

AGENDA ITEM SUMMARY

DATE: \_\_\_\_\_ DEPARTMENT: Legal DEPT. HEAD SIGNATURE: \_\_\_\_\_

SUBJECT:

Noise Ordinance

AUTHORITY:  ID Code \_\_\_\_\_  IAR \_\_\_\_\_  City Ordinance/Code \_\_\_\_\_  
(IF APPLICABLE)

BACKGROUND/SUMMARY OF ALTERNATIVES CONSIDERED:

At a December, 2013 meeting, the Council, upon my suggestion, continued the public hearing on the proposed noise ordinance. Since that time, I have met with staff, reviewed ordinances from Boise, Twin Falls, McCall, Ketchum and Meridian and made revision to the noise ordinance. I was hoping to present a recommendation which had unanimous support of staff members but reasonable minds have a difference of opinion.

Here is a summary of the revisions in the attached ordinance:

- The ordinance regulates both indoor and outdoor sound.
- Sound is regulated by a special events permit, amplified sound permit and a park reservation.
- The ordinance allows the city to approve a special event for an occasional event of significant benefit to the community.
- As outlined in a matrix, decibel levels are also controlled in certain zoning districts in the evening and at night.
- The attached ordinance requires the decision maker to condition approval of a special use permit, amplified sound permit or park reservation with conditions limiting hours of use and sound level. The suggested sound level is 90 decibels measured at the property line.
- Indoor amplified sound will not be controlled by a permit. Instead, there will be a maximum sound limit as set forth in the matrix.
- The ordinance eliminates the need for an amplified sound permit for a school or rec district sporting event or for a government event.
- The definition of Government Event has been modified to events produced solely by a governmental entity.
- I eliminated any reference to Lions Park since it is out of Hailey and any police power ordinance can only govern property in Hailey.

I believe there are two unresolved staff issues. The first issue involves the extent of regulations. At one end of the spectrum we could require permits for any amplified noise event. At the other end of the spectrum we could establish maximum sound levels by ordinance but not require any permits. The ordinances from other Idaho municipalities were distinctly different. Based on my review, Hailey has the most regulations, while Ketchum was a relatively close second. The others were far less regulatory. The attached ordinance has not substantially changed the permitting requirements. I have also attached a chart which summarizes the Hailey permitting process based on the attached ordinance.

The second issue is whether we should create decibel levels in various zoning districts. Ketchum's ordinance has a matrix with different decibel levels in different zoning districts at different times. I developed a similar matrix. After considerable debate, residential zones were eliminated and there is no level set between 7 a.m. and 7 p.m.

Ned



PERMITS

EVENTS	SPECIAL EVENT PERMIT				AMPLIFIED SOUND PERMIT				PARK RESERVATION			
	Decision Maker	Conditions		dB	Decision Maker	Conditions		dB	Decision Maker	Conditions		dB
		Hours				Hours				Hours		
Greater than 250 People												
• Standard <sup>1</sup>	City Council	10 a.m. – 10 p.m.		90dB								
• > 1,500 People <sup>2</sup>	City Council	10 a.m. – 11 p.m.		90dB								
• Extraordinary <sup>3</sup>	City Council	TBD		TBD								
Street Closure												
• < 250 People <sup>4</sup>	Administrator	10 a.m. – 10 p.m.		90dB								
• Standard <sup>5</sup>	City Council	10 a.m. – 10 p.m.		90dB								
• > 1,500 People <sup>6</sup>	City Council	10 a.m. – 11 p.m.		90dB								
• Extraordinary <sup>7</sup>	City Council	TBD		TBD								
Business Zoned Property												
• < 250 People												
▪ Outdoor <sup>8</sup>					Chief of Police	10 a.m. – 10 p.m.		90 dB				
▪ Indoor <sup>9</sup>					Exempt							
• Park (with Amplified Sound)									Administrator	10 a.m. – dusk		90dB
1 • < 250 People <sup>10</sup>												
10 • > 250 People												
3 • Standard <sup>11</sup>	City Council	10 a.m. – 10 p.m.		90 dB								
1 • > 1,500 People <sup>12</sup>	City Council	10 a.m. – 11 p.m.		90 dB								
1 • Extraordinary <sup>13</sup>	City Council	TBD		TBD								

