



THE BELT RAILWAY COMPANY OF CHICAGO

ENGINEERING NOTICE

#2018-001

Effective 0001, Monday, January 1, 2018

To: ALL CONCERNED

Subject: BRC Hearing Conservation Program Required Posting (Engineering)

This Notice governs all crafts working in the Engineering Department

Purpose:

This notice provides employee information about the Belt Railway of Chicago's Hearing Conservation Program as required under 49 CFR Part 227.

The BRC is required to post a copy of the railroad's Hearing Conservation Program for employee reference. This notice is distributed to comply with those requirements.

Further information on the railroad's hearing conservation program can be obtained from the Director, Rules and Compliance.

M. A. Ferguson
Chief Engineer
Belt Railway Company of Chicago



The Belt Railway Company of Chicago

Hearing Conservation Program

49 CFR Part 227

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SECTION 1: INTRODUCTION

Prolonged exposure to noise above certain levels can result in ear damage and hearing loss in workers. Noise-induced hearing loss can be caused by exposure to high-level noise both on and off the job, and without proper noise safety precautions and monitoring, noise-induced hearing loss in workers may worsen over time and may result in permanent damage.

1.A: Policy

The primary goal of the Belt Railway's Hearing Conservation Program is to comply with 49 CFR Part 227, Occupational Noise Exposure for Railroad Operating Employees, and to provide a safe working environment in regards to noise levels for employees covered under this program. The elements of this program will include:

- 1.) Locomotives will be surveyed to determine noise levels and to identify potentially hazardous noise levels. This program assumes that noise levels are sufficient (at or above the Action Level) to require a hearing conservation program.
- 2.) Periodic hearing testing will be conducted to monitor the effectiveness of the hearing conservation program. Baseline tests are required on all affected employees, and periodic follow up tests shall be conducted at least once every three years. Employees will be offered annual audiograms.
- 3.) Audiometric test results will be reviewed by an appropriately certified technician or physician to compare periodic test results against baseline test results in order to determine if a standard threshold shift (STS) has occurred.
- 4.) Workers will be trained in hearing and noise using a training program designed specifically for the elements outlined in the regulation. Employees must be trained within 6 months of hire, and re-trained at least once every three years. Training will be offered to employees annually.
- 5.) The railroad will maintain records as outlined in the regulation.

The Belt Railway is establishing this hearing conservation program to comply with the permissible noise exposure levels listed in Table A-1 of 49 CFR Part 227. Employee noise exposure shall be computed in accordance with the tables in Appendix A of 49 CFR Part 227 for the purposes of this hearing conservation program. When the listed sound levels are exceeded, the railroad may institute noise operational controls when feasible. If those controls fail to reduce sound levels to those listed in Table A-1, hearing protection devices will be provided to workers and used to reduce sound levels to an acceptable level. FRA requirements dictate that employees exposed to noise at or above the action-level, a time-weighted-average of 85dB, will be included in the hearing conservation program.

1.B: Responsible Parties

The following individual(s) are responsible for the railroad hearing conservation program:

Name: Harold T. Kirman

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SECTION 2: REQUIREMENTS AND RESPONSIBILITIES

2.A: Hearing Conservation Program Manager

The Hearing Conservation Program Manager is responsible for maintaining the hearing conservation program for the railroad, and will be responsible for the following program elements and requirements:

- 1.) Develop and implement a noise monitoring program and a railroad specific sampling strategy to determine whether any employee covered may be exposed to noise equal to or exceeding an 8-hour time-weighted average (TWA) of 85 dB or higher. Railroad supervisors and monitored employees will be notified of the results, which will also be sent to the railroad supervisors to be posted on site for a minimum of 30 days. The hearing conservation program manager may elect to contract a third party to develop a sampling strategy and perform the locomotive cab noise monitoring.
- 2.) Use a sampling strategy (whether created by the railroad or by a third party on behalf of the railroad) that identifies employees for inclusion in the hearing conservation program.
- 3.) Allow employees or their representatives (such as union representatives) the opportunity to observe any noise monitoring that is conducted.
- 4.) Implement the hearing conservation program for all employees exposed to noise at or above the action level (8-hour TWA of 85dB) and to employees that noise monitoring determines may be exposed to such levels.
- 5.) Provide employees with hearing protection devices when required and at no cost to the employees, and provide employees with advice regarding the types and levels of protection of hearing protection devices and how to wear and care for them.
- 6.) Establish an audiometric testing program and include all employees who are covered by the hearing conservation program. Baseline tests shall be conducted for new employees within 6 months of hire; 12 months if mobile test vans are used. For railroads with fewer than 400,000 annual employee hours, baselines must be obtained for all employees by February 26, 2010. Periodic audiograms must be offered to covered employees yearly, and must be obtained at least triennially. All tests will be provided at no cost to the employee.
- 7.) Verify that the testing facilities used for audiometric testing adequately meet the requirements of the regulation.
- 8.) Oversee the actions of the contractor retained by the railroad to conduct testing to assure compliance with the provisions of the regulation.

