

# Amplified sounds at high levels

## Regulations in France

WHO / OMS  
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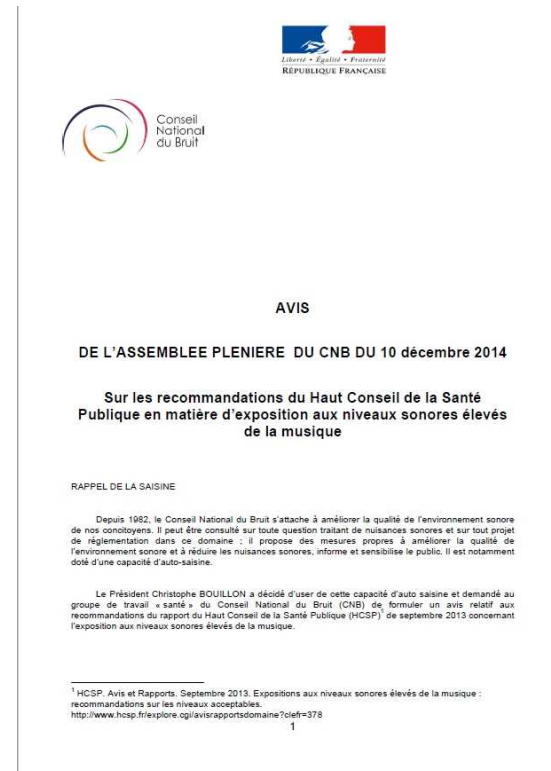


# Preliminary documents

Origin : Referral from the Director General of Health in 2010

Haut Conseil de la Santé Publique  
High Council of Public Health

Conseil National du Bruit  
Noise National Council



Links : <https://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=378>  
<http://www.bruit.fr/images/stories/pdf/avis-cnbn-recommandations-HCSP-exposition-musique-10-dec-2014.pdf>



# Decree # 2017-1244 of August 7, 2017 - Prevention of risks related to noise and amplified sounds: (1)

Source: [www.legifrance.gouv.fr](http://www.legifrance.gouv.fr)

Intended to <<**protect the hearing of the public exposed to amplified sounds at high levels, in places hosting activities involving the diffusion of amplified sounds, which are open to or receiving the public, closed or open, as well as the health of the residents of zones bordering these places.** >>

1) Never exceed, at any time and in any place accessible to the public:  
**102 dB(A) over 15 minutes and 118 dB(C) over 15 minutes.**

Activities involving the diffusion of amplified sounds specifically intended for children up to the age of six, shall not exceed :

**94 dB(A) over 15 minutes and 104 dB(C) over 15 minutes;**



# Decree # 2017-1244 of August 7, 2017 - Prevention of risks related to noise and amplified sounds: (2)

Source: [www.legifrance.gouv.fr](http://www.legifrance.gouv.fr)

- 2) **Continuously record sound levels in dB (A) and dB (C)** to which the audience is exposed and retain these recordings;
- 3) **Display continuously in the vicinity of of the sound system control the levels in dB (A) and dB (C)** to which the audience is exposed;
- 4) **Inform the public about hearing risks.**
- 5) Make available to the public, **free of charge, individual hearing protections adapted to the type of public** present in the venues,
- 6) Create **areas of auditory rest** or, alternatively, provide **periods of rest**, during which the sound level does not exceed the rule of equal energy based on the value of 80 dB(A) equivalent over 8 hours.

With the exception of discotheques, the regulations in 2) and 3) are required only for venues with a capacity of more than 300 people.

With the exception of festivals, the regulations in 2), 3), 4), 5) and 6) apply only to venues diffusing amplified sounds ion a regular basis.

The regulations of 2), 3), 4), 5) and 6) do not apply to cinematographic shows and specialized or higher education institutions for artistic creation.