<sup>1</sup> 12.14.030(B)(2) and 9.04.030(A)(1)  
<sup>2</sup> 12.14.030(B)(2) and 9.04.030(A)(2)  
<sup>3</sup> 12.14.030(B)(2) and 9.04.030(A)(3)  
<sup>4</sup> 12.14.030(B)(1) and 12.14.040(B)(1)  
<sup>5</sup> 12.14.030(B)(1) and 9.04.030(A)(1)  
<sup>6</sup> 12.14.030(B)(1) and 9.04.030(A)(2)  
<sup>7</sup> 12.04.030(B)(1) and 9.04.030(A)(3)  
<sup>8</sup> 9.04.030(A) and (C)  
<sup>9</sup> 9.04.030(B)(5) – no permit required but noise cannot exceed 90 dB between 7:00 p.m. and 10:00 p.m. and 65 dB between 10:00 p.m. and 7:00 a.m.  
<sup>10</sup> 12.12.040(B)(1)(a)  
<sup>11</sup> 12.12.040(A) and 9.04.030(A)(1)  
<sup>12</sup> 12.12.040(A) and 9.04.030(A)(2)  
<sup>13</sup> 12.12.040(A) and 9.04.030(A)(3)

HAILEY ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE OF THE CITY OF HAILEY, IDAHO, BY AMENDING HAILEY MUNICIPAL CODE BY AMENDING SECTION 9.04.030 TO LIMIT THE HOURS OF AMPLIFIED SOUND, TO ENUMERATE LOUD, DISTURBING AND UNNECESSARY NOISES AND TO REGULATE INDOOR AND OUTDOOR AMPLIFIED SOUND; BY AMENDING SECTION 12.12.040 TO ELIMINATE LIONS PARK FROM THE REGULATIONS OF CHAPTER 12.12 AND TO ADD CONDITIONS FOR HOURS AND DECIBEL LEVELS OF AMPLIFIED SOUND FOR A PARK RESERVATION; BY AMENDING SECTION 12.14.020 TO REVISE THE DEFINITION OF GOVERNMENT EVENTS; BY AMENDING SECTION 12.14.080 TO ADD CONDITIONS FOR HOURS AND DECIBEL LEVELS OF AMPLIFIED SOUND FOR A SPECIAL EVENT PERMIT; BY PROVIDING FOR A SEVERABILITY CLAUSE; BY PROVIDING FOR A REPEALER CLAUSE; AND BY PROVIDING FOR THE EFFECTIVE DATE OF THIS ORDINANCE.

WHEREAS, the Mayor and the City Council of the City of Hailey wish to make the City of Hailey an event friendly place while maintaining public safety and residential quality of life;

WHEREAS, to promote the peace and quiet of neighborhoods, the Mayor and the City Council believe it is necessary to regulate both indoor and outdoor amplified sound; and

WHEREAS, the Mayor and City Council find that an amendment to the amplified sound permit regulations will further the public health, safety and general welfare.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF HAILEY, IDAHO, AS FOLLOWS:

**Section 1.** Section 9.04.030 of the Hailey Municipal Code is amended by the deletion of the stricken language and the addition of the underlined language as follows:

9.04.030 Noise.

A. Except as otherwise provided herein, it is unlawful for any person to make, create, continue or cause to be made, created or continued, any loud or unnecessary noise, regardless whether the source of the noise occurs inside or outside of a building, which noise disturbs or injures others within the limits of the city, or which adversely affects the comfort, health, peace or safety of others within the limits of the city.

1. ~~Outdoor~~ Amplified sound may be permitted with an approved Special Events permit, an approved park reservation or an approved amplified sound permit. ~~Permitted outdoor~~ provided the amplified sound shall be limited to the hours between 10:00 a.m. and 10:00 p.m.

2. Amplified sound may be permitted with an approved Special Events permit for an event expected to attract more than 1500 people at any time in City Parks as defined by Section 12.14.020 of the Hailey Municipal Code, and ~~between 10:00 a.m. and 11:30~~

~~p.m. in the Business (B) zoning district, and between 10:00 a.m. and midnight at Hailey's multi-purpose arena provided the amplified sound shall be limited to the hours between 10:00 a.m. and 11:00 p.m.~~

3. Amplified sound may be permitted with an approved Special Event permit for an occasional event determined to be of significant benefit to the community, in which case the City may condition approval on the use of amplified sound during limited hours deemed appropriate based on the event and proximity to neighborhoods.

B. Except as otherwise provided herein, the following acts are declared to constitute the making of loud, disturbing and unnecessary noises in violation of this ~~s~~Section 9.04.030, but the enumeration contained in this subsection shall not be deemed to be exclusive:

1. Radios, Phonographs, Loudspeakers and Sound Amplifiers. The using, playing or operating, or permitting the playing, using or operating, of any radio, television, musical instrument, phonograph, loudspeaker, sound amplifier, or other machine or device for the production or reproduction of sound in such a manner as to disturb the peace, quiet and comfort of neighboring residents or inhabitants, including the projection of volume or sound louder than is necessary for the hearing of the person or persons in a building or vehicle in which such machine or device is operated. The operation of any such radio, television, musical instrument, phonograph, loudspeaker, sound amplifier, or other machine or device in such a manner as to be plainly audible at a distance of fifty feet (50') from the property line of any property where the same is located, or at a distance of fifty feet (50') from any vehicle in which the same is located, shall be prima facie evidence of violation of this section, except with an approved special event permit, an approved park reservation permit or an approved amplified sound permit;.