Ensure that periodic audiograms are compared to baseline audiograms to determine if an STS has occurred, and to notify employees appropriately when an STS has occurred.

- 1.) Develop and provide training for employees that will educate them about hearing, noise, and hearing protection device use and care, in addition to other requirements. The training program will include all 11 elements required in section 227.119.
- 2.) Use noise operational controls, as technologically and economically feasible, to reduce employee sound level exposures to levels below those in Table A-1 of 49 CFR Part 227.
- 3.) Maintain all records as required.

2.B: Employees

Employees are responsible for ensuring that normal work procedures and conditions are followed during noise monitoring sessions so that results are representative. Employees are also responsible for wearing and maintaining hearing protection devices as instructed and required by their supervisors, and as required by the regulation. Employees enrolled in the hearing conservation program are responsible for participating in triennial hearing and noise training and completing the training and understanding it as best as possible. Employees enrolled in the HCP must receive triennial audiometric tests, and are responsible for avoiding high levels of non-occupational noise exposure during the 14-hour period preceding their audiometric test. Employees are also responsible for reading and understanding materials provided to them by the railroad regarding the regulation and the hearing conservation program.

SECTION 3: Noise Monitoring Program

3.A: Noise Measurements and Employee Exposure Assessments

In order to determine noise levels in the locomotive cabs, and employee exposures to noise as required by the regulation, noise monitoring will be performed to get a representative measurement of cab noise levels and operating employee exposures.

All noise monitoring must be conducted in accordance to the requirements and specifications outlined in 49 CFR Part 227, using established operating procedures and the proper required equipment.

Due to the confined space of locomotive cabs, and also due to the requirement that employees' exposure to noise outside of the cab be taken into consideration, the railroad will primarily utilize personal monitoring using dosimeters. Area sampling may still be used, however, the railroad believes that personal monitoring will yield more accurate information about employee exposures and cab noise levels.

Noise monitoring will be conducted to determine which employees will be required to be enrolled in the Hearing Conservation Program. Noise monitoring will also determine which types of locomotives may be prone to higher exposure levels, and also what locomotives or areas have exposure levels such that employees may not be required to use hearing protection devices.

The results of noise monitoring sessions will be used to determine if employees are exposed to noise levels exceeding the limit of 90 dB at an 8-hour TWA, and also to prevent employee exposure to continuous noise in excess of 115 dB(A) and to continuous noise greater than 115 dB(A) and equal to or less than 120 dB(A) in excess of 5 seconds for the total daily duration. The results of noise monitoring will also be utilized to enable the proper selection of hearing protection for employees.

3.B: Personnel Monitoring

To determine noise levels in the locomotive cabs and employee exposures during the work shift, the railroad or railroad representatives will use calibrated noise dosimeters meeting all requirements of the regulation. Employees being monitored will be fitted with a personal dosimeter at the beginning of their normal work shift, with the dosimeter microphone placed within the hearing zone of the employee. The dosimeter will be worn for the entire duration of the employee's work shift, and monitoring will be concluded at the end of their normal work shift. The railroad or the third party monitoring organization utilized by the railroad will download the data from the dosimeters, store the electronic file, and provide the monitored employees with the results of the monitoring as soon as possible. The railroad or monitoring organization will provide these results in a readable and easy to understand format, and will

also provide railroads with a document containing the results to be posted at the appropriate crew origination point for 30 days.

3.C: Area Monitoring

While the primary noise monitoring performed by the railroad or railroad representatives will be done using personal noise dosimeters, area surveys may still be utilized. For an area survey, measurement of noise levels will be recorded using a sound level meter meeting the requirements of the regulation. Area monitoring will be used to determine areas where hearing protection devices may not be required, and also areas where personnel monitoring using noise dosimeters may be needed. As 49 CFR Part 227 applies to employees whose primary noise exposure is in or around the locomotive cab, and other locations on the property.

