A photograph of a person wearing a black leather jacket, with their right hand raised in the air. The background is a blurred outdoor music festival scene with a stage, speakers, and a crowd of people under a clear blue sky. A semi-transparent red rectangle is overlaid on the left side of the image, containing the title and subtitle text.

A Brief Guide to the Pop Code for Event Organisers

Understanding how to
manage environmental
noise from concerts,
festivals, and other
outdoor music events

An eBook from the noise experts at

 **Cirrus**
Research plc

Introduction

The advent of the summer months signals the arrival of the festival and outdoor event season. Large gatherings of people for music and other forms of entertainment brings joy to thousands up and down the country.

However, research conducted by Buckinghamshire New University¹, 80% of people in the UK think that noise caused by festivals and other outdoor events has a negative impact on the environment. It's not just the natural world that is at risk either. Excessive noise can cause a huge amount of disturbance and annoyance to local residents, accounting for a large number of noise complaints every year.

Excessive noise isn't just annoying and distracting. The list of health conditions it can cause is well-documented and will be looked at a bit later.

This eBook looks at the main source of guidance in the UK when it comes controlling noise from outdoor events. Often referred to as the Pop Code, the **Code of Practice on Environmental Noise Control at Concerts**² highlights key things organisers can do to monitor and control excessive noise levels.

The two types of noise

Before we get started, it would be a good idea to briefly introduce the two main types of noise: **environmental noise** and **occupational noise**.

Environmental noise

Environmental noise (or noise pollution) is any noise that affects the surrounding environment. According to the World Health Organisation, **noise pollution is the second biggest cause of environmental health problems**, which makes it clear why it is important to reduce and control it effectively. Environmental noise can also lead to poor health in people and reputational damage to your organisation, especially if nuisance noise complaints are raised with local authorities.

Occupational noise

As the name suggests, occupational noise (or noise at work as it's often called) is the noise people experience while doing their jobs. Naturally, festivals and other outdoor events are loud, which is often their appeal. However, as per the UK's **Health & Safety Executive**, event organisers have a responsibility to manage the risk of noise to their staff. So, it's important to know what to look out for, how to measure noise and, most importantly, control it to reduce the risks to site workers.

"Noise is the second largest environmental cause of health problems, just after the impact of air quality (particulate)
- World Health Organisation³

| Noise Level dB(A) | Safe exposure time |
|-------------------|--------------------|
| 80 | 8 hours |
| 83 | 4 hours |
| 86 | 2 hours |
| 89 | 1 hour |
| 92 | 30 minutes |

What is the Pop Code?

Although the name suggests a set of rules by which all pop musicians must abide, the Pop Code is actually something a little less exciting.

Written in 1995, the Noise Council's Code of Practice on Environmental Noise Control at Concerts became known as the Pop Code and outlines how organisers should manage the environmental impact of noise from their events.

Although not enshrined in law, the Code outlines several areas of best practice to avoid any

potential breaches of legislation, including the **Environmental Protection Act 1990**³ for England and Wales, and the **Control of Pollution Act 1974**⁴ for Scotland.

The Code was put together by a working party of noise experts and specialists based on their experience and working knowledge of acoustics, and the specific challenges that arise with environmental control at concerts and other outdoor events. One of the key contributors was Cirrus Research's founder, Dudley Wallis.

Why is noise good-practice important?

Noise causes more complaints than any other issue to local authorities. It can quickly damage your relations with local residents and tarnish your event's reputation. As recently as 2019, the organisers of the world-famous Glastonbury Festival were ordered to reduce their noise levels after a record number of people complained about the disturbance the event caused.

If complaints are upheld by a local authority, it's possible that they may enforce restrictions on your event, including time and volume limits. In more extreme cases, the local authority may refuse to grant you a licence for your event.

Establishing and maintaining a good relationship with local residents and businesses in the run-up to your event is key to keeping the number of complaints to a minimum.

Measuring, monitoring and controlling noise is important to avoid complaints and local authority restrictions. It's also necessary to ensure that people's health is not adversely affected.

Exposure to high noise levels can cause hearing loss and tinnitus. Disturbance caused by noise, low-frequency noise in particular, can cause stress and sleep deprivation, each of which can lead to more serious health problems such as cardiovascular disease, hypertension and mental health conditions.