2. Building and Site Construction, Alteration, Demolition, Repair and Maintenance. The construction, including excavation, of new buildings and the demolition, alteration or repair of any existing building, except between the hours of seven a.m. and seven p.m. on weekdays and eight a.m. and seven p.m. on Saturdays and nine a.m. to seven p.m. on Sundays, except in cases where urgent necessity in the interest of public health and safety has been demonstrated to the city administrator and except sounds emitted by snow removal and yard maintenance equipment in operation;.

3. Pile Drivers, Hammers, Etc. The operation of any pile driver, pneumatic hammer, derrick, ram, or electric hoist, the use of which involves loud or unusual noise, and blasting or any other use of explosives, except between the hours of seven a.m. and seven p.m. Monday through Friday, except in cases where urgent necessity in the interest of public health and safety has been demonstrated to the city administrator;.

4. Animals. The keeping of any animal under circumstances where resulting frequent or long, continuous noise disturbs the peace, comfort or repose of other persons in the vicinity where the animal is kept.

5. Unless otherwise permitted pursuant to an approved special event permit, amplified sound permit or park reservation, noise in excess of the following levels as measured at the property line or at the party wall between the units (if the property consists of multiple apartment units) in the following zoning districts as determined by the Hailey Zoning Ordinance within the city during the following times:

Zoning District	Nighttime 10:00 p.m. to 7:00 a.m.		Evening 7:00 p.m. to 10:00 p.m.
LI, TI, SCI	65 dB		65 dB
B, LB	65 dB		90 dB

C. An outdoor amplified sound permit is required for those events where amplified sound is located outside of an enclosed building.

1. An outdoor amplified sound permit application must be completed and filed with the city five (5) business days prior to the event date. An outdoor amplified sound permit may be administratively approved after an applicant submits the following information on a form provided by the city.

- a. the name, address, and telephone number of the applicant;
- b. the address of the location of the property where the amplified sound will be generated;
- c. the maximum decibel level expected to be generated;
- d. the time during which the sound equipment will be used;
- e. an application fee, if established by separate resolution; and
- f. a statement that the applicant has obtained a copy of the applicable requirements of this chapter and agrees to comply with all applicable requirements.

2. An outdoor amplified sound permit may be administratively approved upon finding that the requirements of this chapter have been met.

3. Approval of Permit. The Chief of Police or his/her designee shall approve the application unless one of the following finding are made:

- a. Use of the equipment would constitute a detriment to traffic safety;
- b. The issuance of the permit would be otherwise detrimental to the public health, safety or welfare;
- c. The issuance of the permit will substantially interfere with the peace and quiet of the neighborhood or the community;
- d. The applicant would violate the provisions of this Code or any other law.

4. Upon approval of an outdoor amplified sound permit a Hailey Police officer may visit the property on the day of set up of the amplified sound equipment to measure the decibel level emitted and mark the maximum decibel level permitted on the equipment.

5. The Chief of Police shall grant an amplified sound permit with the minimum conditions that any amplified sound shall be limited between 10:00 a.m. and 10:00 p.m. and that any amplified sound shall not exceed ninety (90) dB measured at the property line at any time during the event.

The decibel level shall not exceed ninety (90) dB measured at the property line at any time during the event.

6. Disapproval of Permit. In the event the permit application is not approved, the Chief of Police or his designee shall state the reason(s) for such in writing and provide the applicant with the written statement.

7. Right of Appeal. Any person whose permit application is denied may appeal to the City Council within ten (10) calendar days from the date of notification of decision.

D. Penalties. Any person who violates any provision of this section shall, upon conviction, be guilty of a misdemeanor and shall be subject to a fine not exceeding three hundred dollars, imprisonment in the county jail for a period not exceeding thirty days, or both such fine and imprisonment.

**Section 2.** Section 12.12.040 of the Hailey Municipal Code is amended by the deletion of the stricken language and the addition of the underlined language as follows:

12.12.040 Reservation of City Parks.

A. Applicability. Reservation for the exclusive use of a City Park or a portion thereof, for gatherings of less than 250 people shall require the prior issuance of a park reservation. For gatherings that are reasonably expected to attract 250 or more people, the procedures and requirements of Chapter 12.14 of the Hailey Municipal Code shall apply instead.