# Decree # 2017-1244 of August 7, 2017 - Prevention of risks related to noise and amplified sounds: (3)

Source: [www.legifrance.gouv.fr](http://www.legifrance.gouv.fr)

**"Noise generated by activities involving the diffusion of amplified sounds at high noise levels in public or publically-accessible premises shall not, by reason of their duration, repetition or intensity, affect the tranquility or health of the neighborhood.**

In addition, noise emissions from activities (as defined in the same law) that are carried out in an enclosed area may not exceed , in premises that are residential or involve the prolonged presence of persons, **the limit values of spectral emergence of 3 decibels in the standardized octaves from 125 hertz to 4000 hertz and shall not exceed the global emergence of 3 dB(A).**

There is an obligation to establish a **study of the impact of noise nuisance** to prevent affecting the tranquility or health of the neighborhood. In particular, this study may determine that it is necessary to install **sound pressure limiters**

In case of infringement:

- 5th class contraventions (€ 1,500 or € 3,000 in the event of a repeated offence)
- Possibility of **confiscation** of devices or sound equipment used in the commission of the offence.



# Timeline and issues

**Application deadline** : October 1st 2018. An **ordinance** (arrêté) including items ranging from measuring codification to prevention guidance should, by then, give the **implementation modalities**.

## **Note :**

In October 2017 a press tribune in Libération, a main newspaper, signed by trade unions, venues, festivals, etc and some famous artists was speaking of artistic censorship, decline of music, economical problems and helped to raise the voices of some professionals arguing about difficulties of application...

Link : [http://www.liberation.fr/debats/2017/10/20/faites-du-bruit-pour-sauver-la-musique\\_1604484](http://www.liberation.fr/debats/2017/10/20/faites-du-bruit-pour-sauver-la-musique_1604484)

It announced a revocation request of the text made, on October 9 2017, before the French Council of State by the Trade Union chamber of Cabarets and Nightclubs Chambre Syndicale des Cabarets Artistiques et Discothèques / CSCAD) .

I wrote another tribune (in Les Echos, a main financial media, because of the proeminency of the economic reason). (Analysis of the text and of the difficulties, later in this presentation)

That last tribune is now the position on the decree of Bruitparif and La Semaine du Son.

Link : <https://www.lesechos.fr/idees-debats/cercle/cercle-174532-sons-amplifies-a-des-niveaux-sonores-elevés-un-decret-en-demi-teinte-2121350.php>



# Highlighted point 1 : Acceptable Levels ?

(Source : ISO 1999:1990 (1990). "Acoustics—determination of occupational noise exposure and estimation of noise-induced hearing impairment," International Organization for Standardization (ISO), Geneva, Switzerland.)

**HSCP : "Acceptable" exposure time**  
**without protection according to**  
**sound intensity in dB (A)**

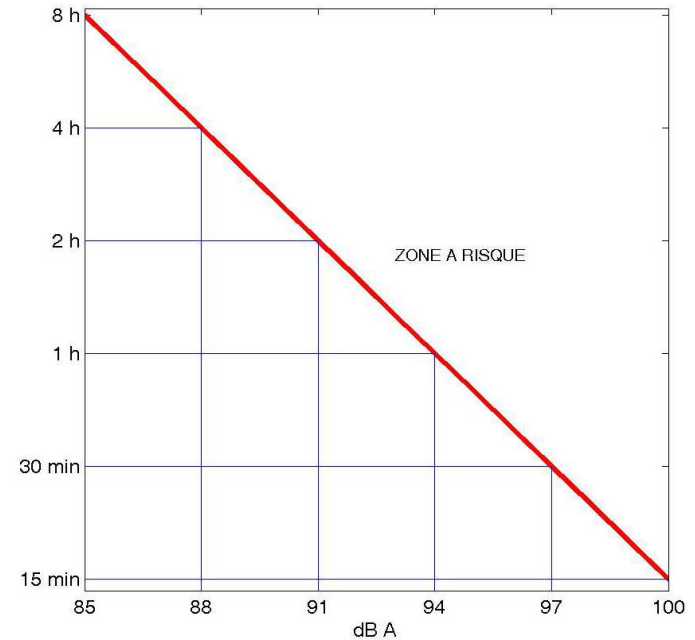
**Danger threshold:**

**85 dB (A) during 8 hours**

**Same calculation**

**Less than 8 hours at 85 dB(A)**  
**from 4 hours to 88 dB(A)**  
**from 2 hours to 91 dB(A)**  
**from 15 minutes to 100 dB(A)**