What are noise levels permitted by the Pop Code?

The Pop Code sets out the maximum permitted noise levels from festivals and other music events, referred to as Music Noise Levels (MNLs). An MNL is defined as the L_{Aeq} of the music/vocals measured in a particular location; L_{Aeq} is the A-weighted average noise level over a specific period of time. In the case of MNLs, it is 15 minutes.

The maximum permitted noise levels according to the Pop Code are as follows:

| Concert days per calendar year, per venue | Venue category | MNL limit |
|---|----------------------------|--|
| 1 to 3 | Urban stadium or arena | Not more than 75dB(A) over a 15-minute period |
| 1 to 3 | Other urban or rural venue | Not more than 65dB(A) over a 15-minute period |
| 4 to 12 | All venues | Not more than 15dB(A) above the background noise level over a 15-minute period |

Where should you measure MNLs?

The precise location of when and where to measure the noise levels isn't clear-cut in the Pop Code, and requires some careful interpretation. By looking in Section 2 of the Code, we can see that the following definition of "noise monitoring position" is used:

"The location of the microphone within the venue from which the level of sound is monitored and controlled. For outdoor venues, this location tends to be the mixer."

Although this definition provides a helpful indication of where to position your noise measurement instrument (more on that later), it's not actually the location where MNL limits need to be applied.

Top tip from the experts:

Low-frequency noise is often considered the most annoying type of noise caused by music events. There are no specific limits or restrictions on low-frequency noise. However, the Pop Code recommends **a limit of 70dB in either the 63Hz or 125Hz frequency bands.**

The MNL limits refer to the noise level at 1 metre from the facade of any noise-sensitive premises. In plain speak, **the MNL should not exceed the limits as stated above when measured 1 metre away from the exterior of a premises that could be adversely affected by noise.**

How should you measure noise according to the Pop Code?

Planning your event - five easy steps to get you started

To minimise the impact of environmental noise from your event on local residents and businesses effectively, it's important to plan your monitoring programme carefully. Here's five steps to get it right, first time:

1) Carry out an initial noise survey to determine the sound propagation between the venue and those premises that might be affected by noise. To ensure accurate results, you might want to consider hiring an experienced consultant.

2) Based on the results of the initial survey, check the viability of your event. The optimal noise level for audiences attending music events should be higher than 95dB(A) at the mixer position.

4) The local authority will make use of licensing conditions and statutory powers to make sure the procedures in the Pop Code are implemented.

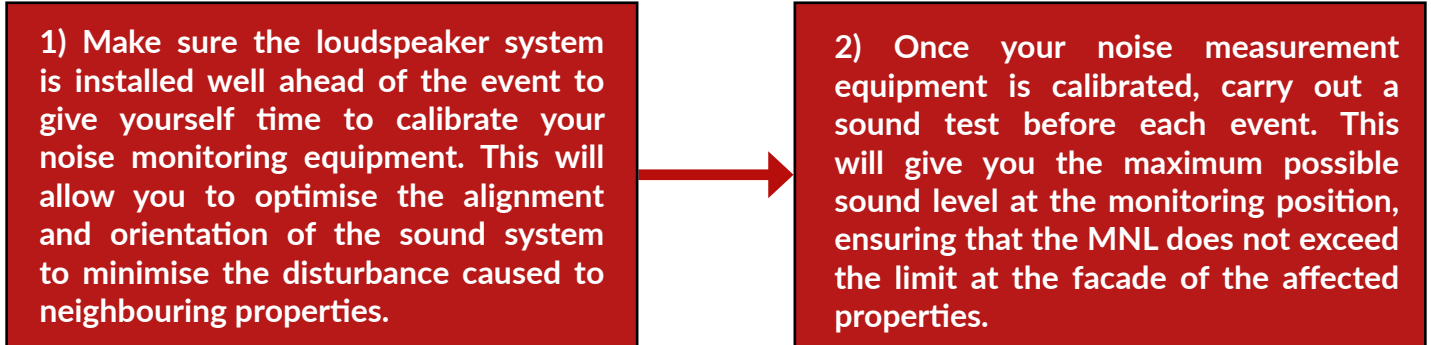
3) Give your local authority as much notice of your event as possible, especially if you're planning on holding several events during the year.