1. Hop Porter, and McKercher ~~and Lions~~ Parks shall be kept available for special events, defined and administered pursuant to Chapter 12.14, on the Friday, Saturday and Sunday of the following weekends of each year.

a. Memorial Day

b. The weekend closest to July Fourth. If July 4<sup>th</sup> is on a Tuesday the weekend before is reserved. If July 4<sup>th</sup> is on a Wednesday or Thursday then the weekend after is reserved.

c. The first weekend of August for the Northern Rockies Folk Festival.

d. Labor Day

e. The second weekend in October for the Trailing of the Sheep Festival

2. Deerfield, Foxmoor, Curtis, the Skate Park, Balmoral, and Echo Hill Parks are neighborhood parks that should remain available for use by the general public and shall not be reserved for exclusive use except with an approved special events application pursuant to Chapter 12.14.

3. Jimmy's Garden and E. W. Fox Demonstration Garden shall not be reserved for exclusive use.

4. Sports fields at Balmoral, Keefer, ~~Lions~~ and McKercher Parks shall be available for recreational league use through a Seasonal Event permit.

5. Reservation of Deerfield and Foxmoor Parks for Seasonal Events shall be prohibited due to the limited parking available.

B. Administration. The Administrator of this Chapter is responsible for the coordination of any applicable departmental review and issuance of a park reservation.

1. Authority of Administrator.

a. For events that are reasonably expected to attract less than 250 participants, the Administrator has the authority to issue a park reservation and shall comply with the provisions of this Chapter 12.12.

b. For events that are reasonably expected to attract 250 or more people, the applicant shall comply with Chapter 12.14 of the Hailey Municipal Code.

C. Application Procedure.

1. An application for a park reservation shall be signed by the applicant on a form provided by the Administrator and shall be filed with the Administrator.

2. At a minimum, the applicant shall provide, on a form provided by the Administrator, sufficient information to address the requirements set forth in this Chapter.

3. Except as otherwise provided herein, all park reservation applications shall be issued according to date received. Requests for parks use permits received first shall have priority over applications received later. All park reservation applications received during the same business day shall be considered to have been received at the same time.

a. If Hop Porter, ~~or McKercher~~ ~~or Lions~~ Park is not reserved for a Special Event on one of the weekends listed in 12.12.040(A)(1), then a park reservation application may be submitted to reserve the park on one of the weekends listed in 12.12.040(A)(1) not more than fourteen (14) calendar days prior to the start of the desired reservation date.

4. The Administrator shall issue a park reservation with the minimum conditions that any amplified sound shall be limited between 10:00 a.m. and dusk and that any amplified sound shall not exceed ninety (90) dB measured at the property line at any time during the event.

D. Fees.

Except as otherwise provided herein, the applicant shall pay a non-refundable reservation fee, in addition to any applicable per diem or service fees for the use of the park, as established by resolution of the City Council, at the time of the filing of the park reservation application.

1. An individual or group may apply with the city to adopt-a-park. The following minimum requirements shall be met in accordance with the applicable park maintenance standards:

- a) spring and/or fall clean-up
- b) spring and/or fall fertilizing
- c) weed control
- d) weekly mowing

2. If an adopt-a-park application is approved the city will recognize the individual or group on the applicable park sign and waive park reservation fees as follows for the same individual or group named on the adopt-a-park application:

a. One reservation for one hundred (100) to two hundred forty-nine (249) people.



3. An individual or group may apply with the city for a waiver of the Seasonal Use Fee provided the following minimum requirements are met:
  - a. 10 hours of service in the park
  - b. A proposed plan of the service to be performed presented to the Parks & Lands Board for recommendation to the City Council
  - c. Adequate performance in previous years if this request is made by the same individual or group as the prior year.

E. Compliance with the terms and requirements of this section shall exempt the applicant or organizer of the event subject to such requirements from the provision and requirements of Chapter 5.16 of the Hailey Municipal Code.

**Section 3.** Section 12.14.020 of the Hailey Municipal Code is amended by addition of the underlined language in definition of "Government Event", as follows:

"Government Event" means an event solely produced by a government on its property and solely administrated under its sole authority.

**Section 4.** Section 12.14.080 of the Hailey Municipal Code is amended by the addition of the underlined language as follows:

12.14.080     Standards.

A. A Special Event permit may be issued after the following findings are made by the Administrator.

1. The Special Event will in fact qualify as a Special Event.
2. The Special Event meets all of the applicable requirements set forth in §12.14.040.
3. All required fees and deposits have been paid.

B. Following an evaluation of the above requirements and standards, the application may be approved, conditionally approved or denied. Conditions may be imposed that are deemed to be reasonably related to the above standards and that will promote the public health, safety and general welfare. The minimum conditions shall include conditions i) that any amplified sound shall not exceed ninety (90) dB measured at the property line at any time during the event and that any amplified sound shall be limited between 10:00 a.m. and 10:00 p.m. for events described in Section 9.04.030(A)(1), or ii) that any amplified sound shall not exceed ninety (90) dB measured at the property line at any time during the event and that any amplified sound shall be limited between 10:00 a.m. and 11:00 p.m. for events described in Section 9.04.030(A)(2), or iii) that any amplified sound shall not exceed a reasonable decibel level measured at the property line at any time during the event and that any amplified sound shall be limited to times deemed appropriate and commensurate for events described in Section 9.04.030(A)(3).

