

Positive Control of Noise from Entertainment Venues (Is UK experience relevant to New Zealand?)

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Having practiced as an independent acoustics consultant in the UK since 1970, Fred Traexler now provides acoustic consultancy in New Zealand (since Jan. 02). Based in Queenstown it was inevitable that the question of entertainment noise would arise, with so many bars and nightclubs being open almost 24 hours a day.

Back to the 70's!

This was the time when the problems of noise from entertainment venues became quite an issue in the UK.

Initially the onus was put on DJ's to limit or control noise emission from entertainment venues, often by crude indicator lights when a certain level was exceeded.

It is not surprising that such efforts were quite unsuccessful. With the party mood getting hotter, the volume would creep up with the

DJ's usually yelling above the music level. With the type of rock and pop music involving increasingly heavy bass beat and with ever more powerful bass bins the situation got rapidly worse.

The initial reluctance or inability by some operators to positively control the music levels resulted in many venues being closed down by the Local Authorities.

The First Efforts

The attempts by sound engineers

to use compression techniques to limit the noise emission also proved largely unsuccessful.

Apart from causing undue distortion of vocals, ingenious DJ's soon found ways to circumvent or change the "cut-off" limits by manipulating the complicated compressor units.

At the same time, the first purpose designed Noise Limiters came onto the market. They were essentially microphone based devices which would cut off the power supply to the PA system after a certain pre-set

www.acoustics.org.nz

The New Zealand Acoustical Society website offers information on society activities and details of the elected officers of the Society.

Other ideas which are being developed are:

- Adding a search engine for archives of *New Zealand Acoustics*,
- Providing a list of members of the Society,
- Publishing reviews of the 16th Biennial Conference.

Please send further suggestions and feedback to Thomas Scelo (t.scelo@auckland.ac.nz) or follow the instructions on the home page of the web site

value was exceeded for a given length of time. The visual warnings were provided by changing the intensity or flashing of lights, with the most common being the use of traffic light colours.

The problem found with such systems was that the music volumes could be increased by blocking off the microphone or that the control unit could be tampered with too easily. Often such systems were provided with an automatic re-set and it was this which could cause damage to some components of the PA system.

The State of the Art

The latest microphone based Noise Limiters are designed with anti-tamper seals and sensitive microphone circuitry, minimising any kind of tampering. Different weighting networks are provided to suit the predominant frequencies of the type of music in question.

In order to minimise the danger of damage to the PA systems no automatic re-sets are provided, unless specifically required. It is now common practice to provide a separate fused (2 Amp max) power supply regarding the computer controlled CD unit.

The argument by sound engineers that the cutting of power from the PA system causes equipment damage was as inappropriate then as it is now in NZ. Modern PA systems are invariably protected against sudden power failure and it is up to the DJ to ensure that the PA system is powered up in a safe way.

It is after all the DJ's, or Live Group's responsibility to pay attention to the warning lights of the Noise Limiter.

For quite some time Automatic Volume Controllers have become available designed for fixed in-house PA systems. Once calibrated up, these units work 'transparently', the only indication for the DJ being a warning light that the unit is controlling the output level.

The skilful DJ will learn to work within the volume range (without the light coming on) thus eliminating any distortion. Up-to-date types of such Automatic Volume Controllers also provide appropriate weighting networks and anti-tamper devices. Unlike compressor based units and peak limiters (designed for equipment protection), purpose designed



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Automatic Volume Controllers do not cause noticeable distortions but provide positive control of noise emission from entertainment venues.

The most up-to-date units also allow operations at different levels (via a clock-timer) and may be linked with emergency door switches etc.

In recent years, following various tragedies at entertainment venues, further advancements have been made in providing Automatic Volume Controllers, which can be linked to fire alarm circuits and

reduce music levels during an emergency, allowing calm announcements and directions being given.

Sadly it has been shown that in many cases people are severely injured or die as a result of panic. Such units can literally save lives and in view of the worldwide tragedies which are in the news on a regular basis, it may not be long before each nightclub or similar venue will be required to provide measures to minimise panic during emergency situations.

The Way Forward?

In summary, it is amusing to notice the reluctance of most nightclub and bar operators in New Zealand to provide comparatively inexpensive and purpose designed Noise Limiters. There is also resistance from at least some sound engineers who seem to think that they are also experts in environmental noise control.

The arguments voiced now in NZ are the same as those used in the UK all that time ago.

Perhaps this has much to do with the punitive fines, followed by injunctions which seem to be working well in the UK and indeed in most European Countries. No doubt in the future there may be similar changes in New Zealand, where noise from entertainment venues will be controlled in a more positive manner.

With up-to-date Noise Limiters being readily available, perhaps it takes some Kiwi ingenuity to find a way to implement reliable and positive control of entertainment noise to the benefit of the community as well as the trouble free operation of nightclubs, bars and similar venues. □