3.D: Sampling Strategy

For the noise monitoring program, the railroad or railroad representative will develop a representative sampling strategy based on the site-specific jobs and operations of the railroad.

The railroad will take into account operating conditions, such as environment, terrain, shift length, locomotive type, number of affected employees, number of crossings, etc. when developing the sampling strategy. Having taken these factors into account, the railroad or the monitoring firm obtained by the railroad will develop a sampling strategy to determine which locations and locomotives will be monitored for noise levels.

3.E: Re-Monitoring

The railroad will obtain new monitoring results when conditions change sufficiently enough to merit re-monitoring, such as purchasing new locomotives, operating over new terrain, etc.

SECTION 4: Audiometric Testing Program

4.A: Audiometric Testing

The railroad is required to implement an audiometric (hearing) testing program for all employees enrolled in the hearing conservation program [employees exposed to noise at or above the action-level, an 8-hour TWA of 85 dB(A).]

Audiometric tests shall be performed at no cost to the employee, and shall be performed by an audiologist, otolaryngologist or a physician who has experience and expertise in hearing and hearing loss, or by a qualified technician. This section will refer to “the railroad doctor” – this does not necessarily mean a doctor who is employed by the railroad. It may be a company chief medical officer, a third party contracted doctor, a doctor at a local clinic, etc. The term is used broadly.

A baseline audiogram is the first hearing test an employee receives. Annual, triennial or periodic audiograms are compared to the baseline to see if there is a loss or change in hearing.

4.B: Testing Schedule

For employees enrolled in the hearing conservation program, audiometric testing must be performed according to the following schedule:

1. 'New Hires' – Employees hired after February 26, 2007 must have a valid baseline audiogram within 6 months of that employee's first tour of duty. If the railroad is using mobile test vans for audiometric testing, they must receive the baseline audiogram within 1 year of the new employee's first tour of duty.
2. Periodic Testing – Employees must be *offered* audiometric testing at least once each calendar year. The interval between the date offered to any employee for a test in a calendar year and the date offered in the subsequent calendar year shall be no more than 450 days and no less than 280 days. The railroad is *required* to have employees enrolled in the HCP take an audiometric test at least once every 1,095 days (3 years.)

4.C: Audiogram Evaluation & Comparison

For baseline audiograms performed prior to February 26, 2007, the railroad's doctor or physician will determine whether an audiogram meets the requirements listed in 227.109.2(ii) and 227.109.2(iii) to be used as an employee's baseline audiogram. All baselines received after February 26, 2007 must meet the requirements in 227.111.

The railroad's doctor or physician will compare periodic audiograms to baseline audiograms in order to determine if a Standard Threshold Shift (STS) has occurred.

If an STS has occurred, the audiogram will be reviewed by the company doctor or contracted physician and the railroad may obtain a retest of the audiogram within 90 days. The results of the retest may be considered that employee's periodic audiogram.

The doctor will review problem audiograms and determine if further evaluation is required. If a comparison of the periodic audiogram to the baseline audiogram indicates that an STS has occurred, the railroad or the railroad doctor will inform the employee in writing within 30 days of the determination.

Unless the railroad's doctor or a follow-up physician or audiologist determines that the STS is not work related, the railroad must ensure that employees not using hearing protection be fitted with hearing protectors, trained in their use, and required to use them. Employees already using hearing protectors

shall be refitted, retrained in the use and care of hearing protection devices offering greater attenuation, and shall be required to use them if necessary.

If subsequent audiometric testing is necessary, or if the railroad or railroad physician suspects that a medical pathology of the ear is caused or aggravated by the use of hearing protectors, the railroad shall refer the employee for a clinical audiological evaluation or an ontological examination. If the railroad suspects that a medical pathology of the ear unrelated to the use of hearing protectors is present, the railroad shall inform the employee of the need for an ontological examination. If subsequent audiometric testing of an employee, whose exposure to noise is less than an 8-hour TWA of 90 dB, indicates that a standard threshold shift is not persistent, the railroad shall inform the employee of the new audiometric interpretation and may discontinue the required use of hearing protectors for that employee.