**Section 5. Severability Clause.** If any section, paragraph, sentence or provision hereof or the application thereof to any particular circumstances shall ever be held invalid or

unenforceable, such holding shall not affect the remainder hereof, which shall continue in full force and effect and applicable to all circumstances to which it may validly apply.

**Section 6. Repealer Clause.** All ordinances or parts thereof in conflict herewith are hereby repealed and rescinded.

**Section 7. Effective Date.** This Ordinance shall be in full force and effect after its passage, approval and publication according to law.

PASSED AND ADOPTED BY THE HAILEY CITY COUNCIL and approved by the Mayor this \_\_\_\_\_ day of \_\_\_\_\_ 2014.

\_\_\_\_\_  
Fritz X. Haemmerle, Mayor  
City of Hailey

ATTEST:

\_\_\_\_\_  
Mary Cone, City Clerk

## Heather Dawson

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**From:** Lagergren@cs.com  
**Sent:** Wednesday, January 29, 2014 4:57 PM  
**To:** Heather Dawson  
**Subject:** Safe Noise levels to avoid hearing damage  
**Attachments:** ChangingStandard-SafeNoiseLevels.ZIP

Hello Heather, Mayor and City Council Members,

### POINT #1

In order to avoid damaging the hearing of Hailey's citizens, especially young children and young adults, the Noise Ordinance allowable limit should be reduced much lower than 90 dB.

Attached are 2 notepad documents with websites and data to support much **lower** than 90 dB noise levels to avoid damaging hearing, (more like 70 to 85 dB).

Please - first read my text document called **Changing Standards-Safe Noise Levels. txt**.

**The website copied here notes that the OSHA standard that used 90 dB was lobbied by corporations' bottom line to allow for greater permissible noise levels in the work place.**

Then, there is more data supporting lower dB levels in my **Safe Noise Levels. txt** document where I copied more website info.

**Please look for items I have marked ((( See \*\*\* below))).**

**Find the \*\*\*\* for important data recommending much lower dB levels by organizations such as the World Health Organization WHO, or the EPA or the CDC Centers for Disease Control, etc.**

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### POINT #2

This issue concerns noise levels at the source of the noise - not at the property line or any other distance away from the source of the noise.

What ever dB level is finally chosen by the City, it must be measured at the source of the noise, such as at speakers for music events, or at movie speakers in a movie house. This insures that the noise will not harm a person near the source of noise.

Please pay attention to the scientific data in the attached website info that explains how the damage is caused to the hearing from being exposed to excessive noise.

Otherwise the City would be liable to be sued by a person whose hearing may become damaged from being exposed to excessive loudness.

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### POINT #3

In regard to the question of whether the City should dictate acceptable noise levels, please consider the following examples where the City has mandated law to try to protect citizens from being harmed:

1. Bicyclists must walk bikes in cross walks across busy streets.
2. Speed bumps and speed limits are utilized to keep neighborhoods safe from speeding cars.
3. Fences must be limited to certain heights at corner intersection lots, to help keep visibility clear.
4. Alleys must be kept clear for fire and emergency access.

The City also has made ordinances that influence esthetic issues such as:

1. Lighting design limits, to try to keep harsh lights from bothering people.
  2. Set back limits for buildings, to try to get people to put garages in their back yard instead of near the street.
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In conclusion, we ask you to please be responsible and proactive to reduce the allowable noise levels for concerts and movie houses to be at most 80 to 85 dB measured at the source of the noise. We love music concerts and movies, but have been forced to forego attending many due to the fact that the loudness has become so harmful.

Please help make Hailey a safe place for our ears again.

Sincerely,

GINNA and Ken Lagergren

## SafeNoiseLevels

## SAFE NOISE LEVELS

1)

<http://www.cdc.gov/niosh/topics/noise/noisemeter.html>

Centers for Disease Control and Prevention

"Exposure > 85 dB may cause hearing loss"

2)

[www.dangerousdecibels.org/education/information-center/noise-induced-hearing-loss/](http://www.dangerousdecibels.org/education/information-center/noise-induced-hearing-loss/)

Noise Induced Hearing Loss(NIHL)

(( ( see \*\*\* below)))

"Of the roughly 40 million Americans suffering from hearing loss, 10 million can be attributed to noise-induced hearing loss (NIHL). NIHL can be caused by a one-time exposure to loud sound as well as by repeated exposure to sounds at various loudness levels over an extended period of time. Damage happens to the microscopic hair cells found inside the cochlea. These cells respond to mechanical sound vibrations by sending an electrical signal to the auditory nerve. Different groups of hair cells are responsible for different frequencies (rate of vibrations). The healthy human ear can hear frequencies ranging from 20Hz to 20,000 Hz. Over time, the hair cell's hair-like stereocilia may get damaged or broken. If enough of them are damaged, hearing loss results. The high frequency area of the cochlea is often damaged by loud sound.