5) Appoint a noise consultant or person responsible for measuring, monitoring and controlling the noise levels for your event.

Before your event - getting ready to monitor noise levels

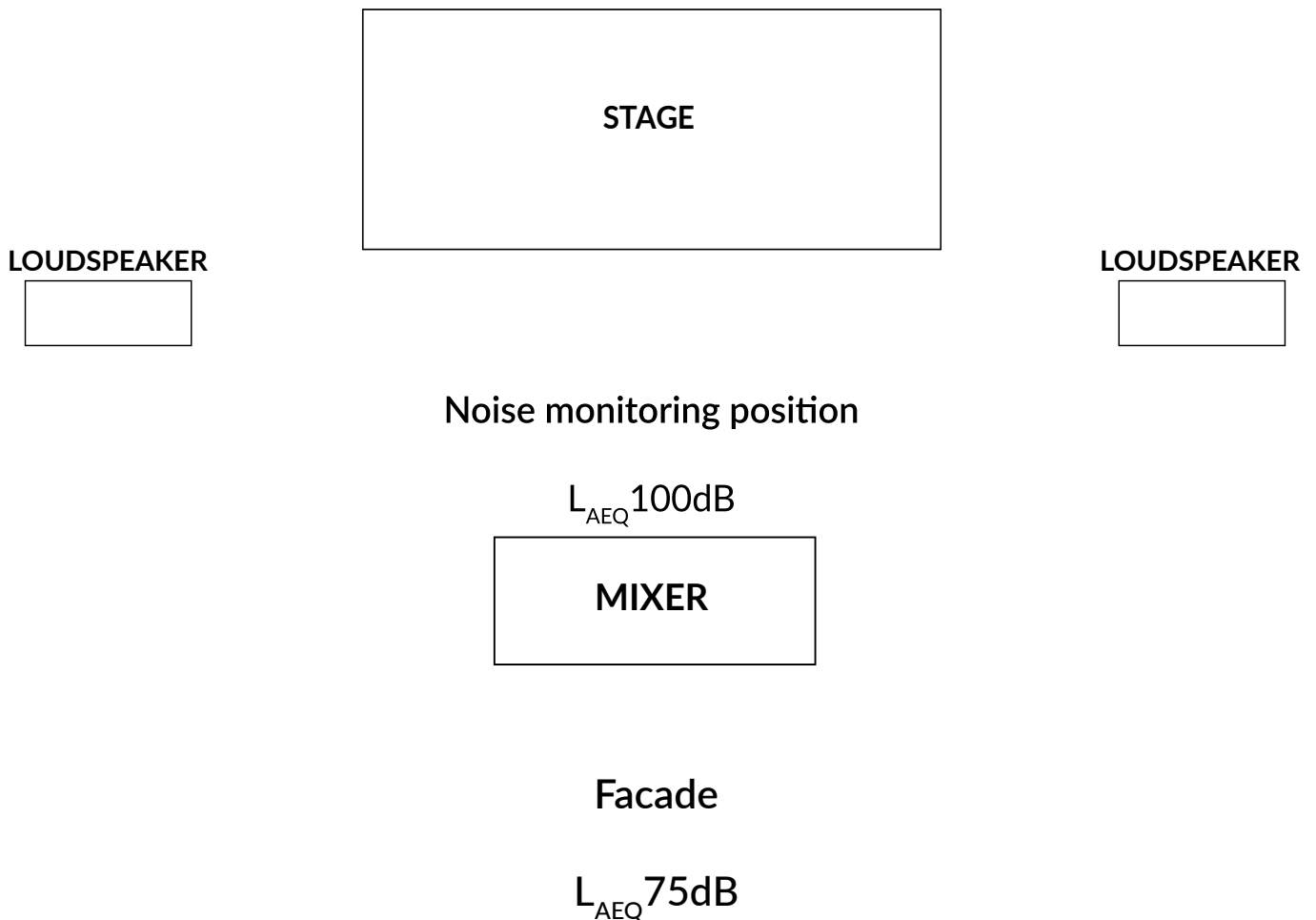
Given the importance of monitoring and controlling noise levels, it's essential to make sure you're well prepared. This will give you the best chance of avoiding complaints from nearby residents and businesses.