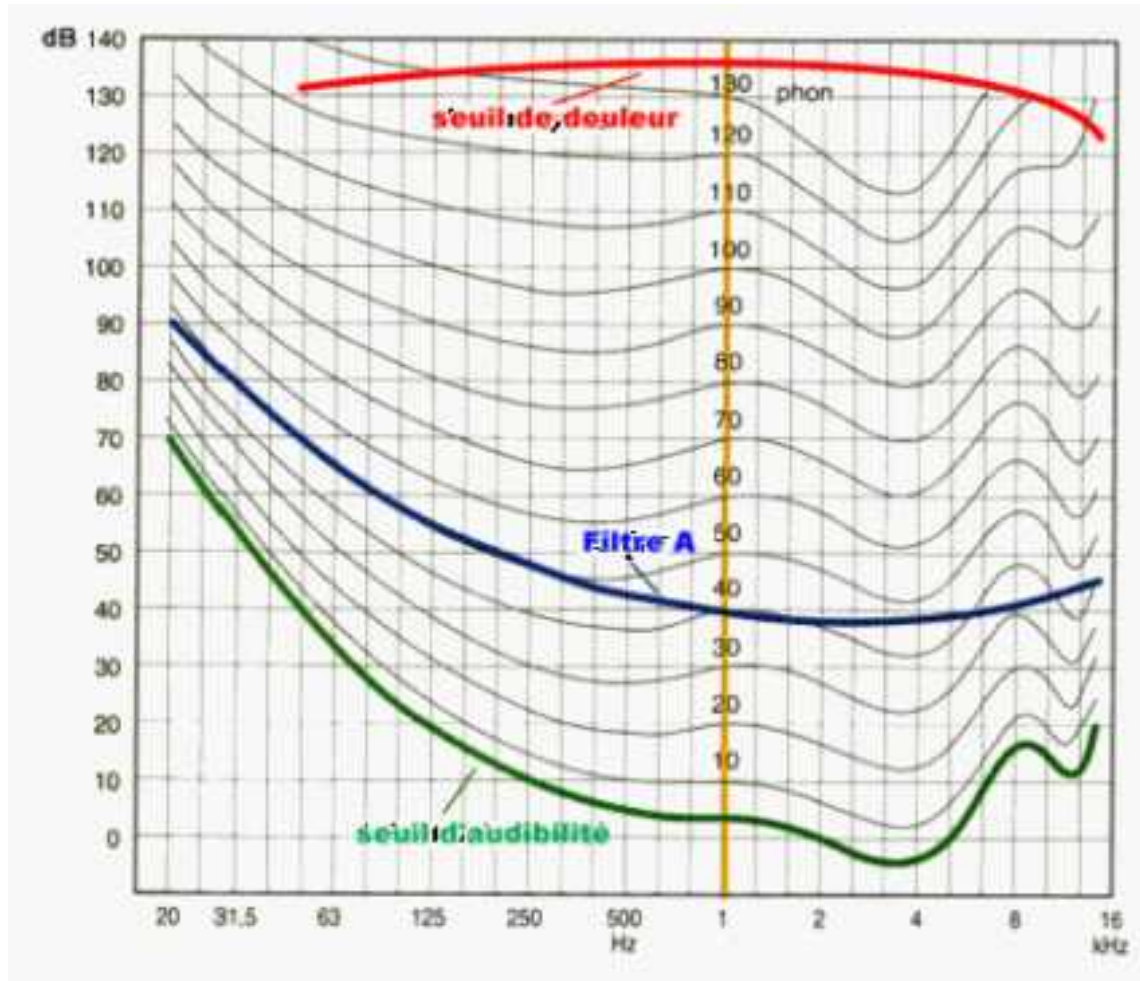
...  
**from 4 Mn to 105 dB(A)**



- For the Public: **World Health Organization (WHO) Recommendation**

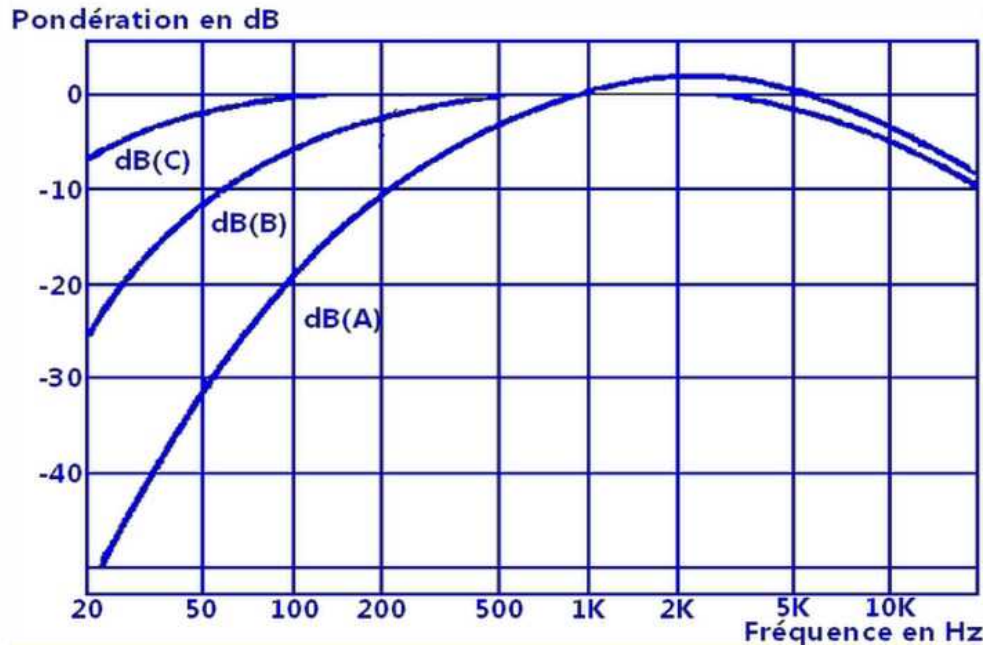
Not to participate more than four times per year in ceremonies, festivals, entertainments whose levels exceed 100 dB (A) on average over 4 hours or 110 dB (A) in Maximum Level.

# dB weighting and physiology





# Highlighted point 2 : A & C Weighting



The C weighting is flatter frequencies, is adapted to the response of the ear to sound pressure levels, around 70 dB

Average deviation between a sound level expressed in dB (A) and in dB (C) is about 12 dB

The introduction of an additional limit at 118 dB (C) on 15 min also gives the possibility to see a better account taken about low frequencies, evaluated by the HCSP at 91% of global sound energy in contemporary musics

# Work Regulations

## Applicable to the staff in venues

The Decree of July 19 2006, transposing the European Directive 2003/10 / EC, stipulates that for 8 hours of exposure to an equivalent continuous sound level of 80 dB (A), or 135 dB (C) peak, there is a auditory risk and that preventive measures must be taken (training, information, proposal for a medical follow-up).

From 85 dB (A) or 137 dB (C) peak, (ie the level of a snare drum) it is necessary to take technical measures to reduce noise and reorganise work. Medical monitoring is thus reinforced ... The employer must ensure the hearing protectors are worn, and has an obligation of result ...

The daily exposure limit value is 87 dB (A), or 140 dB(C) peak, including ear protections



# Portable Devices : Art. L. 5232-1. :



Source légifrance Updated w/ « health » Law No. 2016-41 January 26, 2016

**'Designed to be safe for the user's hearing under normal or reasonably foreseeable normal conditions of use. '**

**"Accompanied by health messages about the risks associated with their use and how to prevent these risks. "**

**Amendment "A 12"**

**Device :**

**Limitation of the maximum output power of the complete unit : player + its listening device at 100 dB (A): 1 September 1998;**  
**85dB (A) (27mV) <Emission level <100dB (A) (150mV) : A visual or audible warning signal is provided when the user exceeds 85 dB(A). (Mandatory validation by the user).**

**Headphones and earphones :**

**Digital input + wireless listening (Bluetooth, ...): 100 dB (A) acoustic output**  
**Analogic input, with an acoustic output of 94 dB (A) for 75 mV**