Sound pressure is measured in decibels (dB). Like a temperature scale, the decibel scale goes below zero. The average person can hear sounds down to about 0 dB, the level of rustling leaves. Some people with very good hearing can hear sounds down to -15 dB.

\*\*\*If a sound reaches 85 dB or stronger, it can cause permanent damage to your hearing. The amount of time you listen to a sound affects how much damage it will cause. The quieter the sound, the longer you can listen to it safely. If the sound is very quiet, it will not cause damage even if you listen to it for a very long time; however, exposure to some common sounds can cause permanent damage. With extended exposure, noises that reach a decibel level of 85 can cause permanent damage to the hair cells in the inner ear, leading to hearing loss."

3)

[www.lowertheboom.org/trice/safedbllevels.htm](http://www.lowertheboom.org/trice/safedbllevels.htm)

Safe dB Levels

(( ( see \*\*\* below)))

For the protection of public health, the Environmental Protection Agency proposed these levels:

Neighborhoods - During waking hours 55 dB  
Neighborhoods - During sleeping hours 45 dB  
Classrooms - during teaching sessions 35 dB  
Hospitals - during waking hours 45 dB  
Hospitals - during sleeping hours 35 dB

For the workplace, the Occupational Safety and Health Administration (OSHA) proposed these permissible noise exposure times (I have included examples of sounds at various levels for easier understanding):

## SafeNoiseLevels

\*\*\*85 dB and higher - prolonged exposure will result in hearing loss\*\*\*  
90 dBA - no more than 8 hours per day (examples - lawn mower, truck traffic, hair dryer)  
95 dBA - no more than 4 hours per day  
100 dBA - no more than 2 hours per day (example - chain saw)  
105 dBA - no more than 1 hour per day  
110 dBA - no more than ½ hour per day  
115 dBA - no more than ¼ hour per day (preferably less)  
140 dBA - NO EXPOSURE TO IMPACT OR IMPULSE NOISE ABOVE THIS LEVEL (examples - gunshot blast, jet plane at takeoff)

\*\*\*The Academy of Pediatrics and the National Campaign for Hearing Health states 85 dB is the threshold for dangerous levels of noise.\*\*\*

The National Campaign for Hearing Health's Toxic Noise Guidelines (exposure times and decibel levels that cause hearing loss)

85 dB 8-hour period  
85 - 90 dB 2-hour period  
90 - 100 dB 1 to 2-hour period  
100 - 110 between 2 and 15 minutes  
110 - 120 less than 30 seconds  
130 dB ANY EXPOSURE WILL RESULT IN PERMANENT HEARING LOSS

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4)  
[www.digicarehearing.com/im-here-to-learn-more/our-library/hearing-health/item/90-hearing-loss-prevention-how-much-sound-is-too-much](http://www.digicarehearing.com/im-here-to-learn-more/our-library/hearing-health/item/90-hearing-loss-prevention-how-much-sound-is-too-much)

Hearing Loss Prevention: How Much Sound Is Too Much?  
By Dr. Max S. Chartrand Ph.D.

((See \*\*\*\*\* below))

An overview of the kinds of damage that can be done to ears in various noise situations.

You go to a rock concert, mega-sporting event, or some other high decibel activity. At the door, an usher hands out earplugs to those who want them. Home safe, right? Wrong! You might partially protect your ears from the harshest effects of death-defying sound pressures. But what about the rest of the body?

Contrary to conventional wisdom, the ears are only ONE part of the body that needs protecting in such environments. Not much of a favor has been served, then, when one wears earplugs to, say, a rock concert, and then the kidneys, liver, spleen, and pancreas virtually shut down because of 90 minutes of blasting at 120 decibels. Just 10 decibels more would kill the person!

Also, contrary to conventional wisdom, severely hearing impaired individuals do not have better physiological tolerance for high sound pressure levels than normal hearing subjects. The FDA-mandated warning at SSPL90 at or higher than 132dB means that at that point one is risking serious damage to their health and well-being. Certainly, if the ears were the only part of the body to receive such high-pressure levels, what we may end up experiencing by escalating sound pressure levels in hearing aids are:

1. Declining eardrum compliance, where tympanograms go progressively into shallow A.
2. Thickened scar tissue, requiring more and more amplification to even realize most comfortable level. At some point, comfort levels and discomfort levels coincide, where one no longer has ANY dynamic range.
3. Destruction of the ganglia cells of the cochlea and auditory nerve.
4. Diplacusis, or cochlear distortions at high amplification levels so that the signal being heard in one ear is totally different than the signal in the other ear.