There are two key things to consider before your event takes place:



REMEMBER: An audience will affect the ambient noise level in your venue - cheers and applause may add to the noise level, but the greater the number of people, the greater the absorption of sound, reducing the noise level!

Example setup



During your event - four top tips for a successful event

Now that you've planned and prepared for your event, it's the moment you've been waiting for! Monitoring and responding to live noise levels isn't easy. So, here's four top tips to make sure you minimise the impact of environmental noise pollution:

1) Set up, advertise and monitor a noise complaint hotline to allow people to raise concerns in real-time. This will allow you to respond immediately, adjusting the noise level wherever necessary.

2) Set up a communication network between everyone involved in monitoring and controlling noise levels. This should include your noise consultant, technical staff and the local police service.

4) Monitor the L_{AEQ} at one-minute intervals - this gives you plenty of notice of when noise levels are likely to breach the 15-minute limit. Using a display will help the sound engineer make any necessary adjustments.

3) Monitor noise levels inside the venue at the noise monitoring location and at sample locations outside. If the event is using delay towers, you might need to do additional monitoring inside the venue.



What can you use to measure noise and comply with the Pop Code?

Environmental noise monitoring solutions from Cirrus Research

Cirrus Research offers a range of solutions to help you monitor, manage and control environmental noise from your event. All our solutions provide the necessary data to comply with the Pop Code and are easy and effortless to use to make your job completely hassle free.



Prepare for your event and monitor live noise levels inside your venue

With the Optimus+ Green, you can take your initial measurements both inside and outside the venue and monitor live levels from your chosen noise monitoring position throughout your event:

- ✓ Measures all the necessary noise parameters for Pop Code compliance simultaneously, including L_{Aeq} and L_n values
- ✓ Provides data for all frequency bands to help you control low-frequency noise and minimise the disturbance caused to nearby residents and businesses
- ✓ Meets international sound level meter standards, so you can be confident in the accuracy and reliability of your readings
- ✓ Comes with licence-free reporting and analysis software, as standard, so you can provide evidence should a complaint be made against your event
- ✓ Ergonomic design with a clear-to-read display and easy-to-use interface, so you don't have to spend weeks learning how to use it



Take preparatory readings and monitor live measurements outside your venue

You can use an Optimus+ Green handheld sound level meter with the Environmental Noise Measurement Kit to provide longer-term outdoor functionality. Take your initial readings on the boundary of your venue and monitor live readings remotely to get a comprehensive picture of the environmental noise impact of your event!

- ✓ All the functionality as offered by the Optimus+ Green sound level meter with the addition of a robust, secure and weatherproof case
- ✓ Flexible power options to suit your specific needs
- ✓ Get remote access to live noise readings at the perimeter of your event at any and stay in complete control of your noise output
- ✓ React and respond instantly to high noise levels with real-time alerts direct to your email inbox or smartphone through push notifications





Remote access to live and historic noise data for your venue

Quantum is Cirrus Research's range of remote noise monitoring solutions, powered by cloud connectivity. Available to both inside your venue and on its perimeter, Quantum provides permanent noise level monitoring with data accessible remotely at any time, in any place and on any device. Quantum allows you to have complete control over your venue's environmental noise impact.

- ✓ Indoor and outdoor instruments available to provide complete coverage for your venue
- ✓ Instant access to all your noise data through the easy-to-use MyCirrus cloud platform and Quantum Portal
- ✓ Noise events captured at pre-set noise levels with automatic audio recording
- ✓ Real-time alerts to your email inbox and smartphone so you can respond quickly to any breaches of the Pop Code music noise level limits
- ✓ System integrity check (SiC) on the Quantum Outdoor automatically scans for any errors in the instrument's system, making it easy to maintain the performance of your equipment
- ✓ Available to purchase or lease