**Another headphone of lower impedance, so a higher efficiency, can increase the output level.**  
**The number of headphones connected to smartphone and tablets ... that can exceed the maximum limit allowed can be estimated at 30%. These headphones do not go beyond the legal framework. It's their coupling with an audio device that does it. (Source Tristan François: Specialised Journalist: Week of Sound 2014)**



# Switzerland

## Obligations de l'organisateur de manifestations dont le niveau sonore dépasse 93 dB(A)

Niveau sonore Manifestation	de 93 à 96 dB(A) sans limite de durée	de 96 à 100 dB(A) durée moins de 3 heures	de 96 à 100 dB(A) durée plus de 3 heures
Annoncer la manifestation	●	●	●
Indiquer le niveau sonore maximal	●	●	●
Informar le public sur les éventuels risques pour l'ouïe	●	●	●
Remettre des protections auditives	●	●	●
Contrôler le niveau sonore	●	●	●
Enregistrer le niveau sonore			●
Prévoir une zone de récupération auditive			●

# Main Elements for Discussion (1)

Some items may vary as the definitive text of the ordinance is unknown.

Legend :      Green : OK/Positive      Orange : Should be ?      Red No/ Negative      Black : Comments

- HCSP recommendations were 100 dB(A) for 15 minutes / dB(C) limit is a progress

**(More variable limits exist in Switzerland** and what seems to be what will happen in for Belgium ( prevision : 85 dB (A), no restriction; 95 dB(A), information to public and 100 dB(A) earplugs + pauses zones)

- The text concerns amplified sounds and not only music and includes open air / festivals **but takes no account at the moment the unamplified part in loud events (mechanical sports, etc)**

- Prevention **(with exclusions)**: information about auditory risks, free ear protectors, adapted to the public so including, here also, children. Areas of auditory rest and periods of pauses : important. French ministry of Health, on the internet site : 30 mn every 2 hours or 10 mn every 45 mn.

- The complexity of exclusions in point 2 to 6 **(Record, display, inform, free ear protectors, periods and areas of rest,...)** should suggest a labellisation with clear pictograms, for the public anticipating the obligations or non obligations of the venues. For example : Earplugs not available vs Loud instruments present : ex. drums in small venues. Unamplified but dangerous.



# Main Elements for Discussion (2)

Field problems have to be codified :

- It would be better with a clear obligation of the level indicators being seen by the public during the event.
- Distribution of earplugs in a noisy area (necessity of at least an explanation of their right insertion, or the simple but useful image of the umbrella under a strong rain)
- Specific messages to parents (and pregnant women)  
Ensure that children are in a suitable area. General agreement (health side) was :  
**under 6 years** : access to children is not recommended; **under 12 years** : suitable ear protection  
+ as much as possible areas respecting levels for children with dedicated reception staff.
- Confiscation of the "sound system" in case of recurrence seems offensive to the public but is intended to solve the problem of multiple police interventions and or multiple plaintiffs on the same event.
- Data retention is a key point but will only be mandatory for 6 months and ... will not be centralized !  
The creation of a database is necessary the technology is simple.
- State labelling of (really) musical earplugs which give more linear protection, as foam lowers too much the treble, but are more costly.



# And now ?

Being optimized in terms of frequency repartition and dynamics :

**A safer sound is a better sound.**

Why not set up a **(pedagogic) charter co-signed by the artists**, in addition of the technical manager and the organizers, to explain the obligations to be respected and the auditory risks incurred by the public ?

## **- Accompany the professionals:**

Costs : Some costs can't be eluded : some material investments, facilities, changes ... some improvements ask to change (long time) bad working habits that lasted for many years, education to learn better tuning of the sound system is necessary

**Fiscal incentives might help : tax deductions should facilitate the correct application of the text.**

**The « Zero risk » can not be achieved. An educational plan for hearing health, multi generational and starting from the youngest possible age remains a social emergency, in every country.**

## **No Law can work without Education**



# Thank you for your attention

No Law can work without Education

**Jean-Louis Horvilleur**



<http://www.Bruitparif.fr>  
<http://www.LaSemaineduSon.org>

<http://www.LesOreilles.com>  
<http://Blog.LesOreilles.com>



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