### Safe Noise Levels

5. Because of amplification-induced noise damage, a given ear may not be able to benefit from cochlear implantation when one finally reaches candidacy criteria.  
6. Other damage may occur, including at the central auditory level.  
Professionals and patients should be aware of these limitations, and resist the temptation of over-reaching with more and more amplification.

Here are some typical situations where one should be "en garde" and ready to advise management in the goal of achieving safe sound pressure levels in various public situations:

\*\*\*\*\*1. Movie theatres typically, according to measurements made by the author, blast their feature productions at about 95-100dB SPL on the C-weighted scale. This far exceeds OSHA regulations for employees in the workplace, and should be considered a serious public health threat. If you attend such a movie, you should immediately make management aware that they are breaking the law and need to reduce average sound levels to 85dB or less.\*\*\*\*\*

2. Auto stereo firms routinely exceed safe sound pressures, and tend to glorify the higher decibels with slick advertising and pop culture. The public should rise up against this assault, primarily on the young, and demand that safety standards be observed.

3. Mega-sporting events, such as drag races, or even football, etc, far exceed safe sound levels. Changes in stadium/facility design, plus reduction of broadcasting public address systems can go far in making these situations safer to the public health.

4. Rock concerts that broadcast unsafe sound levels should be shut down and banned from the community.

5. Most speedboats and large motorcycles far exceed safe sound pressure levels, and should be required to be muffled to a safe level or banned from the public thoroughfares.

6. Large lawnmowers and some chainsaws also exceed what is safe for human ears. It should be a requirement of their use to wear earplugs.

7. Airport noise has become a menace to nearby neighborhoods, causing sleep deprivation, neurological and physical illness, and, of course, hearing loss. Since these are regulated by national regulatory agencies, it is imperative that uniform standards of sound control be implemented. Since the worst sound pressures occur below 500Hz (very low frequencies), such standards should be set on the C-weighted scale, not the current A-weighted scale.

Ignorance of the above does not minimize the danger to the public health, nor the lasting damage to exposed individuals. Millions of Americans are suffering a number of ailments as a result of the above assaults on their bodies:

- Permanent hearing loss
- Permanent Tinnitus (ringing of the ears)
- Increases in tendency toward diabetes mellitus II and renal failure
- Increases in liver disease
- Increases in cardiovascular disease
- Brain damage and dementias of all kinds
- Neurological disorders of all types

Below is a chart of commonly occurring sounds and their respective sound pressure levels.

#### ESTIMATED SOUND PRESSURES IN SPL dB IN VARIOUS SOUND ENVIRONMENTS:

- 140dB/30 meters from jet aircraft during take-off (Eventual Deafness, Brain Damage Assured)
- 130dB/Threshold of pain, absolute cellular limit of human body (Eventual Deafness, Brain Damage)
- 120dB/Rock Concert, Dragstrip (Permanent Hearing Loss assured in mids and highs)
- 110dB/Chainsaw (Permanent Hearing Loss Assured in High Frequencies)
- 100dB/Movie theatre, discoteque, night club (Future Loss assured in High Frequencies)
- 90dB/Lawnmower, speedboat, motorcycle (High Frequency Loss without ear protection)
- 80dB/Curbside on busy street

#### SafeNoiseLevels

- 70dB/Cocktail party, restaurant noise
- 60dB/Conversational speech
- 50dB/Daytime home environment
- 40dB/Nighttime home environment
- 30dB/Sound booth, anechoic television studio
- 20dB/Recording studio
- 10dB/Human hearing threshold average
- 0dB/Zero SPL, level at which most of animal kingdom hears



Changing Standard Safe Noise Levels

CHANGING STANDARDS FOR SAFE NOISE LEVELS

(( ( see \*\*\*\* below )) )

[www.digicarehearing.com/im-here-to-learn-more/our-library/hearing-health/item/90-hearing-loss-prevention-how-much-sound-is-too-much](http://www.digicarehearing.com/im-here-to-learn-more/our-library/hearing-health/item/90-hearing-loss-prevention-how-much-sound-is-too-much)

Noise-induced Hearing Loss (NIHL)  
What Are Safe Sound Levels?

by Neil Bauman, Ph.D.

A man wrote:

While doing research I have found that many web sites have different views on safe exposure times to loud sounds. Some web sites will say that you should not be exposed to noises that exceed 80 dB for more than 8 hours, other say 85 dB and some even say 90 dB.

I don't know which one is right. Do you have, or know where I could get, a reliable 'safe exposure time' table?

Answer:

I can well understand your confusion based on reading the various links you sent.

Part of the confusion is between what researchers currently say is damaging levels of sound, and what the politicians/bean counters actually write into the Occupational Safety and Health Administration (OSHA) regulations, and how often they update these regulations.