If a revision of an employee's baseline audiogram is necessary, the railroad doctor will revise the baseline according to Appendix C of 49 CFR Part 227 section 227.109 (i). The railroad doctor may also allow for age correction in determine if an STS has occurred, in accordance with 49 CFR Part 227 Appendix F.

4.D: Testing Requirements

The requirements for audiometric testing are listed in 49 CFR Part 227, section 227.111. The railroad will utilize an audiometric testing form which incorporates the required elements.

SECTION 5: Hearing & Noise Training Program

All employees who are enrolled in the hearing conservation program must complete an occupational hearing and noise training program. The railroad will utilize a Part 227 training program on hearing and noise, based on the requirements of section 227.119.

The 11 elements that 49 CFR Part 227 requires in the training program are as follows:

- (1) The effects of noise on hearing;
- (2) The purpose of hearing protectors;
- (3) The advantages, disadvantages, and attenuation of various types of hearing protectors;
- (4) Instructions on selection, fitting, use, and care of hearing protectors;
- (5) The purpose of audiometric testing, and an explanation of the test procedures;
- (6) An explanation of noise operational controls, where used;
- (7) General information concerning the expected range of workplace noise exposure levels associated with major categories of railroad equipment and operations (*e.g.*, switching and road assignments, hump yards near retarders, etc.) and appropriate reference to requirements of the railroad concerning use of hearing protectors;
- (8) The purpose of noise monitoring and a general description of monitoring procedures;

- (9) The availability of a copy of this part, an explanation of the requirements of this part as they affect the responsibilities of employees, and employees' rights to access records under this part;
- (10) How to determine what can trigger an excessive noise report, pursuant to § 229.121(b);
- (11) How to file an excessive noise report, pursuant to § 229.121(b).

5.A: Training Schedule

For employees enrolled in the hearing conservation program, hearing and noise training must be taken according to the following schedule:

- (1) 'New Hires' – Employees hired after February 26, 2007 must have received the training within 6 months of that employee's first tour of duty.
- (2) Periodic Testing – Employees must be *offered* occupational hearing and noise training at least once each calendar year. The interval between the date offered to any employee for a test in a calendar year and the date offered in the subsequent calendar year shall be no more than 450 days and no less than 280 days. The railroad is *required* to have employees enrolled in the HCP take hearing and noise training at least once every 1,095 days (3 years.)

SECTION 6: Protection of Employees

6.A: Noise Operational Controls

The railroad may use noise operational controls at any sound levels to reduce employee exposures to levels below those listed in Table A-1 of Appendix A of 49 CFR Part 227. Railroads are encouraged to use these controls when employees are exposed to sound levels that are equal to or exceed an 8-hour TWA of 90 dB(A).

Noise operational controls are methods used to reduce noise exposure, other than hearing protection or equipment modification, by reducing the amount of time that a person is exposed to excessive noise. These controls may be used when technologically and economically feasible.

6.B: Hearing Protection Devices

Hearing protection devices are defined as any device that can be worn to reduce the sound level entering an employee's ear. The railroad will provide hearing protection to all employees who are exposed to noise levels at or above the action level, equivalent to an 8-hour TWA of 85 dB(A) or higher. Hearing protection must be provided at no cost to the employees, and shall be replaced as necessary.

The railroad must consider an employee's ability to understand voice and radio communication and audible warnings when issuing hearing protection, and should not provide hearing protectors that over-protect the employee. Employees must be allowed to select their hearing protection from a variety of suitable hearing protection devices, which includes a range of attenuation levels. The railroad shall ensure proper initial fitting of hearing protection and the correct use of all hearing protectors.

6.B.1: Required Use

The use of hearing protection is required at the action level (85 dBA) when an employee has not had a baseline audiogram, or has experienced a Standard Threshold Shift and is required to use hearing protection under 49 CFR Part 227, section 227.109(h).

The use of hearing protection is required when an employee is exposed to sound levels equivalent to an 8-hour TWA of 90 dBA or greater, and the hearing protectors should be used to reduce the sound levels to within those required in Appendix A of 49 CFR Part 227.

6.B.2: Recommended Use

The railroad recommends that hearing protection devices be worn by employees in accordance with company policy, if it is more restrictive than the regulatory requirements. A general tip is to use hearing protection whenever sound levels are too loud to hold a regular conversation. The railroad will take care not to over-protect employees, and should be sure employees can clearly understand radio and voice communication and audible warnings.

