point and close external monitoring locations (and internal locations where required / voluntarily undertaken)
- Table 6 completed where necessary
- Explanation of assessment of impact of non-amplified music noise, patron noise and mechanical plant noise

Instrumentation

- Sound monitoring instrumentation details—make(s), model(s), serial number and measurement settings used
- Details of last calibration for both sound monitoring device and calibrator
- Acoustic calibrator details—make(s) and model(s)
- Wind speed anemometer and compass—make(s) and model(s)

Field calibration levels

- Dates and times of field calibration
- Calibration levels

Noise management ~~p~~lan

A copy of the RAMP for the premises provided as an attachment that includes the proposed noise management plan

Conclusion and recommendations

- Summary of findings
- Recommended close external monitoring location noise limits
- Recommended reference point location noise limits
- Recommended internal monitoring location noise limits (optional)
- Recommended noise management processes for the licensed premises
- Recommended noise mitigation measures for the licensed premises

18 Glossary

Representative affected premises

A premises identified by the acoustic consultant that may be adversely affected by noise emanating from the licensed premises

‘Representative affected premises’ applies to both residential and commercial properties, including common areas and associated land, as well as noise-sensitive public land or marine environments.

Representative affected premises may also be referred to as an affected premises or representative premises.

Reference point location

A location in a public place, near to a potentially affected premises and that is easily and safely accessible at all times

There should be at least one reference point location for each of the representative potentially affected premises.

Specific licensed premises area

The specific licensed premises area should be selected such that it is representative of the typical loudest area within the licensed premises. Within that area a location should be selected

as a reference point for measuring noise levels generated within the premises— approximately 3m from the source/speaker may be suitable but is not obligatory.

Close external monitoring locations

A close external noise monitoring location is to be selected within 25m of the boundary of the licensed premises, in the general direction of each of the representative affected premises. In most instances, the number of close external monitoring locations required will be relative to the number of representative affected premises.