In the past, it was considered that 90 dB was the safe limit for an 8-hour day's exposure to sound. Then they cut the time in half for every 5 dB above that level.

The problem is that sound levels double for each 3 dB increase, so this wasn't accurate in the first place. It looked good on paper, and was easy to calculate, but it did not reflect reality.

Later, researchers discovered that 90 dB was still causing hearing loss, so OSHA set the regulations lower to 85 dB. But this time they got the incremental business correct. So for every 3 dB increase, the safe exposure time is halved.

Each state (and each province in Canada) sets their own regulations. As a result, some use the older standard, and some the newer one. For example, Ontario in Canada just last month changed their regulations down from 90 dB to 85 dB. It can take years for the government departments to keep up with the findings of the researchers.

The current state of affairs is that "they" consider it safe for your ears to be exposed up to 80 dB of sound 24 hours a day. Next year, "they" may find that this is still too high and drop it some more.

You see, everyone's ears are different. Some ears are more "robust" than others, and thus can stand higher levels of sound without damage. I think they are trying to set the safe levels for all ears, not just the robust ones.

\*\*\*\*Therefore, if you keep the sound level down to well below 80 dB (the Environmental Protection Agency [EPA] and the World Health Organization [WHO] recommend a maximum of 70 dB for continuous exposure), the feeling is that you will not damage your hearing at all.\*\*\*\*

When looking at the 80 dB as a base and 85 dB as a base, you need to realize that these are actually these are one and the same thing since they use different time limits. Those that start at 80 dB use 24 hrs as their time limit. Those that use 85 dB use 8 hours as their time limit—essentially the same thing. Here's why.

### ChangingStandard-SafeNoiseLevels

If you take 85 dB for 8 hours, then in would be 82 dB for 16 hours and 79 dB for 32 hours. So interpolating, 80 dB is roughly 24 hours. (If you want to be technical, it is actually 25 hours and 24 minutes.)

Below are the supposedly safe exposure times (if you take the 80 dB level at 24 hours/85 dB at 8 hours as your base). For each 3 dB increase in sound level, you reduce the time by half. So here is how this time/loudness scale looks:

80 dB	24 hrs.
82 dB	16 hrs.
85 dB	8 hrs.
88 dB	4 hrs.
91 dB	2 hrs.
94 dB	1 hr.
97 dB	30 mins.
100 dB	15 mins.
103 dB	8 mins.
106 dB	4 mins.
109 dB	2 mins.
112 dB	1 min.
115 dB	30 secs.
118 dB	15 secs.
121 dB	8 secs.
124 dB	4 secs.
127 dB	2 secs.
130 dB	1 sec.

According to the OSHA, unprotected exposure to continuous noise above 115 dB of any duration is not permitted.

\*\*\*\*The EPA/WHO scale looks like this--much more conservative.\*\*\*\*

70 dB	24 hrs.
73 dB	12 hrs.
76 dB	6 hrs.
79 dB	3 hrs.
82 dB	1.5 hrs.
85 dB	45 mins.
88 dB	22 mins.
91 dB	11 mins.
94 dB	6 mins.
97 dB	3 mins.
100 dB	1.5 mins.
103 dB	45 secs.
105 dB	22 secs.
107 dB	11 secs.
110 dB	6 secs.
113 dB	3 secs.
116 dB	1.5 secs.
119 dB	<1 sec.

(In all cases, I have rounded the numbers, so the precise figures are a bit different--but this is so much easier to read and understand.)

The thing a person should ask themselves is simply, "why stay as close to the ear-damaging line as possible, rather than stay as far away from it as possible?" This should be especially significant in light of the fact that these "safe levels" keep dropping as more research is done.

To further complicate matters, safe sound levels are affected by certain pollutants in the air, especially organic solvents (and even tobacco smoke). For example, when the pollutants in factories and mills are kept at the "safe" OSHA level and the

#### Changing Standard-Safe Noise Levels

noise is kept at the "safe" OSHA level, they found that hearing loss was still occurring. Thus, in the presence of such pollutants, the safe sound levels must be dropped even further.

Another factor to consider is that these are average sound levels. This means that at any given time there may be very loud ear-damaging sounds, and then the rest of the time, lesser sound levels, but the "average" says it is safe.

Much better to wear sound dosimeters that record the actual sound levels as they vary from moment to moment, and use that to calculate the safe exposure time.

I suggest that you use conservative figures in calculating safe sound levels. At the very least, use the one with the base of 80 dB for 24 hours, and go from there. However, recognize that if you have particularly sensitive ears, even this may not be enough, especially if there are certain pollutants in the air. Thus to be really safe, you may want to use the EPA/WHO base of 70 dB for 24 hours and go from there.

As you can see, it is not simple to nail down a safe standard that works for everyone in all situations. So to be safe, protect your ears more, rather than seeing how close to the line you can go.