6.B.3: Attenuation

When using hearing protection, the railroad shall evaluate the attenuation for the specific noise environments in which the protection will be used. The railroads must use one of the three methods in Appendix B of 49 CFR Part 227, "Methods for Estimating Adequacy of Hearing Protection Attenuation" and hearing protectors must attenuate employee exposure to an 8-hour TWA of 90 dB(A) or lower. For employees who have experienced a Standard Threshold Shift, protection must attenuate the employees to an 8-hour TWA of 85 dB(A) or lower. The railroad will primarily use Method I from Appendix B, 'De-rate by Type'.

De-rate the hearing protector attenuation by type using the following requirements: A.

Subtract 7 dB from the published Noise Reduction Rating (NRR.)

B. Reduce the resulting amount by:

- a. 20% for earmuffs
- b. 40% for form-able earplugs, or
- c. 60% for all other earplugs

C. Subtract the remaining amount from the A-weighted TWA. You will have the estimated A-weighted TWA for that hearing protector.

6.B.4: Types

There are two main types of hearing protection devices – earmuffs and earplugs. **Earmuffs** are devices worn around the ear to reduce the level of noise that reaches the ear. These are commonly banded and worn over the head, although there are helmet-mounted and behind the head versions as well. **Earplugs** are devices designed to provide an airtight seal in the ear canal. There are many different types of earplugs, such as foam, formable, pre-molded and so on. Some may be used more than once, while others are single-use only.

The railroad is also responsible for ensuring the proper use, care and fitting of employees' hearing protection devices. HPDs should always be used and maintained in accordance with the instructions provided with the HPDs.

6.C: Excessive Noise Reports

Per 49 CFR Part 229, section 229.121(b), a railroad employee and locomotive cab occupant is allowed to file an excessive noise report to the railroad to report any conditions that may be causing excessive noise in the cab. Conditions that may lead to excessive noise include, but are not limited to: defective cab window seals; defective cab door seals; broken or inoperative windows; deteriorated insulation or insulation that has been removed for other reasons; broken or inoperative doors; and air brakes that vent inside the cab.

The railroad has an obligation to respond to an excessive noise report that a locomotive cab occupant files. The railroad will meet its obligation regarding excessive noise reports if it makes a good faith effort to identify the cause of the reported noise and successfully repair or replace the items causing the noise, where the source is identified, per 229.121(b)(3).

If a railroad receives an excessive noise report, and the condition giving rise to the report is not required to be immediately corrected under Part 229, the railroad shall maintain a record of the report, and repair or replace the item identified as substantially contributing to the noise on or before the next periodic inspection required by 229.23, or if the railroad determines that the repair or replacement of the item requires significant shop or material resources that are not readily available, per 229.121(b)(1).

SECTION 7: Recordkeeping

The railroad is responsible for making all records available to the FRA for inspection and copying/photocopying upon request.

Railroads must also make an employee's records available for inspection and copying/photocopying to that employee, former employee or such person's representative upon written authorization by such employee.

Railroads must make exposure measurement records for a given run or yard available for inspection and copying/photocopying to all employees who were present in the locomotive cab during the given run and/or who work in the same yard, and make exposure measurement records for specific locations available to regional or national labor representatives, upon request. These reports shall not contain identifying information of an employee unless an employee authorizes the release of such information in writing.

Noise exposure and audiometric testing records must be kept for the duration of a covered employee's employment plus thirty years. The railroad must also maintain records of all employees who are enrolled in the hearing conservation program, for as long as they are designated to remain in the program. Training records must be kept for three years. Records of all employees who had an STS in the previous calendar year must be kept for 5 years. See 49 CFR Part 227, section 227.121 for more detailed information on what records must be kept.

Employees and unauthorized individuals should not have access to any medical or training information except their own. Only authorized railroad hearing conservation program managers should have access to records.

SECTION 8: Evaluation

The railroad will conduct annual evaluations of the hearing conservation program to assess compliance with 49 CFR Part 227. These evaluations may include, but are not limited to, field checks to determine employee compliance with HPD use requirements; post-training quizzes to assess employee training retention; discussions with testing clinics and facilities to ensure that audiograms are being performed according to the requirements; reviews of all written materials; and more.

Engineering Notices in Effect:

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