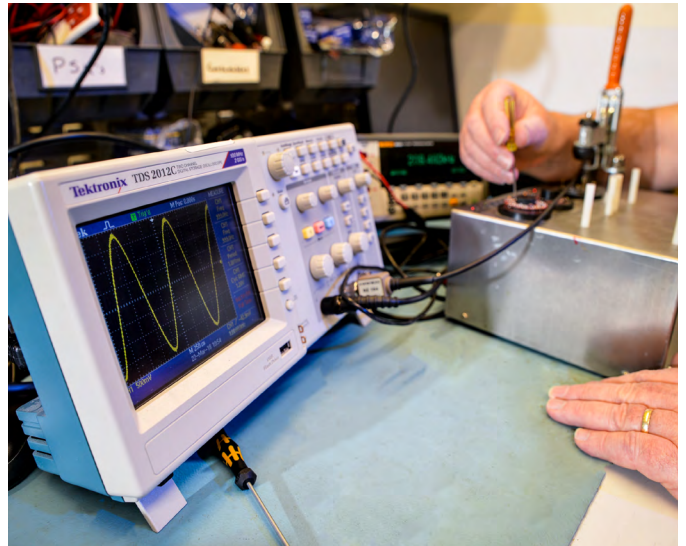
Periodic verification and instrument calibration

Regular factory calibration or periodic verification is one of the most important aspects of owning and using noise measurement equipment. As well as providing noise measurement solutions, Cirrus Research is also renowned as a leading calibration laboratory, capable of performing rigorous and in-depth checks on all acoustic measurement equipment.

In addition to checking that your noise measurement equipment is working exactly as it should, we are able to make any necessary adjustments in order to guarantee your equipment passes its calibration. Imagine if your mechanic fixed all your MOT issues for free so it would pass - that's what we do, but for your noise measurement equipment!

We also have a UKAS-accredited calibration laboratory on-site (lab no. 10148) to meet the strictest quality requirements. You can read more about our scope of accreditation on the UKAS website:

https://www.ukas.com/wp-content/uploads/schedule_uploads/00001/10148%20CalibrationSingle.pdf



Training and support

The Noise Academy from Cirrus Research provides a range of training opportunities to help deepen your understanding of noise measurement and provide you with the confidence to collect accurate and reliable data.

- ✓ Product-specific training courses, so you can get to grips with your equipment.
- ✓ Environmental noise courses, to provide you with a greater understanding of the regulations involved and methods required to effectively manage noise output and its impact from your events and/or venues

About Cirrus Research

Established in 1970 in the UK, Cirrus Research is one of the world's leading names in acoustic measurement.

We are dedicated to the prevention and eradication of noise-induced hearing loss and environmental noise pollution. We achieve this by developing and supplying high-quality, simple-to-use and accurate acoustic measurement instrumentation and complementary products and services, that make the measurement of noise, vibration and other environmental conditions as easy and accessible as possible to individuals and organisations worldwide.



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About this eBook

This eBook was written by Cirrus Research in 2022 based on the *Code of Practice on Environmental Noise Control at Concerts* published in 1995 by the now-defunct Noise Council. All information regarding standards and regulations was correct at the time of writing and publication of this eBook.

If you have any questions regarding the content of this publication, please contact the Cirrus Research marketing team: marketing@cirrusresearch.com.

Further reading

The 5 Biggest Noise at Work Mistakes, and How to Fix Them, Cirrus Research eBook

The 4 Biggest Vibration at Work Mistakes, and How to Fix Them, Cirrus Research eBook

Noise Terminology Guide, Cirrus Research eBook

References

¹ New Survey Highlights Fan's Concerns About the Environmental Impact of Live Events, 0 https://www.agreenerfestival.com/wp-content/uploads/Bucks-AGF_AUDIENCE_RESEARCH_2012.pdf

² Code of Practice on Environmental Noise Control at Concerts, 1995, available at <https://modern.gov.lambeth.gov.uk/documents/s117890/Annex%20B%20-%20Code%20of%20Practice%20on%20Environmental%20Noise%20Control%20at%20Concerts.pdf>

³ European Commission, available at https://ec.europa.eu/environment/noise/health_effects_en.htm

⁴ Environmental Protection Act 1990, available at <https://www.legislation.gov.uk/ukpga/1990/43/contents>

⁵ Control of Pollution Act 1974, available at: <https://www.legislation.gov.uk/ukpga/1974/40>

